KANTHAL A, AF

Wire mm

A:12.0–0.05 mm ∅
AF:12.0–0.10 mm ∅
Resistivity Ω mm² m⁻¹ 1.39
Density, g cm⁻³ 7.15

$$cm^2/\Omega = \frac{I^2 C_t}{p}$$

I = Current
C_t = Temperature factor
p = Surface load W/cm²

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	1300	1400*
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	1.07

* only AF.

Diameter mm	Resistance Ω/m 20°C	cm²/Ω 20°C	Weight g/m	Surface area cm²/m	Cross sectional area mm²	Diameter mm
12.0	0.0123	30700	809	377	113	12.0
10.0	0.0177	17800	562	314	78.5	10.0
9.5	0.0196	15200	507	298	70.9	9.5
8.0	0.0277	9090	359	251	50.3	8.0
7.5	0.0315	7490	316	236	44.2	7.5
7.0	0.0361	6090	275	220	38.5	7.0
6.5	0.0419	4870	237	204	33.2	6.5
6.0	0.0492	3830	202	188	28.3	6.0
5.5	0.0585	2950	170	173	23.8	5.5
5.0	0.0708	2220	140	157	19.6	5.0
4.75	0.0784	1900	127	149	17.7	4.75
4.5	0.0874	1620	114	141	15.9	4.5
4.25	0.0980	1360	101	134	14.2	4.25
4.0	0.111	1140	89.8	126	12.6	4.0
3.75	0.126	936	79.0	118	11.0	3.75
3.5	0.144	761	68.8	110	9.62	3.5
3.25	0.168	609	59.3	102	8.30	3.25
3.0	0.197	479	50.5	94.2	7.07	3.0
2.8	0.226	390	44.0	88.0	6.16	2.8
2.5	0.283	277	35.1	78.5	4.91	2.5
2.25	0.350	202	28.4	70.7	3.98	2.25
2.0	0.442	142	22.5	62.8	3.14	2.0
1.9	0.490	122	20.3	59.7	2.84	1.9
1.8	0.546	104	18.2	56.5	2.54	1.8
1.7	0.612	87.2	16.2	53.4	2.27	1.7
1.6	0.691	72.7	14.4	50.3	2.01	1.6
1.5	0.787	59.9	12.6	47.1	1.77	1.5
1.4	0.903	48.7	11.0	44.0	1.54	1.4
1.3	1.05	39.0	9.49	40.8	1.33	1.3
1.2	1.23	30.7	8.09	37.7	1.13	1.2
1.1	1.46	23.6	6.79	34.6	0.950	1.1
1.0	1.77	17.8	5.62	31.4	0.785	1.0
0.95	1.96	15.2	5.07	29.8	0.709	0.95
0.9	2.18	12.9	4.55	28.3	0.636	0.9
0.85	2.45	10.9	4.06	26.7	0.567	0.85
0.8	2.77	9.09	3.59	25.1	0.503	0.8
0.75	3.15	7.49	3.16	23.6	0.442	0.75
0.7	3.61	6.09	2.75	22.0	0.385	0.7
0.65	4.19	4.87	2.37	20.4	0.332	0.65
0.6	4.92	3.83	2.02	18.8	0.283	0.6
0.55	5.85	2.95	1.70	17.3	0.238	0.55
0.5	7.08	2.22	1.40	15.7	0.196	0.5
0.475	7.84	1.90	1.27	14.9	0.177	0.475
0.45	8.74	1.62	1.14	14.1	0.159	0.45
0.425	9.80	1.36	1.01	13.4	0.142	0.425
0.4	11.1	1.14	0.898	12.6	0.126	0.4

Diameter mm	Resistance Ω/m 20°C	cm^2/Ω 20°C	Weight g/m	Surface area cm^2/m	Cross sectional area mm^2	Diameter mm
0.375	12.6	0.936	0.790	11.8	0.110	0.375
0.35	14.4	0.761	0.688	11.0	0.0962	0.35
0.32	17.3	0.582	0.575	10.1	0.0804	0.32
0.3	19.7	0.479	0.505	9.42	0.0707	0.3
0.28	22.6	0.390	0.440	8.80	0.0616	0.28
0.26	26.2	0.312	0.380	8.17	0.0531	0.26
0.25	28.3	0.277	0.351	7.85	0.0491	0.25
0.24	30.7	0.245	0.323	7.54	0.0452	0.24
0.23	33.5	0.216	0.297	7.23	0.0415	0.23
0.22	36.6	0.189	0.272	6.91	0.0380	0.22
0.21	40.1	0.164	0.248	6.60	0.0346	0.21
0.20	44.2	0.142	0.225	6.28	0.0314	0.20
0.19	49.0	0.122	0.203	5.97	0.0284	0.19
0.18	54.6	0.104	0.182	5.65	0.0254	0.18
0.17	61.2	0.0872	0.162	5.34	0.0227	0.17
0.16	69.1	0.0727	0.144	5.03	0.0201	0.16
0.15	78.7	0.0599	0.126	4.71	0.0177	0.15
0.14	90.3	0.0487	0.110	4.40	0.0154	0.14
0.13	105	0.0390	0.0949	4.08	0.0133	0.13
0.12	123	0.0307	0.0809	3.77	0.0113	0.12
0.11	146	0.0236	0.0679	3.46	0.00950	0.11
0.10**	**177**	**0.0178**	**0.0562**	**3.14**	**0.00785**	**0.10**
0.09	218	0.0129	0.0455	2.83	0.00636	0.09
0.08	277	0.00909	0.0359	2.51	0.00503	0.08
0.07	361	0.00609	0.0275	2.20	0.00385	0.07
0.06	492	0.00383	0.0202	1.88	0.00283	0.06
0.05	708	0.00222	0.0140	1.57	0.00196	0.05

This table is only meant for element calculations. Regarding standard stock items, please contact your local Kanthal subsidiary/representative or Kanthal Electroheat, Sweden.