# HOW TO COMPUTE CIRCULAR MIL AREA OF (CMA) OF VARIOUS SHAPES OF WIRE 

Round Solid Wire AWG
Dia. $\mathbf{x}$ Dia. $D \times D=C M A$

Stranded Wire AWG


Multiply the diameter of one strand (in mils) by itself, and then multiply the result by the total number of strands.

D $\times \mathrm{D} \times$ Number of Strands $=$ CMA

WIRE SIZES

| $\begin{aligned} & \text { WIRE } \\ & \text { SZZE } \end{aligned}$AWG. | STRANDS |  | AREA CIRC. <br> MILLS | TOTAL DIA. | WIRE STE AWG. | STRANDS |  | AREA CIRC. MILLS | TOTAL DIA. | WIRE SIZE AWG. | STRANDS |  | AREA CIRC. MILLS | TOTAL DIA. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NUMBER | DIA. |  |  |  | NUMBER | DIA. |  |  |  | NUMBER | DIA. |  |  |
| \#26 \#26 \#26 | 1 8 10 | .0159 .0056 .005 | 254 252 250 | .016 .018 .018 | \#20 \#20 \#20 | 26 10 7 | .0063 .010 .0126 | 1,035 1,005 1,120 | $\begin{aligned} & .039 \\ & .040 \\ & .040 \end{aligned}$ | $\begin{aligned} & \# 14 \\ & \# 14 \end{aligned}$ | 7 41 | $\begin{aligned} & .025 \\ & .010 \end{aligned}$ | $\begin{aligned} & 4,494 \\ & 4,141 \end{aligned}$ | $\begin{aligned} & .076 \\ & .077 \end{aligned}$ |
| $\begin{aligned} & \# 25 \\ & \# 25 \\ & \# 25 \end{aligned}$ | 1108 | $\begin{aligned} & .0179 \\ & .0056 \\ & .0063 \end{aligned}$ | $\begin{aligned} & 320 \\ & 315 \\ & 318 \end{aligned}$ | $\begin{aligned} & .018 \\ & .020 \\ & .021 \end{aligned}$ | \#18 <br> \#18 <br> \#18 <br> \#18 | 119 | $\begin{gathered} .040 \\ .0092 \end{gathered}$ | 1,600 | . 040 | \#12 |  |  |  |  |
|  |  |  |  |  |  |  |  | 1,607 | . 046 |  | 19 | . 0808 | 6,530 6,088 | . 080 |
|  |  |  |  |  |  |  | . 0153 | 1,639 | . 046 | \#12 | 7 | . 0305 | 6,512 | . 091 |
|  |  |  |  |  |  | 65 | . 005 | 1,625 | . 048 | \#12 | 19 | . 0185 | 6,504 | . 092 |
|  |  |  |  | . 020 | \#18 | 16 | . 010 | 1,616 | .049.049.050 | \#12 | 3784 | .0133.0089 | 6,524 | . 093 |
| \#24 | 1 | . 0201 | 404 |  |  |  | . 0063 | 1,6401,649 |  | \#12 |  |  | 6,695 | $094 .$ |
| \#24 | 10 | . 0071 | 398 | . 023 | \#18 | 7 | . 0152 |  |  | $\begin{aligned} & \# 12 \\ & \# 12 \end{aligned}$ | $\begin{gathered} 165 \\ 65 \end{gathered}$ | $.0063$ | $\begin{aligned} & 6,567 \\ & 6,565 \end{aligned}$ | $\begin{aligned} & .095 \\ & .097 \end{aligned}$ |
| \#24 | 7 | . 008 | 448 | . 024 |  |  |  | 1,779 | . 050 |  |  |  |  |  |
| $\begin{aligned} & \# 23 \\ & \# 23 \\ & \# 23 \end{aligned}$ | $\begin{gathered} 1 \\ 10 \\ 8 \end{gathered}$ | $\begin{gathered} .0226 \\ .0071 \\ .008 \end{gathered}$ | $\begin{aligned} & 510 \\ & 501 \\ & 506 \end{aligned}$ | $\begin{aligned} & .023 \\ & .026 \\ & .026 \end{aligned}$ | $\begin{aligned} & \# 16 \\ & \# 16 \end{aligned}$ | 1 | . 0508 | 2,583 | . 051 | \#10 | 1 | . 1019 | 10,380 | . 102 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | \#16 | 19 | . 0117 | 2,601 | . 058 | \#10 | 7 | . 0385 | 10,380 | . 115 |
|  |  |  |  |  | \#16 | 65 | . 0063 | 2,587 | . 059 | \#10 | 105 | . 010 | 10,550 | . 116 |
|  |  |  |  |  | \#16 | 105 | . 005 | 2,625 | . 059 | \#10 | 37 | . 0167 | 10,320 | . 117 |
|  |  | . 0253 | 642 | .025.025 | \#16 | 19 | . 0117 | 2,409 | . 061 | \#10 | 19 | . 0234 | 10,400 | . 117 |
| \#22 | 1 |  |  |  | \#16 | 26 | . 010 | 2,625 | . 061 | $\begin{aligned} & \# 10 \\ & \# 10 \end{aligned}$ | $\begin{aligned} & 90 \\ & 37 \end{aligned}$ | $\begin{aligned} & .0089 \\ & .010 \end{aligned}$ | $\begin{gathered} 9,090 \\ 10,445 \end{gathered}$ | $\begin{aligned} & .120 \\ & .122 \end{aligned}$ |
| \#22 | 21 | . 005 | 525 |  |  |  |  |  |  |  |  |  |  |  |
| \#22 | 6 | . 010 | 600 |  |  |  |  |  |  |  |  |  |  |  |
| \#22 | 8 | . 0089 | 632 | . 029 |  |  |  |  |  |  |  |  |  |  |
| \#22 | 10 | . 008 | 638 | . 029 |  |  |  |  |  |  |  |  |  |  |
| \#22 | 7 | . 010 | 700 | . 030 |  |  |  | 4,081 |  | \#8 | 1 | . 1285 | 16,510 | . 129 |
| \#22 | 16 | . 0063 | 636 | . 029 | \#14 \#14 | 377 | . 0105 |  | .073 .073 |  |  |  | 16,530 | . 146 |
|  |  |  |  |  | \#14 |  | .0242 .0063 | 4,099 4,179 | . 073 | \#8 | 37 | . 0211 | 16,470 | . 148 |
|  | 1 | $\begin{aligned} & .032 \\ & .007 \end{aligned}$ | $\begin{array}{r} 1,024 \\ 950 \end{array}$ | .032.036 |  |  | . 0063 | 4,179 4,106 | . 073 | \#8 | 19 | . 0295 | 16,540 | . 148 |
| \#20 |  |  |  |  |  |  | . 0071 |  |  | \#8 | 133 | . 0111 | 16,390 | . 166 |
| \#20 | 19 |  |  |  |  |  |  |  |  |  | 49 | . 0184 | 16,590 | . 166 |
| \#20 | 7 | . 012 | 1,025 | . 036 |  |  |  |  |  |  |  |  |  |  |

