

Electrical Resistance

The limits of electrical resistance are derived from the calculations made in IEC standard 317-0-1 Annex C.1 "Method for the calculation of linear resistance" for copper wire and are restricted by a factor of 2.

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0098	58	276.8	291.4	305.9
0.0101		260.6	274.3	288.0
0.0109	57	223.8	235.5	247.3
0.0113		208.2	219.2	230.1
0.0120		184.6	194.3	204.0
0.0125	56	170.1	179.1	188.0
0.0130	55.5	157.3	165.6	173.9
0.0135	55	145.9	153.5	161.2
0.0140		135.6	142.8	149.9
0.0145	54.5	126.4	133.1	139.8
0.0155	54	110.7	116.5	122.3
0.0160		103.8	109.3	114.8
0.0165	53.5	97.65	102.8	107.9
0.0170		91.99	96.83	101.7
0.0175	53	86.81	91.37	95.94
0.0180		82.05	86.37	90.69
0.0185	52.5	77.67	81.76	85.85
0.0190		73.64	77.52	81.39
0.0195	52	69.91	73.59	77.27
0.0200		66.46	69.96	73.46
0.0210	51.5	60.28	63.45	66.63
0.0215		57.51	60.54	63.56
0.0220	51	54.93	57.82	60.71
0.0230	50.5	50.25	52.90	55.54
0.0240		46.15	48.58	51.01
0.0245	50	44.29	46.62	48.95
0.0250		42.53	44.77	47.01
0.0260	49.5	39.33	41.40	43.47
0.0270		36.47	38.39	40.31
0.0275	49	35.15	37.00	38.85
0.0280		33.91	35.69	37.48
0.0290	48.5	31.61	33.27	34.94
0.0300		29.54	31.09	32.65
0.0310	48	27.66	29.12	30.57
0.0320		25.96	27.33	28.69
0.0330	47.5	24.45	25.70	26.94
0.0340		23.03	24.21	25.38
0.0350	47	21.74	22.84	23.95
0.0360		20.54	21.59	22.64
0.0370	46.5	19.45	20.44	21.43
0.0380		18.44	19.38	20.32
0.0381	46.1	18.34	19.28	20.21
0.0390	46.0	17.51	18.40	19.29
0.0400		16.64	17.49	18.34
0.0410	45.5	15.84	16.65	17.45
0.0420		15.09	15.86	16.63

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0430		14.40	15.13	15.87
0.0437		13.94	14.65	15.36
0.0440	45	13.75	14.45	15.16
0.0450		13.15	13.82	14.49
0.0460		12.58	13.22	13.87
0.0470	44.5	12.10	12.67	13.24
0.0480		11.60	12.15	12.69
0.0490		11.13	11.65	12.18
0.0500	44	10.69	11.19	11.70
0.0520	43.5	9.883	10.35	10.81
0.0530		9.514	9.962	10.41
0.0550	43	8.834	9.251	9.667
0.0560		8.522	8.923	9.325
0.0580		7.944	8.318	8.693
0.0600	42.5	7.462	7.773	8.084
0.0620		6.989	7.280	7.571
0.0630	42	6.768	7.050	7.332
0.0650	41.5	6.312	6.623	6.983
0.0670		5.948	6.234	6.562
0.0680		5.778	6.052	6.366
0.0700	41	5.459	5.711	5.999
0.0710		5.309	5.551	5.827
0.0740		4.895	5.110	5.354
0.0750	40.5	4.767	4.975	5.209
0.0780	40	4.414	4.599	4.808
0.0800		4.200	4.372	4.566
0.0830	39.5	3.907	4.062	4.236
0.0850		3.728	3.873	4.035
0.0880	39	3.482	3.614	3.760
0.0900		3.331	3.455	3.592
0.0930	38.5	3.123	3.235	3.360
0.0950		2.995	3.101	3.218
0.1000		2.707	2.798	2.899
0.101	38.0	2.654	2.743	2.841
0.106	37.5	2.413	2.491	2.575
0.110		2.243	2.313	2.389
0.112		2.164	2.231	2.303
0.113	37	2.127	2.192	2.262
0.115		2.054	2.116	2.183
0.118	36.5	1.952	2.010	2.072
0.120		1.889	1.943	2.002
0.125		1.742	1.791	1.844
0.126	36	1.715	1.763	1.814
0.130		1.612	1.656	1.703
0.132		1.564	1.606	1.651
0.134	35.5	1.518	1.558	1.602

Electrical Resistance (Continued)

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.138		1.432	1.469	1.509
0.140		1.392	1.428	1.466
0.141	35	1.373	1.408	1.445
0.149	34.5	1.231	1.260	1.292
0.150		1.214	1.244	1.275
0.159	34.0	1.082	1.107	1.133
0.160		1.069	1.093	1.119
0.169	33.5	0.9588	0.9798	1.002
0.170		0.9476	0.9683	0.9901
0.179	33	0.8555	0.8734	0.8922
0.180		0.8461	0.8637	0.8823
0.189		0.7680	0.7834	0.7996
0.190	32.5	0.7600	0.7752	0.7911
0.200		0.6864	0.6996	0.7134
0.202	32	0.6730	0.6858	0.6992
0.210		0.6230	0.6345	0.6466
0.212	31.5	0.6114	0.6226	0.6344
0.220		0.5680	0.5782	0.5888
0.222		0.5579	0.5678	0.5781
0.224		0.5481	0.5577	0.5678
0.225	31	0.5409	0.5528	0.5653
0.230		0.5178	0.5290	0.5408
0.236		0.4920	0.5024	0.5134
0.239		0.4799	0.4899	0.5005
0.240	30.5	0.4759	0.4858	0.4963
0.250		0.4389	0.4477	0.4570
0.253	30	0.4286	0.4372	0.4462
0.260		0.4060	0.4140	0.4223
0.265		0.3909	0.3985	0.4064
0.268	29.5	0.3823	0.3896	0.3973

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.270		0.3767	0.3839	0.3914
0.280		0.3505	0.3569	0.3637
0.286	29	0.3360	0.3421	0.3485
0.290		0.3269	0.3327	0.3389
0.295		0.3159	0.3216	0.3274
0.300		0.3056	0.3109	0.3165
0.301	28.5	0.3036	0.3089	0.3144
0.315		0.2773	0.2820	0.2869
0.319	28	0.2705	0.2750	0.2797
0.335		0.2454	0.2493	0.2535
0.339	27.5	0.2397	0.2435	0.2475
0.345		0.2314	0.2351	0.2389
0.350		0.2249	0.2284	0.2321
0.355		0.2187	0.2220	0.2256
0.360	27	0.2127	0.2159	0.2193
0.375		0.1961	0.1990	0.2020
0.380	26.5	0.1905	0.1938	0.1972
0.383		0.1875	0.1908	0.1941
0.390		0.1809	0.1840	0.1872
0.400		0.1720	0.1749	0.1779
0.402	26	0.1703	0.1732	0.1761
0.420		0.1561	0.1586	0.1613
0.425		0.1525	0.1549	0.1575
0.427	25.5	0.1511	0.1535	0.1560
0.450		0.1361	0.1382	0.1404
0.453	25	0.1343	0.1364	0.1385
0.475		0.1222	0.1240	0.1259
0.481	24.5	0.1192	0.1210	0.1228
0.500		0.1104	0.1119	0.1136
0.508	24	0.1067	0.1084	0.1102