

Table of Standard Diameters

Currently, the American Wire Gauge standard is maintained by [ASTM International](#), and the designation for the standard is [ASTM B258-18](#). The values for the diameters and cross-sectional areas for standard wires are given in Table 1. Wire sizes 46 to 56 AWG are generally finer than a human hair and are not reliably measured using a standard micrometer. They are not included in some published AWG tables, but we include them here because they might have value to some readers.

Table 1. Standard Diameters and Cross-Sectional Areas of AWG^o Sizes of Solid Round Wires Used as Electrical Conductors at 20°C.

Size	Diameter			Cross-Sectional Area	
	AWG	mils ^b	in	mm	cmils ^c
4/0	460.0	0.4600	11.684	211600	107.2
3/0	409.6	0.4096	10.404	167800	85.0
2/0	364.8	0.3648	9.26	133100	67.4
1/0	324.9	0.3249	8.25	105600	53.5
1	289.3	0.2893	7.35	83690	42.4
2	257.6	0.2576	6.54	66360	33.6
3	229.4	0.2294	5.82	52620	26.7
4	204.3	0.2043	5.19	41740	21.1
5	181.9	0.1819	4.62	33090	16.8
6	162.0	0.1620	4.11	26240	13.3
7	144.3	0.1443	3.67	20820	10.6
8	128.5	0.1285	3.26	16510	8.37

Size	Diameter			Cross-Sectional Area	
AWG	mils^b	in	mm	cmils^c	mm²
9	114.4	0.1144	2.91	13090	6.63
10	101.9	0.1019	2.59	10380	5.26
11	90.7	0.0907	2.30	8230	4.17
12	80.8	0.0808	2.05	6530	3.31
13	72.0	0.0720	1.83	5180	2.63
14	64.1	0.0641	1.63	4110	2.08
15	57.1	0.0571	1.45	3260	1.65
16	50.8	0.0508	1.29	2580	1.31
17	45.3	0.0453	1.15	2050	1.04
18	40.3	0.0403	1.02	1620	0.823
19	35.9	0.0359	0.904	1290	0.653
20	32.0	0.0320	0.813	1020	0.519
21	28.5	0.0285	0.724	812	0.412
22	25.3	0.0253	0.643	640	0.324
23	22.6	0.0226	0.574	511	0.259
24	20.1	0.0201	0.511	404	0.205
25	17.9	0.0179	0.455	320	0.162
26	15.9	0.0159	0.404	253	0.128
27	14.2	0.0142	0.361	202	0.102
28	12.6	0.0126	0.320	159	0.0804
29	11.3	0.0113	0.287	128	0.0647

Size	Diameter			Cross-Sectional Area	
AWG	mils^b	in	mm	cmils^c	mm²
30	10.0	0.0100	0.254	100	0.0507
31	8.9	0.0089	0.226	79.2	0.0401
32	8.0	0.0080	0.203	64.0	0.0324
33	7.1	0.0071	0.180	50.4	0.0255
34	6.3	0.0063	0.160	39.7	0.0201
35	5.6	0.0056	0.142	31.4	0.0159
36	5.0	0.0050	0.127	25.0	0.0127
37	4.5	0.0045	0.114	20.2	0.0103
38	4.0	0.0040	0.102	16.0	0.00811
39	3.5	0.0035	0.0890	12.2	0.00621
40	3.1	0.0031	0.0787	9.61	0.00487
41	2.8	0.0028	0.0711	7.84	0.00397
42	2.5	0.0025	0.0635	6.25	0.00317
43	2.2	0.0022	0.0559	4.84	0.00245
44	2.0	0.0020	0.0508	4.00	0.00203
45	1.76	0.00176	0.0447	3.10	0.00157
46	1.57	0.00157	0.0399	2.46	0.00125
47	1.40	0.00140	0.0356	1.96	0.000993
48	1.24	0.00124	0.0315	1.54	0.000779
49	1.11	0.00111	0.0282	1.23	0.000624
50	0.99	0.00099	0.0252	0.980	0.000497

Size	Diameter			Cross-Sectional Area	
AWG	mils ^b	in	mm	cmils ^c	mm ²
51	0.88	0.00088	0.0224	0.774	0.000392
52	0.78	0.00078	0.0198	0.608	0.000308
53	0.70	0.00070	0.0178	0.490	0.000248
54	0.62	0.00062	0.0158	0.384	0.000195
55	0.55	0.00055	0.0140	0.302	0.000153
56	0.49	0.00049	0.0125	0.240	0.000122

- a. Values derived from [ASTM B258-18](#).
- b. A *mil* is equal to 1/1000 inch.
- c. A *circular mil* is the area of a circle one mil in diameter.

Reading the AWG chart

The AWG sizes are listed in the left column. For each size, the wire diameter is listed in mils, inches, and millimeters. You can use the table to convert from AWG to mm, or from AWG to inches. For cross-sectional areas, conversions between square millimeters (mm²) and circular mils can be made. A circular mil is the area of a circle one mil in diameter.

No. 4/0 AWG can also be written No. 0000 AWG. In conversation, this is usually referred to as “four-aught wire.” Similarly, No. 1/0 AWG would commonly be pronounced, “one-aught wire.” Note that this is different beginning with No. 1 AWG, which is different to No. 1/0 AWG. When speaking, No. 1 AWG is commonly called “one-gauge wire, just as No. 23 AWG is pronounced, “23-gauge wire.”

For stranded wire, the AWG is the sum of all of the cross-sectional areas of the individual strands, not including the spaces between the strands. For this reason, the actual diameter of a stranded wire is larger than the diameter of a solid wire having the same gauge.