

KANTHAL A®, KANTHAL AF AND KANTHAL AE

ابعاد و خواص سیم

مقاومت ویژه $1.39\Omega/\text{mm}^2/\text{m}$ چگالی $7.15\text{g}/\text{cm}^3$ برابر بدست آوردن مقاومت ویژه در دمای کارکرد ضربدر فاکتور C مطابق جدول زیر

°C	20	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
C _T	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.04	1.05	1.05	1.06	1.06	1.06	1.06

DIAMETER, MM		RESISTANCE AT 20°C	SURFACE AREA PER Ω	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
KANTHAL® A	KANTHAL AF	Ω/M	CM^2/Ω^*	G/M	CM^2/M	MM^2
10.0	10.0	0.0177	17751	562	314	78.0
	8.25	0.0260	9968	382	259	53.5
	8.0	0.0277	9089	359	251	50.3
	7.5	0.0315	7489	316	236	44.2
	7.35	0.0328	7048	303	231	42.4
	7.0	0.0361	6089	275	220	38.5
	6.54	0.0414	4965	240	205	33.6
	6.5	0.0419	4875	237	204	33.2
	6.0	0.0492	3834	202	188	28.3
	5.83	0.0521	3517	191	183	26.7
	5.5	0.0585	2953	170	173	23.8
	5.2	0.0655	2496	152	163	21.2
	5.0	0.0708	2219	140	157	19.6
	4.75	0.0784	1902	127	149	17.7
	4.62	0.0829	1750	120	145	16.8
	4.5	0.0874	1618	114	141	15.9
	4.25	0.0980	1363	101	134	14.2
	4.11	0.105	1232	94.9	129	13.3
	4.0	0.111	1136	89.8	126	12.6
	3.75	0.126	936	79.0	118	11.0
	3.65	0.133	863	74.8	115	10.5
	3.5	0.144	761	68.8	110	9.62
	3.25	0.168	609	59.3	102	8.30
	3.2	0.173	582	57.5	101	8.04
	3.0	0.197	479	50.5	94.2	7.07
	2.9	0.210	433	47.2	91.1	6.61
	2.8	0.226	390	44.0	88.0	6.16
	2.6	0.262	312	38.0	81.7	5.31
	2.5	0.283	277	35.1	78.5	4.91
	2.4	0.307	245	32.3	75.4	4.52
	2.3	0.335	216	29.7	72.3	4.15

* $\text{cm}^2/\Omega = I^2 \cdot C_T / p$ [I = Current, C_T = temperature factor, p = surface load W/cm²]

[cont.]

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DIAMETER, MM		RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ø CM²/Ø*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
KANTHAL® A	KANTHAL AF					
	2.25	0.350	202	28.4	70.7	3.98
	2.2	0.366	189	27.2	69.1	3.80
	2.0	0.442	142	22.5	62.8	3.14
	1.8	0.546	104	18.2	56.5	2.54
	1.7	0.612	87.2	16.2	53.4	2.27
	1.65	0.650	79.7	15.3	51.8	2.14
	1.6	0.691	72.7	14.4	50.3	2.01
	1.5	0.787	59.9	12.6	47.1	1.77
	1.4	0.903	48.7	11.0	44.0	1.54
	1.3	1.05	39.0	9.49	40.8	1.33
	1.2	1.23	30.7	8.09	37.7	1.13
	1.1	1.46	23.6	6.79	34.6	0.950
	1.0	1.77	17.8	5.62	31.4	0.785
	0.95	1.96	15.2	5.07	29.8	0.709
0.90	0.90	2.18	12.9	4.55	28.3	0.636
0.85	0.85	2.45	10.9	4.06	26.7	0.567
0.80	0.80	2.77	9.09	3.59	25.1	0.503
0.75	0.75	3.15	7.49	3.16	23.6	0.442
0.70	0.70	3.61	6.09	2.75	22.0	0.385
0.65	0.65	4.19	4.87	2.37	20.4	0.332
0.60	0.60	4.92	3.83	2.02	18.8	0.283
0.55	0.55	5.85	2.95	1.70	17.3	0.238
0.50	0.50	7.08	2.22	1.40	15.7	0.196
0.45	0.45	8.74	1.62	1.14	14.1	0.159
0.40	0.40	11.1	1.14	0.898	12.6	0.126
0.35	0.35	14.4	0.761	0.688	11.0	0.0962
0.30	0.30	19.7	0.479	0.505	9.42	0.0707
0.25		28.3	0.277	0.351	7.85	0.0491
0.20		44.2	0.142	0.225	6.28	0.0314
0.15		78.7	0.060	0.126	4.71	0.0177

* $\text{cm}^2/\text{Ø} = P \cdot C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

KANTHAL A®, KANTHAL AF AND KANTHAL AE

ابعاد و خواص سیم تخت

مقاومت ویژه $1.39\Omega/\text{mm}^2/\text{m}$ چگالی $7.15\text{g}/\text{cm}^3$ برابر بدست آوردن مقاومت ویژه در دمای کارکرد ضریب فاکتور C

°C	20	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
C_T	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.04	1.05	1.05	1.06	1.06	1.06	1.06

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
4	0.50	0.755	119	13.2	90.0	1.84
	0.40	0.944	93.2	10.5	88.0	1.47
	0.30	1.26	68.3	7.89	86.0	1.10
	0.20	1.89	44.5	5.26	84.0	0.736
	0.15	2.52	33.0	3.95	83.0	0.552
	0.10	3.78	21.7	2.63	82.0	0.368
3	1.0	0.504	159	19.7	80.0	2.76
	0.90	0.560	139	17.8	78.0	2.48
	0.80	0.630	121	15.8	76.0	2.21
	0.70	0.719	103	13.8	74.0	1.93
	0.60	0.839	85.8	11.8	72.0	1.66
	0.50	1.01	69.5	9.87	70.0	1.38
	0.40	1.26	54.0	7.89	68.0	1.10
	0.30	1.68	39.3	5.92	66.0	0.828
	0.20	2.52	25.4	3.95	64.0	0.552
	0.15	3.36	18.8	2.96	63.0	0.414
2.5	0.10	5.04	12.3	1.97	62.0	0.276
	1.0	0.604	116	16.4	70.0	2.30
	0.90	0.671	101	14.8	68.0	2.07
	0.80	0.755	87.4	13.2	66.0	1.84
	0.70	0.863	74.1	11.5	64.0	1.61
	0.60	1.01	61.6	9.87	62.0	1.38
	0.50	1.21	49.6	8.22	60.0	1.15
	0.40	1.51	38.4	6.58	58.0	0.920
	0.30	2.01	27.8	4.93	56.0	0.690
	0.20	3.02	17.9	3.29	54.0	0.460
2.0	0.15	4.03	13.2	2.47	53.0	0.345
	0.10	6.04	8.60	1.64	52.0	0.230
	0.80	0.944	59.3	10.5	56.0	1.47
	0.70	1.08	50.0	9.21	54.0	1.29
	0.60	1.26	41.3	7.89	52.0	1.10
	0.50	1.51	33.1	6.58	50.0	0.920

* $\text{cm}^2/\Omega = I^2 \cdot C_T / p$ (I = Current, C_T = temperature factor, p = surface load W/cm²)

[cont.]

(cont.)

WIDTH	THICKNESS	RESISTANCE AT 20°C	SURFACE AREA PER Ø	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	MM	Ø/M	CM²/Ø*	G/M	CM²/M	MM²
2.0	0.40	1.89	25.4	5.26	48.0	0.736
	0.30	2.52	18.3	3.95	46.0	0.552
	0.20	3.78	11.6	2.63	44.0	0.368
	0.15	5.04	8.54	1.97	43.0	0.276
	0.10	7.55	5.56	1.32	42.0	0.184
1.8	0.80	1.05	49.6	9.47	52.0	1.32
	0.70	1.20	41.7	8.29	50.0	1.16
	0.60	1.40	34.3	7.10	48.0	0.994
	0.50	1.68	27.4	5.92	46.0	0.828
	0.40	2.10	21.0	4.74	44.0	0.662
	0.30	2.80	15.0	3.55	42.0	0.497
	0.20	4.20	9.53	2.37	40.0	0.331
	0.15	5.60	6.97	1.78	39.0	0.248
	0.10	8.39	4.53	1.18	38.0	0.166
	0.80	1.26	36.5	7.89	46.0	1.10
1.5	0.70	1.44	30.6	6.91	44.0	0.966
	0.60	1.68	25.0	5.92	42.0	0.828
	0.50	2.01	19.9	4.93	40.0	0.690
	0.40	2.52	15.1	3.95	38.0	0.552
	0.30	3.36	10.7	2.96	36.0	0.414
	0.20	5.04	6.75	1.97	34.0	0.276
	0.15	6.71	4.91	1.48	33.0	0.207
	0.10	10.1	3.18	0.987	32.0	0.138
	0.090	11.2	2.84	0.888	31.8	0.124
	0.080	12.6	2.51	0.789	31.6	0.110
1.2	0.80	1.57	25.4	6.31	40.0	0.883
	0.70	1.80	21.1	5.53	38.0	0.773
	0.60	2.10	17.2	4.74	36.0	0.662
	0.50	2.52	13.5	3.95	34.0	0.552
	0.40	3.15	10.2	3.16	32.0	0.442
	0.30	4.20	7.15	2.37	30.0	0.331
	0.20	6.30	4.45	1.58	28.0	0.221

* $\text{cm}^2/\text{Ø} = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

(cont.)

KANTHAL® A, KANTHAL AF AND KANTHAL AE RIBBON DIMENSIONS AND PROPERTIES

(cont.)

WIDTH	THICKNESS	RESISTANCE AT 20°C	SURFACE AREA PER Ø	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	MM	Ω/M	CM²/Ø*	G/M	CM²/M	MM²
1.2	0.15	8.39	3.22	1.18	27.0	0.166
	0.10	12.6	2.07	0.789	26.0	0.110
	0.090	14.0	1.84	0.710	25.8	0.0994
	0.080	15.7	1.63	0.631	25.6	0.0883
1.0	0.60	2.52	12.7	3.95	32.0	0.552
	0.50	3.02	9.93	3.29	30.0	0.460
	0.40	3.78	7.41	2.63	28.0	0.368
	0.30	5.04	5.16	1.97	26.0	0.276
	0.20	7.55	3.18	1.32	24.0	0.184
	0.15	10.1	2.28	0.987	23.0	0.138
	0.10	15.1	1.46	0.658	22.0	0.0920
	0.090	16.8	1.30	0.592	21.8	0.0828
	0.080	18.9	1.14	0.526	21.6	0.0736
	0.50	3.36	8.34	2.96	28.0	0.414
0.9	0.40	4.20	6.20	2.37	26.0	0.331
	0.30	5.60	4.29	1.78	24.0	0.248
	0.20	8.39	2.62	1.18	22.0	0.166
	0.15	11.2	1.88	0.888	21.0	0.124
	0.10	16.8	1.19	0.592	20.0	0.0828
	0.090	18.7	1.06	0.533	19.8	0.0745
	0.080	21.0	0.934	0.474	19.6	0.0662
	0.070	24.0	0.809	0.414	19.4	0.0580
	0.060	28.0	0.686	0.355	19.2	0.0497
	0.050	33.6	0.566	0.296	19.0	0.0414
0.8	0.40	4.72	5.08	2.10	24.0	0.294
	0.30	6.30	3.49	1.58	22.0	0.221
	0.20	9.44	2.12	1.05	20.0	0.147
	0.15	12.6	1.51	0.789	19.0	0.110
	0.10	18.9	0.953	0.526	18.0	0.0736
	0.090	21.0	0.848	0.474	17.8	0.0662
	0.080	23.6	0.746	0.421	17.6	0.0589
	0.070	27.0	0.645	0.368	17.4	0.0515
0.7	0.30	7.19	2.78	1.38	20.0	0.193
	0.20	10.8	1.67	0.921	18.0	0.129
	0.15	14.4	1.18	0.691	17.0	0.097
	0.10	21.6	0.741	0.460	16.0	0.0644

* $\text{cm}^2/\text{Ø} = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm^2)

(cont.)

(cont.)

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
0.7	0.090	24.0	0.659	0.414	15.8	0.0580
	0.080	27.0	0.578	0.368	15.6	0.0515
	0.070	30.8	0.499	0.322	15.4	0.0451
	0.060	36.0	0.423	0.276	15.2	0.0386
0.6	0.30	8.4	2.14	1.18	18.0	0.166
	0.20	12.6	1.27	0.789	16.0	0.110
	0.15	16.8	0.894	0.592	15.0	0.0828
	0.10	25.2	0.556	0.395	14.0	0.0552
	0.090	28.0	0.493	0.355	13.8	0.0497
	0.080	31.5	0.432	0.316	13.6	0.0442
	0.070	36.0	0.373	0.276	13.4	0.0386
	0.060	42.0	0.315	0.237	13.2	0.0331
	0.050	50.4	0.258	0.197	13.0	0.0276
0.5	0.30	10.1	1.59	0.987	16.0	0.138
	0.20	15.1	0.927	0.658	14.0	0.0920
	0.15	20.1	0.645	0.493	13.0	0.0690
	0.10	30.2	0.397	0.329	12.0	0.0460
	0.090	33.6	0.351	0.296	11.8	0.0414
	0.080	37.8	0.307	0.263	11.6	0.0368
	0.070	43.2	0.264	0.230	11.4	0.0322
	0.060	50.4	0.222	0.197	11.2	0.0276
	0.050	60.4	0.182	0.164	11.0	0.0230
0.4	0.20	18.9	0.635	0.526	12.0	0.0736
	0.15	25.2	0.437	0.395	11.0	0.0552
	0.10	37.8	0.265	0.263	10.0	0.0368
	0.090	42.0	0.234	0.237	9.80	0.0331
	0.080	47.2	0.203	0.210	9.60	0.0294
	0.070	54.0	0.174	0.184	9.40	0.0258
	0.060	63.0	0.146	0.158	9.20	0.0221
	0.050	75.5	0.119	0.132	9.00	0.0184
0.3	0.15	33.6	0.268	0.296	9.00	0.0414
	0.10	50.4	0.159	0.197	8.00	0.0276
	0.090	56.0	0.139	0.178	7.80	0.0248
	0.080	63.0	0.121	0.158	7.60	0.0221
	0.070	71.9	0.103	0.138	7.40	0.0193
	0.060	83.9	0.0858	0.118	7.20	0.0166

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

KANTHAL® D

ابعاد و خواص سیم

مقاومت ویژه 1.35 /mm²/m چگالی 7.25 g/cm³ برابر بدست آوردن مقاومت ویژه در دمای کارکرد ضربدر فاکتور

°C	20	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
C _T	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.07	1.07	1.08	1.08

DIAMETER	RESISTANCE AT 20°C	RESISTIVITY AT 20°C	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	Ω/M	CM ² /Ω*	G/M	CM ² /M	MM ²
8.0	0.0269	9358	364	251	50.3
6.5	0.0407	5019	241	204	33.2
6.0	0.0477	3948	205	188	28.3
5.5	0.0568	3041	172	173	23.8
5.0	0.0688	2285	142	157	19.6
4.75	0.0762	1959	128	149	17.7
4.5	0.0849	1666	115	141	15.9
4.25	0.0952	1403	103	134	14.2
4.06	0.104	1223	93.9	128	12.9
4.0	0.107	1170	91.1	126	12.6
3.75	0.122	964	80.1	118	11.0
3.65	0.129	889	75.9	115	10.5
3.5	0.140	784	69.8	110	9.62
3.25	0.163	627	60.1	102	8.30
3.0	0.191	493	51.2	94.2	7.07
2.95	0.198	469	49.6	92.7	6.8
2.8	0.219	401	44.6	88.0	6.16
2.65	0.245	340	40.0	83.3	5.5
2.5	0.275	286	35.6	78.5	4.91
2.0	0.430	146	22.8	62.8	3.14
1.8	0.531	107	18.4	56.5	2.54
1.7	0.595	89.8	16.5	53.4	2.27
1.6	0.671	74.9	14.6	50.3	2.01
1.5	0.764	61.7	12.8	47.1	1.77
1.4	0.877	50.2	11.2	44.0	1.54
1.3	1.02	40.2	9.62	40.8	1.33
1.2	1.19	31.6	8.20	37.7	1.13
1.1	1.42	24.3	6.89	34.6	0.950

* cm²/Ω = I² × C_T / p (I = Current, C_T = temperature factor, p = surface load W/cm²)

[cont.]

(cont.)

DIAMETER	RESISTANCE AT 20°C	RESISTIVITY AT 20°C	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	Ω/M	CM ² /Ω*	G/M	CM ² /M	MM ²
1.0	1.72	18.3	5.69	31.4	0.785
0.95	1.90	15.7	5.14	29.8	0.709
0.90	2.12	13.3	4.61	28.3	0.636
0.85	2.38	11.2	4.11	26.7	0.567
0.80	2.69	9.36	3.64	25.1	0.503
0.75	3.06	7.71	3.20	23.6	0.442
0.70	3.51	6.27	2.79	22.0	0.385
0.65	4.07	5.02	2.41	20.4	0.332
0.60	4.77	3.95	2.05	18.8	0.283
0.55	5.68	3.04	1.72	17.3	0.238
0.50	6.88	2.28	1.42	15.7	0.196
0.45	8.49	1.67	1.15	14.1	0.159
0.42	9.74	1.35	1.00	13.2	0.139
0.40	10.7	1.17	0.911	12.6	0.126
0.35	14.0	0.784	0.698	11.0	0.0962
0.32	16.8	0.599	0.583	10.1	0.0804
0.30	19.1	0.493	0.512	9.42	0.0707
0.28	21.9	0.401	0.446	8.80	0.061
0.25	27.5	0.286	0.356	7.85	0.0491
0.22	35.5	0.195	0.276	6.91	0.0380
0.20	43.0	0.146	0.228	6.28	0.0314
0.19	47.6	0.125	0.206	5.97	0.0284
0.18	53.1	0.107	0.184	5.65	0.0254
0.17	59.5	0.0898	0.165	5.34	0.0227
0.16	67.1	0.0749	0.146	5.03	0.0201
0.15	76.4	0.0617	0.128	4.71	0.0177
0.14	87.7	0.0502	0.112	4.40	0.0154
0.13	102	0.0402	0.0962	4.08	0.0133

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

KANTHAL® D

ابعاد و خواص سیم تخت

مقاومت ویژه 1.39 mm²/m Ω چگالی 7.25g/cm³ برابر بدست آوردن مقاومت ویژه در دمای کارکرد ضربدر فاکتور c

°C	20	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
C _T	1.00	1.00	1.01	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.07	1.07	1.08	1.08

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
4	0.50	0.734	123	13.3	90.0	1.84
	0.40	0.917	96.0	10.7	88.0	1.47
	0.30	1.22	70.3	8.00	86.0	1.10
	0.20	1.83	45.8	5.34	84.0	0.736
	0.15	2.45	33.9	4.00	83.0	0.552
	0.10	3.67	22.4	2.67	82.0	0.368
3	1.0	0.489	164	20.0	80.0	2.76
	0.90	0.543	144	18.0	78.0	2.48
	0.80	0.611	124	16.0	76.0	2.21
	0.70	0.699	106	14.0	74.0	1.93
	0.60	0.815	88.3	12.0	72.0	1.66
	0.50	0.978	71.6	10.0	70.0	1.38
	0.40	1.22	55.6	8.0	68.0	1.10
	0.30	1.63	40.5	6.0	66.0	0.828
	0.20	2.45	26.2	4.0	64.0	0.552
	0.15	3.26	19.3	3.0	63.0	0.414
2.5	0.10	4.89	12.7	2.0	62.0	0.276
	1.0	0.587	119	16.7	70.0	2.30
	0.90	0.652	104	15.0	68.0	2.07
	0.80	0.734	90.0	13.3	66.0	1.84
	0.70	0.839	76.3	11.7	64.0	1.61
	0.60	0.978	63.4	10.0	62.0	1.38
	0.50	1.17	51.1	8.34	60.0	1.15
	0.40	1.47	39.5	6.67	58.0	0.920
	0.30	1.96	28.6	5.00	56.0	0.690
	0.20	2.93	18.4	3.34	54.0	0.460
2.25	0.15	3.91	13.5	2.50	53.0	0.345
	0.10	5.87	8.86	1.67	52.0	0.230
	1.0	0.652	99.7	15.0	65.0	2.07
	0.90	0.725	86.9	13.5	63.0	1.86
	0.80	0.815	74.8	12.0	61.0	1.66
	0.70	0.932	63.3	10.5	59.0	1.45
	0.60	1.09	52.4	9.00	57.0	1.24
	0.50	1.30	42.2	7.50	55.0	1.04
	0.40	1.63	32.5	6.00	53.0	0.828
	0.30	2.17	23.5	4.50	51.0	0.621

* cm²/Ω - I² = C_T/p (I = Current, C_T = temperature factor, p = surface load W/cm²)

[cont.]

(cont.)

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
2.25	0.20	3.26	15.0	3.00	49.0	0.414
	0.15	4.35	11.0	2.25	48.0	0.311
	0.10	6.52	7.21	1.50	47.0	0.207
2.0	0.80	0.917	61.1	10.7	56.0	1.47
	0.70	1.05	51.5	9.34	54.0	1.29
	0.60	1.22	42.5	8.00	52.0	1.10
	0.50	1.47	34.1	6.67	50.0	0.920
	0.40	1.83	26.2	5.34	48.0	0.736
	0.30	2.45	18.8	4.00	46.0	0.552
	0.20	3.67	12.0	2.67	44.0	0.368
	0.15	4.89	8.79	2.00	43.0	0.276
	0.10	7.34	5.72	1.33	42.0	0.184
1.75	1.0	0.839	65.6	11.7	55.0	1.61
	0.90	0.932	56.9	10.5	53.0	1.45
	0.80	1.05	48.7	9.34	51.0	1.29
	0.70	1.20	40.9	8.17	49.0	1.13
	0.60	1.40	33.6	7.00	47.0	0.966
	0.50	1.68	26.8	5.84	45.0	0.805
	0.40	2.10	20.5	4.67	43.0	0.644
	0.30	2.80	14.7	3.50	41.0	0.483
	0.20	4.19	9.30	2.33	39.0	0.322
	0.15	5.59	6.80	1.75	38.0	0.242
	0.10	8.39	4.41	1.17	37.0	0.161
1.5	0.70	1.40	31.5	7.00	44.0	0.966
	0.60	1.63	25.8	6.00	42.0	0.828
	0.50	1.96	20.4	5.00	40.0	0.690
	0.40	2.45	15.5	4.00	38.0	0.552
	0.30	3.26	11.0	3.00	36.0	0.414
	0.50	2.52	13.5	3.95	34.0	0.552
	0.40	3.15	10.2	3.16	32.0	0.442
	0.30	4.20	7.15	2.37	30.0	0.331
	0.20	6.30	4.45	1.58	28.0	0.221
	0.20	4.89	6.95	2.00	34.0	0.276
	0.15	6.52	5.06	1.50	33.0	0.207
	0.10	9.78	3.27	1.00	32.0	0.138
	0.090	10.9	2.93	0.900	31.8	0.124

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

(cont.)

KANTHAL® D RIBBON DIMENSIONS AND PROPERTIES

[cont.]

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ø CM²/Ø*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
1.5	0.080	12.2	2.58	0.800	31.6	0.110
1.25	0.60	1.96	18.9	5.00	37.0	0.690
	0.50	2.35	14.9	4.17	35.0	0.575
	0.40	2.93	11.2	3.34	33.0	0.460
	0.30	3.91	7.92	2.50	31.0	0.345
	0.20	5.87	4.94	1.67	29.0	0.230
	0.15	7.83	3.58	1.25	28.0	0.173
	0.10	11.7	2.30	0.834	27.0	0.115
	0.090	13.0	2.05	0.750	26.8	0.104
	0.080	14.7	1.81	0.667	26.6	0.0920
	0.070	16.8	1.57	0.584	26.4	0.0805
1.0	0.60	2.45	13.1	4.00	32.0	0.552
	0.50	2.93	10.2	3.34	30.0	0.460
	0.40	3.67	7.63	2.67	28.0	0.368
	0.30	4.89	5.32	2.00	26.0	0.276
	0.20	7.34	3.27	1.33	24.0	0.184
	0.15	9.78	2.35	1.00	23.0	0.138
	0.10	14.7	1.50	0.667	22.0	0.0920
	0.090	16.3	1.34	0.600	21.8	0.0828
	0.080	18.3	1.18	0.534	21.6	0.0736
0.9	0.50	3.26	8.59	3.00	28.0	0.414
	0.40	4.08	6.38	2.40	26.0	0.331
	0.30	5.43	4.42	1.80	24.0	0.248
	0.20	8.15	2.70	1.20	22.0	0.166
	0.15	10.9	1.93	0.900	21.0	0.124
	0.10	16.3	1.23	0.600	20.0	0.0828
	0.090	18.1	1.09	0.540	19.8	0.0745
	0.080	20.4	0.962	0.480	19.6	0.0662
	0.070	23.3	0.833	0.420	19.4	0.0580
	0.060	27.2	0.707	0.360	19.2	0.0497
	0.050	32.6	0.583	0.300	19.0	0.0414
0.8	0.50	3.67	7.09	2.67	26.0	0.368
	0.40	4.59	5.23	2.13	24.0	0.294
	0.30	6.11	3.60	1.60	22.0	0.221
	0.20	9.17	2.18	1.07	20.0	0.147
	0.15	12.2	1.55	0.800	19.0	0.110
	0.10	18.3	0.981	0.534	18.0	0.0736
	0.090	20.4	0.873	0.480	17.8	0.0662
	0.080	22.9	0.768	0.427	17.6	0.0589
	0.070	26.2	0.664	0.374	17.4	0.0515
0.7	0.40	5.24	4.20	1.87	22.0	0.258
	0.30	6.99	2.86	1.40	20.0	0.193

* $\text{cm}^2/\text{D} = I^2 \cdot R / p$ - Current, R - temperature factor, p - surface load W/cm^2

[cont.]

[cont.]

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM²/Ω*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
0.7	0.20	10.5	1.72	0.934	18.0	0.129
	0.15	14.0	1.22	0.700	17.0	0.097
	0.10	21.0	0.763	0.467	16.0	0.0644
	0.090	23.3	0.678	0.420	15.8	0.0580
	0.080	26.2	0.595	0.374	15.6	0.0515
	0.070	29.9	0.514	0.327	15.4	0.0451
	0.060	34.9	0.435	0.280	15.2	0.0386
0.6	0.30	8.15	2.21	1.20	18.0	0.166
	0.20	12.2	1.31	0.800	16.0	0.110
	0.15	16.3	0.920	0.600	15.0	0.0828
	0.10	24.5	0.572	0.400	14.0	0.0552
	0.090	27.2	0.508	0.360	13.8	0.0497
	0.080	30.6	0.445	0.320	13.6	0.0442
	0.070	34.9	0.384	0.280	13.4	0.0386
	0.060	40.8	0.324	0.240	13.2	0.0331
	0.050	48.9	0.266	0.200	13.0	0.0276
0.5	0.30	9.78	1.64	1.00	16.0	0.138
	0.20	14.7	0.954	0.667	14.0	0.0920
	0.15	19.6	0.664	0.500	13.0	0.0690
	0.10	29.3	0.409	0.334	12.0	0.0460
	0.090	32.6	0.362	0.300	11.8	0.0414
	0.080	36.7	0.316	0.267	11.6	0.0368
	0.070	41.9	0.272	0.233	11.4	0.0322
	0.060	48.9	0.229	0.200	11.2	0.0276
	0.050	58.7	0.187	0.167	11.0	0.0230
0.4	0.20	18.3	0.654	0.534	12.0	0.0736
	0.15	24.5	0.450	0.400	11.0	0.0552
	0.10	36.7	0.273	0.267	10.0	0.0368
	0.090	40.8	0.240	0.240	9.80	0.0331
	0.080	45.9	0.209	0.213	9.60	0.0294
	0.070	52.4	0.179	0.187	9.40	0.0258
	0.060	61.1	0.150	0.160	9.20	0.0221
	0.050	73.4	0.123	0.133	9.00	0.0184
0.3	0.15	32.6	0.276	0.300	9.00	0.0414
	0.10	48.9	0.164	0.200	8.00	0.0276
	0.090	54.3	0.144	0.180	7.80	0.0248
	0.080	61.1	0.124	0.160	7.60	0.0221
	0.070	69.9	0.106	0.140	7.40	0.0193
	0.060	81.5	0.0883	0.120	7.20	0.0166

* $\text{cm}^2/\Omega = I^2 \cdot C_t / p$ [I = Current, C_t = temperature factor, p = surface load W/cm²]

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ALKROTHAL®

ابعاد و خواص سیم

مقاومت ویژه $1.25 \Omega/\text{mm}^2/\text{m}$ چگالی $7.28\text{g}/\text{cm}^3$ برای بدست آوردن مقاومت ویژه در دمای کارکرد ضربدر فاکتور C_T مطابق جدول زیر

To obtain resistivity at working temperature, multiply by factor C_T in following table.

°C	20	100	200	300	400	500	600	700	800	900	1000	1100
C_T	1.00	1.00	1.02	1.03	1.04	1.05	1.08	1.09	1.10	1.11	1.11	1.12

DIAMETER MM	RESISTANCE AT 20°C Ω/M	RESISTIVITY AT 20°C CM^2/Ω^*	WEIGHT G/M	SURFACE AREA CM^2/M	CROSS SECTIONAL AREA MM^2
6.5	0.0377	5421	242	204	33.2
6.0	0.0442	4264	206	188	28.3
5.5	0.0526	3284	173	173	23.8
5.0	0.0637	2467	143	157	19.6
4.75	0.0705	2115	129	149	17.7
4.5	0.0786	1799	116	141	15.9
4.25	0.0881	1515	103	134	14.2
4.0	0.0995	1263	91.5	126	12.6
3.75	0.113	1041	80.4	118	11.0
3.5	0.130	846	70.0	110	9.62
3.25	0.151	678	60.4	102	8.30
3.0	0.177	533	51.5	94.2	7.07
2.8	0.203	433	44.8	88.0	6.16
2.6	0.235	347	38.7	81.7	5.31
2.5	0.255	308	35.7	78.5	4.91
2.2	0.329	210	27.7	69.1	3.80
2.0	0.398	158	22.9	62.8	3.14
1.9	0.441	135	20.6	59.7	2.84
1.8	0.491	115	18.5	56.5	2.54
1.7	0.551	97.0	16.5	53.4	2.27
1.6	0.622	80.9	14.6	50.3	2.01
1.5	0.707	66.6	12.9	47.1	1.77
1.4	0.812	54.2	11.2	44.0	1.54
1.3	0.942	43.4	9.66	40.8	1.33
1.2	1.11	34.1	8.23	37.7	1.13
1.1	1.32	26.3	6.92	34.6	0.95
1.0	1.59	19.7	5.72	31.4	0.785
0.95	1.76	16.9	5.16	29.8	0.709
0.90	1.96	14.4	4.63	28.3	0.636
0.85	2.20	12.1	4.13	26.7	0.567

* $\text{cm}^2/\Omega = I^2 \times C_T / p$ (I = Current, C_T = temperature factor, p = surface load W/cm²)

[cont.]

(cont.)

DIAMETER	RESISTANCE AT 20°C	RESISTIVITY AT 20°C	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	Ω/M	CM ² /Ω*	G/M	CM ² /M	MM ²
0.80	2.49	10.1	3.66	25.1	0.503
0.75	2.83	8.33	3.22	23.6	0.442
0.70	3.25	6.77	2.80	22.0	0.385
0.65	3.77	5.42	2.42	20.4	0.332
0.60	4.42	4.26	2.06	18.8	0.283
0.55	5.26	3.28	1.73	17.3	0.238
0.50	6.37	2.47	1.43	15.7	0.196
0.475	7.05	2.12	1.29	14.9	0.177
0.45	7.86	1.80	1.16	14.1	0.159
0.425	8.81	1.52	1.03	13.4	0.142
0.40	9.95	1.26	0.915	12.6	0.126
0.375	11.3	1.04	0.804	11.8	0.110
0.35	13.0	0.846	0.700	11.0	0.0962
0.32	15.5	0.647	0.585	10.1	0.0804
0.30	17.7	0.533	0.515	9.42	0.0707
0.28	20.3	0.433	0.448	8.80	0.0616
0.26	23.5	0.347	0.387	8.17	0.0531
0.25	25.5	0.308	0.357	7.85	0.0491
0.24	27.6	0.273	0.329	7.54	0.0452
0.23	30.1	0.240	0.302	7.23	0.0415
0.22	32.9	0.210	0.277	6.91	0.0380
0.21	36.1	0.183	0.252	6.60	0.0346
0.20	39.8	0.158	0.229	6.28	0.0314
0.19	44.1	0.135	0.206	5.97	0.0284
0.18	49.1	0.115	0.185	5.65	0.0254
0.17	55.1	0.0970	0.165	5.34	0.0227
0.16	62.2	0.0809	0.146	5.03	0.0201
0.15	70.7	0.0666	0.129	4.71	0.0177
0.14	81.2	0.0542	0.112	4.40	0.0154
0.13	94.2	0.0434	0.0966	4.08	0.0133

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

ALKROTHAL®

ابعاد و خواص سیم تخت

مقاومت ویژه $1,25 \Omega/\text{mm}^2/\text{m}$ چگالی $7,28 \text{ g/cm}^3$ برای بدست آوردن مقاومت ویژه در دمای کارکرد ضربدر فاکتور C_T مطابق جدول زیر

°C	20	100	200	300	400	500	600	700	800	900	1000	1100
C_T	1.00	1.00	1.02	1.03	1.04	1.05	1.08	1.09	1.10	1.11	1.11	1.12

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
4	0.50	0.679	132	13.4	90.0	1.84
	0.40	0.849	103.6	10.7	88.0	1.47
	0.30	1.13	76.0	8.04	86.0	1.10
	0.20	1.70	49.5	5.36	84.0	0.736
	0.15	2.26	36.7	4.02	83.0	0.552
	0.10	3.40	24.1	2.67	82.0	0.368
3	1.0	0.453	177	20.1	80.0	2.76
	0.90	0.503	155	18.1	78.0	2.48
	0.80	0.566	134	16.1	76.0	2.21
	0.70	0.647	114	14.1	74.0	1.93
	0.60	0.755	95.4	12.1	72.0	1.66
	0.50	0.906	77.3	10.0	70.0	1.38
	0.40	1.13	60.1	8.0	68.0	1.10
	0.30	1.51	43.7	6.0	66.0	0.828
	0.20	2.26	28.3	4.0	64.0	0.552
	0.15	3.02	20.9	3.0	63.0	0.414
2.5	0.10	4.53	13.7	2.0	62.0	0.276
	1.0	0.543	129	16.7	70.0	2.30
	0.90	0.604	113	15.1	68.0	2.07
	0.80	0.679	97.2	13.4	66.0	1.84
	0.70	0.776	82.4	11.7	64.0	1.61
	0.60	0.906	68.4	10.0	62.0	1.38
	0.50	1.09	55.2	8.37	60.0	1.15
	0.40	1.36	42.7	6.70	58.0	0.920
	0.30	1.81	30.9	5.02	56.0	0.690
	0.20	2.72	19.9	3.35	54.0	0.460
	0.15	3.62	14.6	2.51	53.0	0.345
	0.10	5.43	9.57	1.67	52.0	0.230
	1.0	0.604	107.6	15.1	65.0	2.07
	0.90	0.671	93.9	13.6	63.0	1.86
2.25	0.80	0.755	80.8	12.1	61.0	1.66
	0.70	0.863	68.4	10.5	59.0	1.45
	0.60	1.006	56.6	9.0	57.0	1.24
	0.50	1.208	45.5	7.5	55.0	1.04

* $\text{cm}^2/\Omega = I^2 \times C_T / p$ (I = Current, C_T = temperature factor, p = surface load W/cm²)

(cont.)

(cont.)

WIDTH	THICKNESS	RESISTANCE AT 20°C	SURFACE AREA PER Ω	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	MM	Ω/M	CM ² /Ω*	G/M	CM ² /M	MM ²
2.25	0.40	1.510	35.1	6.0	53.0	0.828
	0.30	2.013	25.3	4.5	51.0	0.621
	0.20	3.019	16.2	3.0	49.0	0.414
	0.15	4.026	11.9	2.3	48.0	0.311
	0.10	6.52	7.21	1.5	47.0	0.207
2.0	0.80	0.849	65.9	10.7	56.0	1.47
	0.70	0.970	55.6	9.4	54.0	1.29
	0.60	1.13	45.9	8.04	52.0	1.10
	0.50	1.36	36.8	6.70	50.0	0.920
	0.40	1.70	28.3	5.36	48.0	0.736
	0.30	2.26	20.3	4.02	46.0	0.552
	0.20	3.40	13.0	2.68	44.0	0.368
	0.15	4.53	9.5	2.01	43.0	0.276
	0.10	7.34	5.72	1.34	42.0	0.184
1.75	1.0	0.776	70.8	11.7	55.0	1.61
	0.90	0.863	61.4	10.5	53.0	1.45
	0.80	0.970	52.6	9.4	51.0	1.29
	0.70	1.11	44.2	8.20	49.0	1.13
	0.60	1.29	36.3	7.03	47.0	0.966
	0.50	1.55	29.0	5.86	45.0	0.805
	0.40	1.94	22.2	4.69	43.0	0.644
	0.30	2.59	15.8	3.52	41.0	0.483
	0.20	3.88	10.0	2.34	39.0	0.322
	0.15	5.18	7.34	1.76	38.0	0.242
	0.10	8.39	4.41	1.17	37.0	0.161
1.5	0.70	1.29	34.0	7.04	44.0	0.966
	0.60	1.51	27.8	6.03	42.0	0.828
	0.50	1.81	22.1	5.03	40.0	0.690
	0.40	2.26	16.8	4.02	38.0	0.552
	0.30	3.02	11.9	3.02	36.0	0.414
	0.20	4.53	7.51	2.01	34.0	0.276
	0.15	6.04	5.46	1.51	33.0	0.207
	0.10	9.06	3.53	1.01	32.0	0.138
	0.090	10.1	3.16	0.905	31.8	0.124

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

(cont.)

ALKROTHAL® RIBBON DIMENSIONS AND PROPERTIES

(cont.)

WIDTH	THICKNESS	RESISTANCE AT 20°C	SURFACE AREA PER Ø	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	MM	Ω/M	CM ² /Ø*	G/M	CM ² /M	MM ²
1.5	0.080	11.3	2.79	0.805	31.6	0.110
1.25	0.60	1.81	20.4	5.02	37.0	0.690
	0.50	2.17	16.1	4.19	35.0	0.575
	0.40	2.72	12.1	3.35	33.0	0.460
	0.30	3.62	8.56	2.51	31.0	0.345
	0.20	5.43	5.34	1.67	29.0	0.230
	0.15	7.25	3.86	1.26	28.0	0.173
	0.10	10.9	2.48	0.837	27.0	0.115
	0.090	12.1	2.22	0.753	26.8	0.104
	0.080	13.6	1.96	0.670	26.6	0.0920
	0.070	15.5	1.70	0.586	26.4	0.0805
1.0	0.60	2.26	14.1	4.02	32.0	0.552
	0.50	2.72	11.0	3.35	30.0	0.460
	0.40	3.40	8.24	2.68	28.0	0.368
	0.30	4.53	5.74	2.01	26.0	0.276
	0.20	6.79	3.53	1.34	24.0	0.184
	0.15	9.06	2.54	1.00	23.0	0.138
	0.10	13.6	1.62	0.670	22.0	0.0920
	0.090	15.1	1.44	0.603	21.8	0.0828
	0.080	17.0	1.27	0.536	21.6	0.0736
0.9	0.50	3.02	9.27	3.01	28.0	0.414
	0.40	3.77	6.89	2.41	26.0	0.331
	0.30	5.03	4.77	1.81	24.0	0.248
	0.20	7.55	2.91	1.21	22.0	0.166
	0.15	10.1	2.09	0.904	21.0	0.124
	0.10	15.1	1.32	0.603	20.0	0.0828
	0.090	16.8	1.18	0.543	19.8	0.0745
	0.080	18.9	1.039	0.482	19.6	0.0662
	0.070	21.6	0.900	0.422	19.4	0.0580
0.8	0.40	4.25	5.65	2.14	24.0	0.294
	0.30	5.66	3.89	1.61	22.0	0.221
	0.20	8.49	2.36	1.07	20.0	0.147
	0.15	11.3	1.68	0.804	19.0	0.110
	0.10	17.0	1.060	0.536	18.0	0.0736
	0.090	18.9	0.943	0.482	17.8	0.0662
	0.080	21.2	0.829	0.429	17.6	0.0589
	0.070	24.3	0.717	0.375	17.4	0.0515
0.7	0.30	6.47	3.09	1.41	20.0	0.193
	0.20	9.7	1.85	0.938	18.0	0.129
	0.15	12.9	1.31	0.703	17.0	0.097

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

(cont.)

(cont.)

WIDTH	THICKNESS	RESISTANCE AT 20°C	SURFACE AREA PER Ω	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	MM	Ω/M	CM ² /Ω*	G/M	CM ² /M	MM ²
0.7	0.10	19.4	0.824	0.469	16.0	0.0644
	0.090	21.6	0.733	0.422	15.8	0.0580
	0.080	24.3	0.643	0.375	15.6	0.0515
	0.070	27.7	0.555	0.328	15.4	0.0451
	0.060	32.3	0.470	0.281	15.2	0.0386
0.6	0.30	7.55	2.38	1.21	18.0	0.166
	0.30	7.55	2.38	1.21	18.0	0.166
	0.20	11.3	1.41	0.804	16.0	0.110
	0.15	15.1	0.994	0.603	15.0	0.0828
	0.10	22.6	0.618	0.402	14.0	0.0552
	0.090	25.2	0.548	0.362	13.8	0.0497
	0.080	28.3	0.480	0.321	13.6	0.0442
	0.070	32.3	0.414	0.281	13.4	0.0386
	0.060	37.7	0.350	0.241	13.2	0.0331
	0.050	45.3	0.287	0.201	13.0	0.0276
0.5	0.30	9.06	1.77	1.00	16.0	0.138
	0.20	13.6	1.030	0.670	14.0	0.0920
	0.15	18.1	0.718	0.502	13.0	0.0690
	0.10	27.2	0.442	0.335	12.0	0.0460
	0.090	30.2	0.391	0.301	11.8	0.0414
	0.080	34.0	0.342	0.268	11.6	0.0368
	0.070	38.8	0.294	0.234	11.4	0.0322
	0.060	45.3	0.247	0.201	11.2	0.0276
	0.050	54.3	0.202	0.167	11.0	0.0230
0.4	0.20	17.0	0.707	0.536	12.0	0.0736
	0.15	22.6	0.486	0.402	11.0	0.0552
	0.10	34.0	0.294	0.268	10.0	0.0368
	0.090	37.7	0.260	0.241	9.80	0.0331
	0.080	42.5	0.226	0.214	9.60	0.0294
	0.070	48.5	0.194	0.188	9.40	0.0258
	0.060	56.6	0.163	0.161	9.20	0.0221
	0.050	73.4	0.123	0.134	9.00	0.0184
0.3	0.15	30.2	0.298	0.301	9.00	0.0414
	0.10	45.3	0.177	0.201	8.00	0.0276
	0.090	50.3	0.155	0.181	7.80	0.0248
	0.080	56.6	0.134	0.161	7.60	0.0221
	0.070	64.7	0.114	0.141	7.40	0.0193
	0.060	75.5	0.0954	0.121	7.20	0.0166

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

NIKROTHAL® 80, NIKROTHAL TE AND NIKROTHAL 70

WIRE DIMENSIONS AND PROPERTIES

Nikrothal 80: Resistivity 1.09 $\Omega \text{ mm}^2/\text{m}$ (655 Ω/cmf). Density 8.30 g/cm^3 (0.300 lb/in^3).

Nikrothal TE: Resistivity 1.19 $\Omega \text{ mm}^2/\text{m}$ (716 Ω/cmf). Density 8.10 g/cm^3 (0.293 lb/in^3).

Nikrothal 70: Resistivity 1.18 $\Omega \text{ mm}^2/\text{m}$ (709 Ω/cmf). Density 8.10 g/cm^3 (0.293 lb/in^3).

To obtain resistance at working temperature, multiply by the factor C_t in the following table.

°C	20	100	200	300	400	500	600	700	800	900	1000	1100	1200
NIKROTHAL® 80 C_t	1.00	1.01	1.02	1.03	1.04	1.05	1.04	1.04	1.04	1.04	1.05	1.06	1.07
NIKROTHAL TE C_t	1.00	1.02	1.03	1.04	1.05	1.06	1.06	1.06	1.06	1.06	1.07	1.07	1.08
NIKROTHAL 70 C_t	1.00	1.01	1.02	1.03	1.04	1.05	1.05	1.04	1.04	1.04	1.05	1.06	1.06

DIAMETER	RESISTANCE AT 20°C	RESISTIVITY AT 20°C	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	Ω/M	CM^2/Ω^*	G/M	CM^2/M	MM^2
10	0.0139	22637	652	314	78.5
9.5	0.0154	19408	588	298	70.9
9.0	0.0171	16502	528	283	63.6
8.25	0.0204	12711	444	259	53.5
8.0	0.0217	11590	417	251	50.3
7.5	0.0247	9550	367	236	44.2
7.0	0.0283	7764	319	220	38.5
6.5	0.0328	6217	275	204	33.2
6.0	0.0386	4890	235	188	28.3
5.83	0.0408	4486	222	183	26.7
5.5	0.0459	3766	197	173	23.8
5.0	0.0555	2830	163	157	19.6
4.75	0.0615	2426	147	149	17.7
4.5	0.0685	2063	132	141	15.9
4.25	0.0768	1738	118	134	14.2
4.0	0.0867	1449	104	126	12.6
3.75	0.0987	1194	91.7	118	11.0
3.65	0.104	1101	86.8	115	10.5
3.5	0.113	971	79.9	110	9.62
3.25	0.131	777	68.9	102	8.30
3.0	0.154	611	58.7	94.2	7.07
2.8	0.177	497	51.1	88.0	6.16
2.6	0.205	398	44.1	81.7	5.31
2.5	0.222	354	40.7	78.5	4.91
2.3	0.262	275	34.5	72.3	4.15
2.0	0.347	181	26.1	62.8	3.14
1.8	0.428	132	21.1	56.5	2.54
1.6	0.542	92.7	16.7	50.3	2.01
1.5	0.617	76.4	14.7	47.1	1.77
1.4	0.708	62.1	12.8	44.0	1.54

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ [I = Current, C_t = temperature factor, p = surface load W/cm^2]

[cont.]

For different alloys, multiply the figures in the table with:

ALLOY	RESISTANCE AT 20°C, Ω/M	SURFACE AREA PER Ω, CM ² /Ω	WEIGHT, G/M
Nikrothal® TE	1.092	0.916	0.976
Nikrothal 70	1.083	0.924	0.976

(cont.)

DIAMETER MM	RESISTANCE AT 20°C Ω/M	RESISTIVITY AT 20°C CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
1.3	0.821	49.7	11.0	40.8	1.33
1.2	0.964	39.1	9.39	37.7	1.13
1.0	1.39	22.6	6.52	31.4	0.785
0.95	1.54	19.4	5.88	29.8	0.709
0.90	1.71	16.5	5.28	28.3	0.636
0.85	1.92	13.9	4.71	26.7	0.567
0.80	2.17	11.6	4.17	25.1	0.503
0.75	2.47	9.55	3.67	23.6	0.442
0.70	2.83	7.76	3.19	22.0	0.385
0.65	3.28	6.22	2.75	20.4	0.332
0.60	3.86	4.89	2.35	18.8	0.283
0.55	4.59	3.77	1.97	17.3	0.238
0.50	5.55	2.83	1.63	15.7	0.196
0.45	6.85	2.06	1.32	14.1	0.159
0.40	8.67	1.45	1.04	12.6	0.126
0.35	11.3	0.971	0.799	11.0	0.0962
0.32	13.6	0.742	0.668	10.1	0.0804
0.30	15.4	0.611	0.587	9.42	0.0707
0.28	17.7	0.497	0.511	8.80	0.0616
0.25	22.2	0.354	0.407	7.85	0.0491
0.22	28.7	0.241	0.316	6.91	0.0380
0.20	34.7	0.181	0.261	6.28	0.0314
0.19	38.4	0.155	0.235	5.97	0.0284
0.18	42.8	0.132	0.211	5.65	0.0254
0.17	48.0	0.111	0.188	5.34	0.0227
0.16	54.2	0.0927	0.167	5.03	0.0201
0.15	61.7	0.0764	0.147	4.71	0.0177
0.14	70.8	0.0621	0.128	4.40	0.0154
0.13	82.1	0.0497	0.110	4.08	0.0133

* $\text{cm}^2/\Omega = P \cdot C_t / p$ (P = Current, C_t = temperature factor, p = surface load W/cm²)

NIKROTHAL® 60

WIRE DIMENSIONS AND PROPERTIES

Resistivity 1.11 Ω mm²/m (668 Ω /cmf). Density 8.20 g/cm³ (0.296 lb/in³).

To obtain resistivity at working temperature, multiply by factor C_t in following table.

°C	20	100	200	300	400	500	600	700	800	900	1000	1100	1200
C_t	1.00	1.02	1.04	1.05	1.06	1.08	1.09	1.09	1.10	1.10	1.11	1.12	1.13

DIAMETER MM	RESISTANCE AT 20°C Ω /M	RESISTIVITY AT 20°C CM ² /D*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
6.0	0.0393	4801	232	188	28.3
5.5	0.0467	3698	195	173	23.8
5.0	0.0565	2779	161	157	19.6
4.75	0.0626	2382	145	149	17.7
4.5	0.0698	2026	130	141	15.9
4.25	0.0782	1706	116	134	14.2
4.0	0.0883	1423	103	126	12.6
3.75	0.101	1172	90.6	118	11.0
3.5	0.115	953	78.9	110	9.62
3.25	0.134	763	68.0	102	8.30
3.0	0.157	600	58.0	94.2	7.07
2.8	0.180	488	50.5	88.0	6.16
2.6	0.209	391	43.5	81.7	5.31
2.5	0.226	347	40.3	78.5	4.91
2.2	0.292	237	31.2	69.1	3.80
2.0	0.353	178	25.8	62.8	3.14
1.9	0.391	152	23.2	59.7	2.84
1.8	0.436	130	20.9	56.5	2.54
1.7	0.489	109	18.6	53.4	2.27
1.6	0.552	91.0	16.5	50.3	2.01
1.5	0.628	75.0	14.5	47.1	1.77
1.4	0.721	61.0	12.6	44.0	1.54
1.3	0.836	48.8	10.9	40.8	1.33
1.2	0.981	38.4	9.27	37.7	1.13
1.1	1.17	29.6	7.79	34.6	0.950
1.0	1.41	22.2	6.44	31.4	0.785
0.95	1.57	19.1	5.81	29.8	0.709
0.90	1.74	16.2	5.22	28.3	0.636
0.85	1.96	13.7	4.65	26.7	0.567
0.80	2.21	11.4	4.12	25.1	0.503

* $\text{cm}^2/\text{D} = \rho \times C_t / p$ (ρ = Resistivity, C_t = temperature factor, p = surface load W/cm²)

(cont.)

(cont.)

DIAMETER	RESISTANCE AT 20°C	RESISTIVITY AT 20°C	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	Ω/M	CM ² /Ω*	G/M	CM ² /M	MM ²
0.75	2.51	9.38	3.62	23.6	0.442
0.70	2.88	7.62	3.16	22.0	0.385
0.65	3.35	6.10	2.72	20.4	0.332
0.60	3.93	4.80	2.32	18.8	0.283
0.55	4.67	3.70	1.95	17.3	0.238
0.50	5.65	2.78	1.61	15.7	0.196
0.475	6.26	2.38	1.45	14.9	0.177
0.45	6.98	2.03	1.30	14.1	0.159
0.425	7.82	1.71	1.16	13.4	0.142
0.40	8.83	1.42	1.03	12.6	0.126
0.375	10.1	1.17	0.906	11.8	
0.35	11.5	0.953	0.789	11.0	
0.32	13.8	0.728	0.659	10.1	
0.30	15.7	0.600	0.580	9.42	
0.28	18.0	0.488	0.505	8.80	
0.26	20.9	0.391	0.435	8.17	
0.25	22.6	0.347	0.403	7.85	
0.24	24.5	0.307	0.371	7.54	
0.23	26.7	0.270	0.341	7.23	
0.22	29.2	0.237	0.312	6.91	
0.21	32.0	0.206	0.284	6.60	
0.20	35.3	0.178	0.258	6.28	
0.19	39.1	0.152	0.232	5.97	
0.18	43.6	0.130	0.209	5.65	
0.17	48.9	0.109	0.186	5.34	
0.16	55.2	0.0910	0.165	5.03	
0.15	62.8	0.0750	0.145	4.71	
0.14	72.1	0.0610	0.126	4.40	
0.13	83.6	0.0488	0.109	4.08	

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

NIKROTHAL® 40, NIKROTHAL 20

WIRE DIMENSIONS AND PROPERTIES

Nikrothal 40: Resistivity 1.04 $\Omega\text{mm}^2/\text{m}$ (626 Ωcmf). Density 7.90 g/cm^3 (0.285 lb/in^3).

Nikrothal 20: Resistivity 0.95 $\Omega\text{mm}^2/\text{m}$ (572 Ωcmf). Density 7.80 g/cm^3 (0.281 lb/in^3).

To obtain resistance at working temperature, multiply by the factor C_t in the following table.

°C	20	100	200	300	400	500	600	700	800	900	1000	1100
NIKROTHAL® 40 C_t	1.00	1.03	1.06	1.10	1.12	1.15	1.17	1.19	1.21	1.22	1.23	1.24
NIKROTHAL 20 C_t	1.00	1.04	1.10	1.14	1.17	1.21	1.12	1.16	1.28	1.30	1.32	1.34

DIAMETER	RESISTANCE AT 20°C	RESISTIVITY AT 20°C	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	Ω/M	CM^2/Ω^*	G/M	CM^2/M	MM^2
10	0.0139	22637	652	314	78.5
9.5	0.0154	19408	588	298	70.9
9.0	0.0171	16502	528	283	63.6
8.25	0.0204	12711	444	259	53.5
8.0	0.0217	11590	417	251	50.3
7.5	0.0247	9550	367	236	44.2
7.0	0.0283	7764	319	220	38.5
6.5	0.0328	6217	275	204	33.2
6.0	0.0386	4890	235	188	28.3
5.83	0.0408	4486	222	183	26.7
5.5	0.0459	3766	197	173	23.8
5.0	0.0555	2830	163	157	19.6
4.75	0.0615	2426	147	149	17.7
4.5	0.0685	2063	132	141	15.9
4.25	0.0768	1738	118	134	14.2
4.0	0.0867	1449	104	126	12.6
3.75	0.0987	1194	91.7	118	11.0
3.65	0.104	1101	86.8	115	10.5
3.5	0.113	971	79.9	110	9.62
3.25	0.131	777	68.9	102	8.30
3.0	0.154	611	58.7	94.2	7.07
2.8	0.177	497	51.1	88.0	6.16
2.6	0.205	398	44.1	81.7	5.31
2.5	0.222	354	40.7	78.5	4.91
2.3	0.262	275	34.5	72.3	4.15
2.0	0.347	181	26.1	62.8	3.14
1.8	0.428	132	21.1	56.5	2.54
1.6	0.542	92.7	16.7	50.3	2.01
1.5	0.617	76.4	14.7	47.1	1.77
1.4	0.708	62.1	12.8	44.0	1.54

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ [I] = Current, C_t = temperature factor, p = surface load W/cm^2

[cont.]

For different alloys, multiply the figures in the table with:

ALLOY	RESISTANCE AT 20°C, Ω/M	SURFACE AREA PER Ø, CM²/Ø	WEIGHT, G/M
NIKROTHAL® 20	0.913	1.095	0.987

(cont.)

DIAMETER MM	RESISTANCE AT 20°C Ω/M	RESISTIVITY AT 20°C CM²/Ω*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
1.3	0.821	49.7	11.0	40.8	1.33
1.2	0.964	39.1	9.39	37.7	1.13
1.0	1.39	22.6	6.52	31.4	0.785
0.95	1.54	19.4	5.88	29.8	0.709
0.90	1.71	16.5	5.28	28.3	0.636
0.85	1.92	13.9	4.71	26.7	0.567
0.80	2.17	11.6	4.17	25.1	0.503
0.75	2.47	9.55	3.67	23.6	0.442
0.70	2.83	7.76	3.19	22.0	0.385
0.65	3.28	6.22	2.75	20.4	0.332
0.60	3.86	4.89	2.35	18.8	0.283
0.55	4.59	3.77	1.97	17.3	0.238
0.50	5.55	2.83	1.63	15.7	0.196
0.45	6.85	2.06	1.32	14.1	0.159
0.40	8.67	1.45	1.04	12.6	0.126
0.35	11.3	0.971	0.799	11.0	0.0962
0.32	13.6	0.742	0.668	10.1	0.0804
0.30	15.4	0.611	0.587	9.42	0.0707
0.28	17.7	0.497	0.511	8.80	0.0616
0.25	22.2	0.354	0.407	7.85	0.0491
0.22	28.7	0.241	0.316	6.91	0.0380
0.20	34.7	0.181	0.261	6.28	0.0314
0.19	38.4	0.155	0.235	5.97	0.0284
0.18	42.8	0.132	0.211	5.65	0.0254
0.17	48.0	0.111	0.188	5.34	0.0227
0.16	54.2	0.0927	0.167	5.03	0.0201
0.15	61.7	0.0764	0.147	4.71	0.0177
0.14	70.8	0.0621	0.128	4.40	0.0154
0.13	82.1	0.0497	0.110	4.08	0.0133

* $\text{cm}^2/\Omega = P \cdot C_t / p$ (P = Current, C_t = temperature factor, p = surface load W/cm²)

NIKROTHAL® 80, NIKROTHAL 60 AND NIKROTHAL 40

RIBBON DIMENSIONS AND PROPERTIES

Nikrothal 80: Resistivity 1.09 Ω mm²/m (655 Ω /cmf). Density 8.30 g/cm³ (0.300 lb/in³).

Nikrothal 60: Resistivity 1.11 Ω mm²/m (668 Ω /cmf). Density 8.20 g/cm³ (0.296 lb/in³).

Nikrothal 40: Resistivity 1.04 Ω mm²/m (626 Ω /cmf). Density 7.90 g/cm³ (0.285 lb/in³).

To obtain resistance at working temperature, multiply by the factor C_t in the following table.

°C	20	100	200	300	400	500	600	700	800	900	1000	1100	1200
NIKROTHAL® 80 C_t	1.00	1.01	1.02	1.03	1.04	1.05	1.04	1.04	1.04	1.04	1.05	1.06	1.07
NIKROTHAL 60 C_t	1.00	1.02	1.04	1.05	1.06	1.08	1.09	1.09	1.10	1.10	1.11	1.12	1.13
NIKROTHAL 40 C_t	1.00	1.03	1.06	1.10	1.12	1.15	1.17	1.19	1.21	1.22	1.23	1.24	

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω /M	SURFACE AREA PER Ω CM ² / Ω *	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
4	0.50	0.592	152	15.3	90.0	1.84
	0.40	0.740	119	12.2	88.0	1.47
	0.30	0.987	87.1	9.16	86.0	1.10
	0.20	1.48	56.7	6.11	84.0	0.736
	0.15	1.97	42.0	4.58	83.0	0.552
	0.10	2.96	27.7	3.05	82.0	0.368
	1.0	0.395	203	22.9	80.0	2.76
3	0.90	0.439	178	20.6	78.0	2.48
	0.80	0.494	154	18.3	76.0	2.21
	0.70	0.564	131	16.0	74.0	1.93
	0.60	0.658	109	13.7	72.0	1.66
	0.50	0.790	88.6	11.5	70.0	1.38
	0.40	0.987	68.9	9.16	68.0	1.10
	0.30	1.32	50.1	6.87	66.0	0.828
	0.20	1.97	32.4	4.58	64.0	0.552
	0.15	2.63	23.9	3.44	63.0	0.414
	0.10	3.95	15.7	2.29	62.0	0.276
2.5	1.0	0.474	148	19.1	70.0	2.30
	0.90	0.527	129	17.2	68.0	2.07
	0.80	0.592	111	15.3	66.0	1.84
	0.70	0.677	94.5	13.4	64.0	1.61
	0.60	0.790	78.5	11.5	62.0	1.38
	0.50	0.948	63.3	9.55	60.0	1.15
	0.40	1.18	49.0	7.64	58.0	0.920
	0.30	1.58	35.4	5.73	56.0	0.690
	0.20	2.37	22.8	3.82	54.0	0.460
	0.15	3.16	16.8	2.86	53.0	0.345
2.0	0.10	4.74	11.0	1.91	52.0	0.230
	0.80	0.740	75.6	12.2	56.0	1.47
	0.70	0.846	63.8	10.7	54.0	1.29

* $\text{cm}^2/\Omega = P \times C_t / p$ [I = Current, C_t = temperature factor, p = surface load W/cm²]

[cont.]

For different alloys, multiply the figures in the table with:

ALLOY	RESISTANCE AT 20°C, Ω/M	SURFACE AREA PER Ω, CM²/Ω	WEIGHT, G/M
NIKROTHAL® 60	1.018	0.984	0.988
NIKROTHAL 40	0.954	1.048	0.952

(cont.)

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM²/Ω*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
2.0	0.60	0.987	52.7	9.16	52.0	1.10
	0.50	1.18	42.2	7.64	50.0	0.920
	0.40	1.48	32.4	6.11	48.0	0.736
	0.30	1.97	23.3	4.58	46.0	0.552
	0.20	2.96	14.9	3.05	44.0	0.368
	0.15	3.95	10.9	2.29	43.0	0.276
1.8	0.10	5.92	7.09	1.53	42.0	0.184
	0.80	0.823	63.2	11.0	52.0	1.32
	0.70	0.940	53.2	9.62	50.0	1.16
	0.60	1.10	43.8	8.25	48.0	0.994
	0.50	1.32	34.9	6.87	46.0	0.828
	0.40	1.65	26.7	5.50	44.0	0.662
	0.30	2.19	19.1	4.12	42.0	0.497
	0.20	3.29	12.2	2.75	40.0	0.331
	0.15	4.39	8.89	2.06	39.0	0.248
	0.10	6.58	5.77	1.37	38.0	0.166
1.5	0.80	0.987	46.6	9.16	46.0	1.10
	0.70	1.13	39.0	8.02	44.0	0.966
	0.60	1.32	31.9	6.87	42.0	0.828
	0.50	1.58	25.3	5.73	40.0	0.690
	0.40	1.97	19.2	4.58	38.0	0.552
	0.30	2.63	13.7	3.44	36.0	0.414
	0.20	3.95	8.61	2.29	34.0	0.276
	0.15	5.27	6.27	1.72	33.0	0.207
	0.10	7.90	4.05	1.15	32.0	0.138
	0.090	8.78	3.62	1.03	31.8	0.124
1.2	0.080	9.87	3.20	0.916	31.6	0.110
	0.80	1.23	32.4	7.33	40.0	0.883
	0.70	1.41	26.9	6.41	38.0	0.773
	0.60	1.65	21.9	5.50	36.0	0.662

* $\text{cm}^2/\Omega = I^2 \cdot C_t / p$ (I - Current, C_t - temperature factor, p - surface load W/cm²)

(cont.)

NIKROTHAL® 80, NIKROTHAL 60 AND NIKROTHAL 40 RIBBON DIMENSIONS AND PROPERTIES

[cont.]

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM²/Ω*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
1.2	0.50	1.97	17.2	4.58	34.0	0.552
	0.40	2.47	13.0	3.67	32.0	0.442
	0.30	3.29	9.12	2.75	30.0	0.331
	0.20	4.94	5.67	1.83	28.0	0.221
	0.15	6.58	4.10	1.37	27.0	0.166
	0.10	9.87	2.63	0.916	26.0	0.110
	0.090	11.0	2.35	0.825	25.8	0.099
	0.080	12.3	2.07	0.733	25.6	0.088
1.0	0.60	1.97	16.2	4.58	32.0	0.552
	0.50	2.37	12.7	3.82	30.0	0.460
	0.40	2.96	9.45	3.05	28.0	0.368
	0.30	3.95	6.58	2.29	26.0	0.276
	0.20	5.92	4.05	1.53	24.0	0.184
	0.15	7.90	2.91	1.15	23.0	0.138
	0.10	11.8	1.86	0.764	22.0	0.0920
	0.090	13.2	1.66	0.687	21.8	0.0828
	0.080	14.8	1.46	0.611	21.6	0.0736
0.9	0.50	2.63	10.6	3.44	28.0	0.414
	0.40	3.29	7.90	2.75	26.0	0.331
	0.30	4.39	5.47	2.06	24.0	0.248
	0.20	6.58	3.34	1.37	22.0	0.166
	0.15	8.78	2.39	1.03	21.0	0.124
	0.10	13.2	1.52	0.687	20.0	0.0828
	0.090	14.6	1.35	0.619	19.8	0.0745
	0.080	16.5	1.19	0.550	19.6	0.0662
	0.070	18.8	1.03	0.481	19.4	0.0580
0.8	0.40	3.70	6.48	2.44	24.0	0.294
	0.30	4.94	4.46	1.83	22.0	0.221
	0.20	7.40	2.70	1.22	20.0	0.147
	0.15	9.87	1.92	0.916	19.0	0.110
	0.10	14.8	1.22	0.611	18.0	0.0736
	0.090	16.5	1.08	0.550	17.8	0.0662
	0.080	18.5	0.951	0.489	17.6	0.0589
	0.070	21.2	0.822	0.428	17.4	0.0515
	0.10	14.8	1.22	0.611	18.0	0.0736
	0.090	16.5	1.08	0.550	17.8	0.0662
0.7	0.30	5.64	3.54	1.60	20.0	0.193
	0.20	8.46	2.13	1.07	18.0	0.129

* $\text{cm}^2/\Omega = P \cdot C_p / p$ (I) - Current, C_p - temperature factor, p - surface load W/cm^2)

[cont.]

(cont.)

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
0.7	0.15	11.3	1.51	0.802	17.0	0.097
	0.10	16.9	0.945	0.535	16.0	0.0644
	0.090	18.8	0.840	0.481	15.8	0.0580
	0.080	21.2	0.737	0.428	15.6	0.0515
	0.070	24.2	0.637	0.374	15.4	0.0451
	0.060	28.2	0.539	0.321	15.2	0.0386
0.6	0.30	6.58	2.73	1.37	18.0	0.166
	0.20	9.87	1.62	0.916	16.0	0.110
	0.15	13.2	1.14	0.687	15.0	0.0828
	0.10	19.7	0.709	0.458	14.0	0.0552
	0.090	21.9	0.629	0.412	13.8	0.0497
	0.080	24.7	0.551	0.367	13.6	0.0442
	0.070	28.2	0.475	0.321	13.4	0.0386
	0.060	32.9	0.401	0.275	13.2	0.0331
	0.050	39.5	0.329	0.229	13.0	0.0276
0.5	0.30	7.90	2.03	1.15	16.0	0.138
	0.20	11.8	1.18	0.764	14.0	0.0920
	0.15	15.8	0.823	0.573	13.0	0.0690
	0.10	23.7	0.506	0.382	12.0	0.0460
	0.090	26.3	0.448	0.344	11.8	0.0414
	0.080	29.6	0.392	0.305	11.6	0.0368
	0.070	33.9	0.337	0.267	11.4	0.0322
	0.060	39.5	0.284	0.229	11.2	0.0276
	0.050	47.4	0.232	0.191	11.0	0.0230
0.4	0.20	14.8	0.810	0.611	12.0	0.0736
	0.15	19.7	0.557	0.458	11.0	0.0552
	0.10	29.6	0.338	0.305	10.0	0.0368
	0.090	32.9	0.298	0.275	9.80	0.0331
	0.080	37.0	0.259	0.244	9.60	0.0294
	0.070	42.3	0.222	0.214	9.40	0.0258
	0.060	49.4	0.186	0.183	9.20	0.0221
	0.050	59.2	0.152	0.153	9.00	0.0184
0.3	0.15	26.3	0.342	0.344	9.00	0.0414
	0.10	39.5	0.203	0.229	8.00	0.0276
	0.090	43.9	0.178	0.206	7.80	0.0248
	0.080	49.4	0.154	0.183	7.60	0.0221
	0.070	56.4	0.131	0.160	7.40	0.0193
	0.060	65.8	0.109	0.137	7.20	0.0166

* cm²/Ω = P × C_t / p (I - Current, C_t - temperature factor, p - surface load W/cm²)

NIFETHAL® 70

WIRE DIMENSIONS AND PROPERTIES

Resistivity 0.20 $\Omega\text{mm}^2/\text{m}$ (120 Ω/cmf). Density 8.45 g/cm^3 (0.305 lb/in^3).

To obtain resistivity at working temperature, multiply by factor C_t in following table.

°C	20	100	150	200	250	300	350	400	450	500
C_t	1.00	1.42	1.68	1.91	2.19	2.47	2.75	3.03	3.34	3.66

DIAMETER MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM^2/Ω^*	WEIGHT G/M	SURFACE AREA CM^2/M	CROSS SECTIONAL AREA MM^2
1.8	0.0786	719	21.5	56.5	2.54
1.7	0.0881	606	19.2	53.4	2.27
1.6	0.0995	505	17.0	50.3	2.01
1.5	0.113	416	14.9	47.1	1.77
1.4	0.130	339	13.0	44.0	1.54
1.3	0.151	271	11.2	40.8	1.33
1.2	0.177	213	9.56	37.7	1.13
1.1	0.210	164	8.03	34.6	0.950
1.0	0.255	123	6.64	31.4	0.785
0.95	0.282	106	5.99	29.8	0.709
0.90	0.314	89.9	5.38	28.3	0.636
0.85	0.352	75.8	4.79	26.7	0.567
0.80	0.398	63.2	4.25	25.1	0.503
0.75	0.453	52.0	3.73	23.6	0.442
0.70	0.520	42.3	3.25	22.0	0.385
0.65	0.603	33.9	2.80	20.4	0.332
0.60	0.707	26.6	2.39	18.8	0.283
0.55	0.842	20.5	2.01	17.3	0.238
0.50	1.02	15.4	1.66	15.7	0.196
0.475	1.13	13.2	1.50	14.9	0.177
0.45	1.26	11.2	1.34	14.1	0.159
0.425	1.41	9.47	1.20	13.4	0.142
0.40	1.59	7.90	1.06	12.6	0.126
0.375	1.81	6.51	0.933	11.8	0.110

* $\text{cm}^2/\Omega - I^2 = C_t / p$ | I = Current, C_t = temperature factor, p = surface load W/cm^2

[cont.]

(cont.)

DIAMETER MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
0.35	2.08	5.29	0.813	11.0	0.0962
0.32	2.49	4.04	0.680	10.1	0.0804
0.30	2.83	3.33	0.597	9.42	0.0707
0.28	3.25	2.71	0.520	8.80	0.0616
0.26	3.77	2.17	0.449	8.17	0.0531
0.25	4.07	1.93	0.415	7.85	0.0491
0.24	4.42	1.71	0.382	7.54	0.0452
0.23	4.81	1.50	0.351	7.23	0.0415
0.22	5.26	1.31	0.321	6.91	0.0380
0.21	5.77	1.14	0.293	6.60	0.0346
0.20	6.37	0.987	0.265	6.28	0.0314
0.19	7.05	0.846	0.240	5.97	0.0284
0.18	7.86	0.719	0.215	5.65	0.0254
0.17	8.81	0.606	0.192	5.34	0.0227
0.16	9.95	0.505	0.170	5.03	0.0201
0.15	11.3	0.416	0.149	4.71	0.0177
0.14	13.0	0.339	0.130	4.40	0.0154
0.13	15.1	0.271	0.112	4.08	0.0133
0.12	17.7	0.213	0.0956	3.77	0.0113
0.11	21.0	0.164	0.0803	3.46	0.00950
0.10	25.5	0.123	0.0664	3.14	0.00785

* $\text{cm}^2/\Omega = I^2 \cdot C_t / p$ [I – Current, C_t – temperature factor, p – surface load W/cm²]

NIFETHAL® 52

WIRE DIMENSIONS AND PROPERTIES

Resistivity 0.43 Ω mm²/m (220 Ω /cmf). Density 8.20 g/cm³ (0.296 lb/in³).

To obtain resistivity at working temperature, multiply by factor C_t in following table.

°C	20	100	150	200	250	300	350	400	450	500
C_t	1.00	1.33	1.53	1.73	1.93	2.13	2.32	2.49	2.64	2.77

DIAMETER MM	RESISTANCE AT 20°C Ω /M	SURFACE AREA PER Ω CM ² / Ω *	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
1.8	0.169	335	20.9	56.5	2.54
1.7	0.189	282	18.6	53.4	2.27
1.6	0.214	235	16.5	50.3	2.01
1.5	0.243	194	14.5	47.1	1.77
1.4	0.279	157	12.6	44.0	1.54
1.3	0.324	126	10.9	40.8	1.33
1.2	0.380	99.2	9.27	37.7	1.13
1.1	0.452	76.4	7.79	34.6	0.950
1.0	0.547	57.4	6.44	31.4	0.785
0.95	0.607	49.2	5.81	29.8	0.709
0.90	0.676	41.8	5.22	28.3	0.636
0.85	0.758	35.2	4.65	26.7	0.567
0.80	0.855	29.4	4.12	25.1	0.503
0.75	0.973	24.2	3.62	23.6	0.442
0.70	1.12	19.7	3.16	22.0	0.385
0.65	1.30	15.8	2.72	20.4	0.332
0.60	1.52	12.4	2.32	18.8	0.283
0.55	1.81	9.55	1.95	17.3	0.238
0.50	2.19	7.17	1.61	15.7	0.196
0.475	2.43	6.15	1.45	14.9	0.177
0.45	2.70	5.23	1.30	14.1	0.159
0.425	3.03	4.40	1.16	13.4	0.142
0.40	3.42	3.67	1.030	12.6	0.126
0.375	3.89	3.03	0.906	11.8	0.110

* $\text{cm}^2/\Omega = I^2 \times C_t / p$ [I = Current, C_t = temperature factor, p = surface load W/cm²]

[cont.]

(cont.)

DIAMETER MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM ² /Ω*	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
0.35	4.47	2.46	0.789	11.0	0.0962
0.32	5.35	1.88	0.659	10.1	0.0804
0.30	6.08	1.55	0.580	9.42	0.0707
0.28	6.98	1.26	0.505	8.80	0.0616
0.26	8.10	1.01	0.435	8.17	0.0531
0.25	8.76	0.897	0.403	7.85	0.0491
0.24	9.51	0.793	0.371	7.54	0.0452
0.23	10.3	0.698	0.341	7.23	0.0415
0.22	11.3	0.611	0.312	6.91	0.0380
0.21	12.4	0.531	0.284	6.60	0.0346
0.20	13.7	0.459	0.258	6.28	0.0314
0.19	15.2	0.394	0.232	5.97	0.0284
0.18	16.9	0.335	0.209	5.65	0.0254
0.17	18.9	0.282	0.186	5.34	0.0227
0.16	21.4	0.235	0.165	5.03	0.0201
0.15	24.3	0.194	0.145	4.71	0.0177
0.14	27.9	0.157	0.126	4.40	0.0154
0.13	32.4	0.126	0.1088	4.08	0.0133
0.12	38.0	0.0992	0.0927	3.77	0.0113
0.11	45.2	0.0764	0.0779	3.46	0.00950
0.10	54.7	0.0574	0.0644	3.14	0.00785

* $\text{cm}^2/\Omega = P \times C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

CUPROTHAL®

WIRE DIMENSIONS AND PROPERTIES

Cuprothal 49:	Resistivity 0.49 $\Omega\text{mm}^2/\text{m}$ (295 Ω/cmf).	Density 8.90 g/cm^3 (0.321 lb/in^3).
Cuprothal 30:	Resistivity 0.30 $\Omega\text{mm}^2/\text{m}$ (180 Ω/cmf).	Density 8.90 g/cm^3 (0.321 lb/in^3).
Cuprothal 15:	Resistivity 0.15 $\Omega\text{mm}^2/\text{m}$ (90 Ω/cmf).	Density 8.90 g/cm^3 (0.321 lb/in^3).
Cuprothal 10:	Resistivity 0.10 $\Omega\text{mm}^2/\text{m}$ (60 Ω/cmf).	Density 8.90 g/cm^3 (0.321 lb/in^3).
Cuprothal 05:	Resistivity 0.05 $\Omega\text{mm}^2/\text{m}$ (30 Ω/cmf).	Density 8.90 g/cm^3 (0.321 lb/in^3).

To obtain resistance at working temperature, multiply by the factor C_t in the following table.

°C	20	100	200	300	400	500	600
CUPROTHAL® 49 C_t	1.000	1.002	1.002	1.001	1.005	1.017	1.037
CUPROTHAL 30 C_t	1.000	1.020	1.030	1.040	1.060	–	–
CUPROTHAL 15 C_t	1.000	1.035	1.070	1.110	1.150	–	–
CUPROTHAL 10 C_t	1.000	1.060	1.110	1.190	–	–	–
CUPROTHAL 05 C_t	1.000	1.110	1.250	1.400	–	–	–

DIAMETER	RESISTANCE AT 20°C	SURFACE AREA PER Ω	WEIGHT	SURFACE AREA	CROSS SECTIONAL AREA
MM	Ω/M	CM^2/Ω^*	G/M	CM^2/M	MM^2
10	0.0062	50355	699	314	78.5
9.5	0.0069	43173	631	298	70.9
9.0	0.0077	36709	566	283	63.6
8.25	0.0092	28275	476	259	53.5
8.0	0.0097	25782	447	251	50.3
7.5	0.0111	21244	393	236	44.2
7.35	0.0115	19994	378	231	42.4
7.0	0.0127	17272	343	220	38.5
6.5	0.0148	13829	295	204	33.2
6.0	0.0173	10877	252	188	28.3
5.5	0.0206	8378	211	173	23.8
5.0	0.0250	6294	175	157	19.6
4.75	0.0277	5397	158	149	17.7
4.5	0.0308	4589	142	141	15.9
4.25	0.0345	3866	126	134	14.2
4.0	0.0390	3223	112	126	12.6
3.75	0.0444	2655	98.3	118	11.0
3.5	0.0509	2159	85.6	110	9.62
3.25	0.0591	1729	73.8	102	8.30
3.0	0.0693	1360	62.9	94.2	7.07
2.8	0.0796	1105	54.8	88.0	6.16
2.6	0.0923	885	47.3	81.7	5.31
2.5	0.100	787	43.7	78.5	4.91
2.2	0.129	536	33.8	69.1	3.80
2.0	0.156	403	28.0	62.8	3.14
1.9	0.173	345	25.2	59.7	2.84
1.8	0.193	294	22.6	56.5	2.54
1.7	0.216	247	20.2	53.4	2.27
1.6	0.244	206	17.9	50.3	2.01
1.5	0.277	170	15.7	47.1	1.77

* $\text{cm}^2/\Omega = \frac{P}{C_t \cdot I^2 \cdot \rho}$ - Current, C_t - temperature factor, ρ - surface load W/cm^2

[cont.]

For different alloys, multiply the figures in the table with:

(cont.)

ALLOY	RESISTANCE AT 20°C, Ω/M	SURFACE AREA PER Ω, CM²/Ω	WEIGHT, G/M
CUPROTHAL® 49	1.0	1.0	1.0
CUPROTHAL 30	0.612	1.63	1.0
CUPROTHAL 15	0.306	3.29	1.0
CUPROTHAL 10	0.204	4.93	1.0
CUPROTHAL 05	0.102	9.86	1.0

DIAMETER MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM²/Ω*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
1.4	0.318	138	13.7	44.0	1.54
1.3	0.369	111	11.8	40.8	1.33
1.2	0.433	87.0	10.1	37.7	1.13
1.1	0.516	67.0	8.46	34.6	0.950
1.0	0.624	50.4	6.99	31.4	0.785
0.95	0.691	43.2	6.31	29.8	0.709
0.90	0.770	36.7	5.66	28.3	0.636
0.85	0.864	30.9	5.05	26.7	0.567
0.80	0.975	25.8	4.47	25.1	0.503
0.75	1.11	21.2	3.93	23.6	0.442
0.70	1.27	17.3	3.43	22.0	0.385
0.65	1.48	13.8	2.95	20.4	0.332
0.60	1.73	10.9	2.52	18.8	0.283
0.55	2.06	8.38	2.11	17.3	0.238
0.50	2.50	6.29	1.75	15.7	0.196
0.475	2.77	5.40	1.58	14.9	0.177
0.45	3.08	4.59	1.42	14.1	0.159
0.425	3.45	3.87	1.26	13.4	0.142
0.40	3.90	3.22	1.12	12.6	0.126
0.375	4.44	2.66	0.983	11.8	
0.35	5.09	2.16	0.856	11.0	
0.32	6.09	1.65	0.716	10.1	
0.30	6.93	1.36	0.629	9.42	
0.28	7.96	1.11	0.548	8.80	
0.26	9.23	0.885	0.473	8.17	
0.25	10.0	0.787	0.437	7.85	
0.24	10.8	0.696	0.403	7.54	
0.23	11.8	0.613	0.370	7.23	
0.22	12.9	0.536	0.338	6.91	
0.21	14.1	0.466	0.308	6.60	
0.20	15.6	0.403	0.280	6.28	
0.19	17.3	0.345	0.252	5.97	
0.18	19.3	0.294	0.226	5.65	
0.17	21.6	0.247	0.202	5.34	
0.16	24.4	0.2063	0.179	5.03	
0.15	27.7	0.1699	0.157	4.71	
0.14	31.8	0.1382	0.137	4.40	
0.13	36.9	0.1106	0.118	4.08	

* $\text{cm}^2/\Omega = P \times C_t / p$ [I] = Current, C_t = temperature factor, p = surface load W/cm^2

CUPROTHAL® 49

RIBBON DIMENSIONS AND PROPERTIES

Resistivity 0.49 Ω mm²/m (295 Ω /cmf). Density 8.90 g/cm³ (0.321 lb/in³).

To obtain resistance at working temperature, multiply by the factor C_t in the following table.

°C	20	100	200	300	400	500	600
C_t	1.000	1.002	1.002	1.001	1.005	1.017	1.037

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω /M	SURFACE AREA PER Ω CM ² / Ω *	WEIGHT G/M	SURFACE AREA CM ² /M	CROSS SECTIONAL AREA MM ²
4	0.50	0.266	338	16.4	90.0	1.84
	0.40	0.333	264	13.1	88.0	1.47
	0.30	0.444	193.8	9.83	86.0	1.10
	0.20	0.666	126.2	6.55	84.0	0.736
	0.15	0.888	93.5	4.91	83.0	0.552
	0.10	1.33	61.6	3.28	82.0	0.368
3	1.0	0.178	451	24.6	80.0	2.76
	0.90	0.197	395	22.1	78.0	2.48
	0.80	0.222	342	19.7	76.0	2.21
	0.70	0.254	292	17.2	74.0	1.93
	0.60	0.296	243	14.7	72.0	1.66
	0.50	0.355	197	12.3	70.0	1.38
	0.40	0.444	153	9.83	68.0	1.10
	0.30	0.592	112	7.37	66.0	0.828
	0.20	0.888	72.1	4.91	64.0	0.552
	0.15	1.18	53.2	3.68	63.0	0.414
2.5	0.10	1.78	34.9	2.46	62.0	0.276
	1.0	0.213	329	20.5	70.0	2.30
	0.90	0.237	287	18.4	68.0	2.07
	0.80	0.266	248	16.4	66.0	1.84
	0.70	0.304	210	14.3	64.0	1.61
	0.60	0.355	175	12.3	62.0	1.38
	0.50	0.426	141	10.2	60.0	1.15
	0.40	0.533	109	8.19	58.0	0.920
	0.30	0.710	78.9	6.14	56.0	0.690
	0.20	1.07	50.7	4.09	54.0	0.460
	0.15	1.42	37.3	3.07	53.0	0.345
	0.10	2.13	24.4	2.05	52.0	0.230
2.0	0.80	0.333	168	13.1	56.0	1.47
	0.70	0.380	142	11.5	54.0	1.29
	0.60	0.444	117	9.83	52.0	1.10
	0.50	0.533	93.9	8.19	50.0	0.920

* $\text{cm}^2/\Omega = P \cdot C_t / p$ (P = Current, C_t = temperature factor, p = surface load W/cm²)

(cont.)

[cont.]

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM²/Ω*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
2.0	0.40	0.666	72.1	6.55	48.0	0.736
	0.30	0.888	51.8	4.91	46.0	0.552
	0.20	1.33	33.0	3.28	44.0	0.368
	0.15	1.78	24.2	2.46	43.0	0.276
	0.10	2.66	15.77	1.64	42.0	0.184
1.8	0.80	0.370	141	11.8	52.0	1.32
	0.70	0.423	118	10.3	50.0	1.16
	0.60	0.493	97.3	8.84	48.0	0.994
	0.50	0.592	77.7	7.37	46.0	0.828
	0.40	0.740	59.5	5.90	44.0	0.662
	0.30	0.986	42.6	4.42	42.0	0.497
	0.20	1.48	27.0	2.95	40.0	0.331
	0.15	1.97	19.77	2.21	39.0	0.248
	0.10	2.96	12.84	1.47	38.0	0.166
1.5	0.80	0.444	104	9.83	46.0	1.10
	0.70	0.507	86.7	8.60	44.0	0.966
	0.60	0.592	71.0	7.37	42.0	0.828
	0.50	0.710	56.3	6.14	40.0	0.690
	0.40	0.888	42.8	4.91	38.0	0.552
	0.30	1.18	30.4	3.68	36.0	0.414
	0.20	1.78	19.2	2.46	34.0	0.276
	0.15	2.37	13.9	1.84	33.0	0.207
	0.10	3.55	9.01	1.23	32.0	0.138
	0.090	3.95	8.06	1.11	31.8	0.124
	0.080	4.44	7.12	0.983	31.6	0.110
1.2	0.80	0.555	72.1	7.86	40.0	0.883
	0.70	0.634	59.9	6.88	38.0	0.773
	0.60	0.740	48.7	5.90	36.0	0.662
	0.50	0.888	38.3	4.91	34.0	0.552
	0.40	1.11	28.8	3.93	32.0	0.442
	0.30	1.48	20.3	2.95	30.0	0.331
	0.20	2.22	12.6	1.97	28.0	0.221

* $\text{cm}^2/\Omega = P = C_t / p$ (I = Current, C_t = temperature factor, p = surface load W/cm²)

[cont.]

CUPROTHAL® 49 RIBBON DIMENSIONS AND PROPERTIES

(cont.)

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM²/Ω*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
1.2	0.15	2.96	9.12	1.47	27.0	0.166
	0.10	4.44	5.86	0.983	26.0	0.110
	0.090	4.93	5.23	0.884	25.8	0.099
	0.080	5.55	4.61	0.786	25.6	0.088
1.0	0.60	0.89	36.0	4.91	32.0	0.552
	0.50	1.1	28.2	4.09	30.0	0.460
	0.40	1.3	21.0	3.28	28.0	0.368
	0.30	1.8	14.6	2.46	26.0	0.276
	0.20	2.7	9.01	1.64	24.0	0.184
	0.15	3.6	6.48	1.23	23.0	0.138
	0.10	5.3	4.13	0.819	22.0	0.0920
	0.090	5.9	3.68	0.737	21.8	0.0828
	0.080	6.7	3.24	0.655	21.6	0.0736
0.9	0.50	1.2	23.7	3.68	28.0	0.414
	0.40	1.5	17.6	2.95	26.0	0.331
	0.30	2.0	12.2	2.21	24.0	0.248
	0.20	3.0	7.44	1.47	22.0	0.166
	0.15	3.9	5.32	1.11	21.0	0.124
	0.10	5.9	3.38	0.737	20.0	0.0828
	0.090	6.6	3.01	0.663	19.8	0.0745
	0.080	7.4	2.65	0.590	19.6	0.0662
	0.070	8.5	2.29	0.516	19.4	0.0580
0.8	0.40	1.66	14.42	2.62	24.0	0.294
	0.30	2.22	9.91	1.97	22.0	0.221
	0.20	3.33	6.01	1.31	20.0	0.147
	0.15	4.44	4.28	0.983	19.0	0.110
	0.10	6.66	2.70	0.655	18.0	0.0736
	0.090	7.40	2.41	0.590	17.8	0.0662
	0.080	8.32	2.11	0.524	17.6	0.0589
	0.070	9.51	1.83	0.459	17.4	0.0515
0.7	0.30	2.54	7.89	1.72	20.0	0.193
	0.20	3.80	4.73	1.15	18.0	0.129
	0.15	5.07	3.35	0.860	17.0	0.0966
	0.10	7.61	2.10	0.573	16.0	0.0644
	0.090	8.45	1.87	0.516	15.8	0.0580
	0.080	9.51	1.64	0.459	15.6	0.0515

* $\text{cm}^2/\Omega = I^2 \cdot R / p$ - Current, R - temperature factor, p - surface load W/cm^2

(cont.)

(cont.)

WIDTH MM	THICKNESS MM	RESISTANCE AT 20°C Ω/M	SURFACE AREA PER Ω CM²/Ω*	WEIGHT G/M	SURFACE AREA CM²/M	CROSS SECTIONAL AREA MM²
0.7	0.070	10.9	1.42	0.401	15.4	0.0451
	0.060	12.7	1.20	0.344	15.2	0.0386
0.6	0.30	2.96	6.08	1.47	18.0	0.166
	0.20	4.44	3.60	0.983	16.0	0.110
	0.15	5.92	2.53	0.737	15.0	0.0828
	0.10	8.88	1.58	0.491	14.0	0.0552
	0.090	9.86	1.40	0.442	13.8	0.0497
	0.080	11.1	1.23	0.393	13.6	0.0442
	0.070	12.7	1.06	0.344	13.4	0.0386
	0.060	14.8	0.892	0.295	13.2	0.0331
	0.050	17.8	0.732	0.246	13.0	0.0276
0.5	0.30	3.55	4.51	1.23	16.0	0.138
	0.20	5.33	2.63	0.819	14.0	0.0920
	0.15	7.10	1.83	0.614	13.0	0.0690
	0.10	10.7	1.13	0.409	12.0	0.0460
	0.090	11.8	0.997	0.368	11.8	0.0414
	0.080	13.3	0.871	0.328	11.6	0.0368
	0.070	15.2	0.749	0.287	11.4	0.0322
	0.060	17.8	0.631	0.246	11.2	0.0276
	0.050	21.3	0.516	0.205	11.0	0.0230
0.4	0.20	6.66	1.80	0.655	12.0	0.0736
	0.15	8.88	1.24	0.491	11.0	0.0552
	0.10	13.3	0.751	0.328	10.0	0.0368
	0.090	14.8	0.662	0.295	9.80	0.0331
	0.080	16.6	0.577	0.262	9.60	0.0294
	0.070	19.0	0.494	0.229	9.40	0.0258
	0.060	22.2	0.415	0.197	9.20	0.0221
	0.050	26.6	0.338	0.164	9.00	0.0184
0.3	0.15	11.8	0.760	0.368	9.00	0.0414
	0.10	17.8	0.451	0.246	8.00	0.0276
	0.090	19.7	0.395	0.221	7.80	0.0248
	0.080	22.2	0.342	0.197	7.60	0.0221
	0.070	25.4	0.292	0.172	7.40	0.0193
	0.060	29.6	0.243	0.147	7.20	0.0166

* $\text{cm}^2/\Omega - P = C_t / p$ (I) - Current, C_t - temperature factor, p - surface load W/cm^2

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