

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	314.9	331.4	348.0
0.0101		296.4	312.0	327.6
0.0109	57	254.5	267.9	281.3
0.0113		236.8	249.3	261.7
0.0120		210.0	221.0	232.1
0.0125	56	193.5	203.7	213.9
0.0130	55.5	178.9	188.3	197.8
0.0135	55	165.9	174.7	183.4
0.0140		154.3	162.4	170.5
0.0145	54.5	143.8	151.4	159.0
0.0155	54	125.9	132.5	139.1
0.0160		118.1	124.3	130.6
0.0165	53.5	111.1	116.9	122.8
0.0170		104.6	110.1	115.6
0.0175	53	98.74	103.9	109.1
0.0180		93.33	98.24	103.2
0.0185	52.5	88.35	93.01	97.66
0.0190		83.77	88.17	92.58
0.0195	52	79.53	83.71	87.90
0.0200		75.60	79.58	83.56
0.0210	51.5	68.57	72.18	75.79
0.0215		65.42	68.86	72.30
0.0220	51	62.48	65.77	69.05
0.0230	50.5	57.16	60.17	63.18
0.0240		52.50	55.26	58.03
0.0245	50	50.38	53.03	55.68
0.0250		48.38	50.93	53.48
0.0260	49.5	44.73	47.09	49.44
0.0270		41.48	43.66	45.85
0.0275	49	39.99	42.09	44.20
0.0280		38.57	40.60	42.63
0.0290	48.5	35.96	37.85	39.74
0.0300		33.60	35.37	37.14
0.0310	48	31.47	33.12	34.78
0.0320		29.53	31.08	32.64
0.0330	47.5	27.81	29.23	30.65
0.0340		26.20	27.54	28.87
0.0350	47	24.72	25.98	27.24
0.0360		23.37	24.56	25.75
0.0370	46.5	22.12	23.25	24.38
0.0380		20.97	22.04	23.11
0.0381	46.1	20.86	21.93	22.99
0.0390	46.0	19.91	20.93	21.94
0.0400		18.93	19.89	20.86
0.0410	45.5	18.02	18.94	19.85
0.0420		17.17	18.04	18.92

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0430		16.38	17.22	18.05
0.0437		15.86	16.67	17.48
0.0440	45	15.64	16.44	17.24
0.0450		14.96	15.72	16.48
0.0460		14.31	15.04	15.77
0.0470	44.5	13.76	14.41	15.06
0.0480		13.19	13.82	14.44
0.0490		12.66	13.26	13.85
0.0500	44	12.16	12.73	13.31
0.0520	43.5	11.24	11.77	12.30
0.0530		10.82	11.33	11.84
0.0550	43	10.05	10.52	11.00
0.0560		9.693	10.15	10.61
0.0580		9.036	9.462	9.888
0.0600	42.5	8.488	8.842	9.196
0.0620		7.949	8.281	8.612
0.0630	42	7.699	8.020	8.341
0.0650	41.5	7.179	7.534	7.943
0.0670		6.766	7.091	7.464
0.0680		6.572	6.884	7.241
0.0700	41	6.209	6.496	6.824
0.0710		6.039	6.314	6.629
0.0740		5.568	5.813	6.091
0.0750	40.5	5.423	5.659	5.926
0.0780	40	5.021	5.232	5.470
0.0800		4.777	4.974	5.194
0.0830	39.5	4.444	4.621	4.818
0.0850		4.240	4.406	4.590
0.0880	39	3.961	4.110	4.277
0.0900		3.789	3.930	4.086
0.0930	38.5	3.552	3.680	0.0930
0.0950		3.406	3.527	0.0950
0.1000		3.079	3.183	0.1000
0.101	38.0	3.019	3.120	0.101
0.106	37.5	2.745	2.833	0.106
0.110		2.551	2.631	0.110
0.112		2.462	2.538	0.112
0.113	37	2.419	2.493	0.113
0.115		2.337	2.407	0.115
0.118	36.5	2.221	2.286	0.118
0.120		2.148	2.210	0.120
0.125		1.982	2.037	0.125
0.126	36	1.951	2.005	0.126
0.130		1.834	1.883	0.130
0.132		1.779	1.827	0.132
0.134	35.5	1.727	1.773	0.134

Electrical Resistance (Continued)

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.138		1.629	1.671	1.716
0.140		1.584	1.624	1.667
0.141	35	1.562	1.601	1.643
0.149	34.5	1.400	1.434	1.470
0.150		1.381	1.415	1.450
0.159	34.0	1.231	1.259	1.289
0.160		1.216	1.243	1.273
0.169	33.5	1.091	1.114	1.140
0.170		1.078	1.101	1.126
0.179	33	0.9731	0.9934	1.015
0.180		0.9624	0.9824	1.004
0.189		0.8736	0.8911	0.9095
0.190	32.5	0.8645	0.8817	0.8999
0.200		0.7808	0.7958	0.8115
0.202	32	0.7655	0.7801	0.7954
0.210		0.7087	0.7218	0.7355
0.212	31.5	0.6955	0.7082	0.7216
0.220		0.6461	0.6577	0.6697
0.222		0.6346	0.6459	0.6576
0.224		0.6234	0.6344	0.6458
0.225	31	0.6153	0.6288	0.6430
0.230		0.5890	0.6017	0.6151
0.236		0.5597	0.5715	0.5840
0.239		0.5459	0.5573	0.5693
0.240	30.5	0.5414	0.5526	0.5645
0.250		0.4992	0.5093	0.5199
0.253	30	0.4876	0.4973	0.5075
0.260		0.4618	0.4709	0.4804
0.265		0.4447	0.4533	0.4623
0.268	29.5	0.4349	0.4432	0.4519

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.270		0.4285	0.4366	0.4452
0.280		0.3986	0.4060	0.4137
0.286	29	0.3822	0.3892	0.3964
0.290		0.3718	0.3785	0.3855
0.295		0.3594	0.3658	0.3724
0.300		0.3476	0.3537	0.3600
0.301	28.5	0.3453	0.3513	0.3576
0.315		0.3155	0.3208	0.3264
0.319	28	0.3076	0.3128	0.3182
0.335		0.2791	0.2836	0.2883
0.339	27.5	0.2726	0.2770	0.2815
0.345		0.2633	0.2674	0.2718
0.350		0.2558	0.2598	0.2640
0.355		0.2487	0.2526	0.2566
0.360	27	0.2419	0.2456	0.2495
0.375		0.2230	0.2264	0.2298
0.380	26.5	0.2167	0.2204	0.2244
0.383		0.2133	0.2170	0.2208
0.390		0.2058	0.2093	0.2129
0.400		0.1957	0.1989	0.2023
0.402	26	0.1937	0.1970	0.2003
0.420		0.1776	0.1804	0.1834
0.425		0.1735	0.1762	0.1791
0.427	25.5	0.1718	0.1746	0.1774
0.450		0.1548	0.1572	0.1597
0.453	25	0.1528	0.1551	0.1575
0.475		0.1390	0.1411	0.1432
0.481	24.5	0.1356	0.1376	0.1396
0.500		0.1255	0.1273	0.1292
0.508	24	0.1214	0.1233	0.1254