

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	1679	1768	1856
0.0101		1581	1664	1747
0.0109	57	1357	1429	1500
0.0113		1263	1330	1396
0.0120		1120	1179	1238
0.0125	56	1032	1086	1141
0.0130	55.5	954.3	1005	1055
0.0135	55	884.9	931.5	978.1
0.0140		822.8	866.1	909.5
0.0145	54.5	767.1	807.4	847.8
0.0155	54	671.3	706.6	742.0
0.0160		630.0	663.1	696.3
0.0165	53.5	592.4	623.6	654.7
0.0170		558.1	587.4	616.8
0.0175	53	526.6	554.3	582.1
0.0180		497.8	524.0	550.2
0.0185	52.5	471.2	496.0	520.8
0.0190		446.8	470.3	493.8
0.0195	52	424.1	446.5	468.8
0.0200		403.2	424.4	445.6
0.0210	51.5	365.7	385.0	404.2
0.0215		348.9	367.3	385.6
0.0220	51	333.2	350.8	368.3
0.0230	50.5	304.9	320.9	337.0
0.0240		280.0	294.7	309.5
0.0245	50	268.7	282.8	297.0
0.0250		258.0	271.6	285.2
0.0260	49.5	238.6	251.1	263.7
0.0270		221.2	232.9	244.5
0.0275	49	213.3	224.5	235.7
0.0280		205.7	216.5	227.4
0.0290	48.5	191.8	201.9	212.0
0.0300		179.2	188.6	198.1
0.0310	48	167.8	176.7	185.5
0.0320		157.5	165.8	174.1
0.0330	47.5	148.3	155.9	163.5
0.0340		139.7	146.9	154.0
0.0350	47	131.9	138.6	145.3
0.0360		124.6	131.0	137.3
0.0370	46.5	118.0	124.0	130.0
0.0380		111.9	117.6	123.3
0.0381	46.1	111.3	116.9	122.6
0.0390	46.0	106.2	111.6	117.0
0.0400		101.0	106.1	111.2
0.0410	45.5	96.09	101.0	105.9
0.0420		91.57	96.24	100.9

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0430		87.36	91.81	96.27
0.0437		84.59	88.90	93.21
0.0440	45	83.44	87.69	91.94
0.0450		79.77	83.83	87.90
0.0460		76.34	80.23	84.12
0.0470	44.5	73.39	76.85	80.31
0.0480		70.37	73.68	77.00
0.0490		67.52	70.71	73.89
0.0500	44	64.85	67.91	70.96
0.0520	43.5	59.96	62.78	65.61
0.0530		57.72	60.44	63.16
0.0550	43	53.60	56.12	58.65
0.0560		51.70	54.13	56.57
0.0580		48.19	50.47	52.74
0.0600	42.5	45.27	47.16	49.04
0.0620		42.40	44.16	45.93
0.0630	42	41.06	42.77	44.48
0.0650	41.5	38.29	40.18	42.36
0.0670		36.08	37.82	39.81
0.0680		35.05	36.71	38.62
0.0700	41	33.12	34.65	36.39
0.0710		32.21	33.68	35.35
0.0740		29.70	31.00	32.48
0.0750	40.5	28.92	30.18	31.60
0.0780	40	26.78	27.90	29.17
0.0800		25.48	26.53	27.70
0.0830	39.5	23.70	24.64	25.70
0.0850		22.62	23.50	24.48
0.0880	39	21.12	21.92	22.81
0.0900		20.21	20.96	21.79
0.0930	38.5	18.95	19.63	20.38
0.0950		18.17	18.81	19.52
0.1000		16.42	16.98	17.59
0.101	38.0	16.10	16.64	17.23
0.106	37.5	14.64	15.11	15.62
0.110		13.61	14.03	14.49
0.112		13.13	13.53	13.97
0.113	37	12.90	13.30	13.72
0.115		12.46	12.84	13.24
0.118	36.5	11.84	12.19	12.57
0.120		11.46	11.79	12.15
0.125		10.57	10.86	11.18
0.126	36	10.40	10.69	11.01
0.130		9.780	10.05	10.33
0.132		9.489	9.743	10.02
0.134	35.5	9.211	9.455	9.716

Electrical Resistance (Continued)

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.138		8.690	8.914	9.154
0.140		8.446	8.661	8.892
0.141	35	8.328	8.539	8.765
0.149	34.5	7.466	7.647	7.840
0.150		7.368	7.545	7.734
0.159	34.0	6.564	6.715	6.875
0.160		6.483	6.631	6.789
0.169	33.5	5.817	5.944	6.079
0.170		5.749	5.874	6.007
0.179	33	5.190	5.298	5.413
0.180		5.133	5.240	5.352
0.189		4.659	4.753	4.851
0.190	32.5	4.611	4.703	4.799
0.200		4.164	4.244	4.328
0.202	32	4.083	4.161	4.242
0.210		3.780	3.850	3.923
0.212	31.5	3.709	3.777	3.848
0.220		3.446	3.508	3.572
0.222		3.385	3.445	3.507
0.224		3.325	3.383	3.444
0.225	31	3.281	3.353	3.429
0.230		3.142	3.209	3.281
0.236		2.985	3.048	3.115
0.239		2.911	2.972	3.036
0.240	30.5	2.887	2.947	3.011
0.250		2.663	2.716	2.773
0.253	30	2.600	2.652	2.707
0.260		2.463	2.511	2.562
0.265		2.372	2.417	2.465
0.268	29.5	2.319	2.364	2.410

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.270		2.285	2.329	2.374
0.280		2.126	2.165	2.207
0.286	29	2.038	2.075	2.114
0.290		1.983	2.019	2.056
0.295		1.917	1.951	1.986
0.300		1.854	1.886	1.920
0.301	28.5	1.842	1.874	1.907
0.315		1.682	1.711	1.741
0.319	28	1.641	1.668	1.697
0.335		1.489	1.513	1.538
0.339	27.5	1.454	1.477	1.501
0.345		1.404	1.426	1.449
0.350		1.364	1.386	1.408
0.355		1.327	1.347	1.368
0.360	27	1.290	1.310	1.330
0.375		1.189	1.207	1.226
0.380	26.5	1.156	1.176	1.197
0.383		1.138	1.157	1.178
0.390		1.097	1.116	1.136
0.400		1.044	1.061	1.079
0.402	26	1.033	1.051	1.068
0.420		0.9471	0.9624	0.9783
0.425		0.9251	0.9399	0.9552
0.427	25.5	0.9165	0.9311	0.9463
0.450		0.8257	0.8383	0.8515
0.453	25	0.8148	0.8273	0.8402
0.475		0.7415	0.7524	0.7638
0.481	24.5	0.7232	0.7338	0.7447
0.500		0.6695	0.6791	0.6889
0.508	24	0.6475	0.6578	0.6686