

Aluminum I Bar Grating Load Table



GIA & GIA-2 Series; 19-SI-4 & 19-SI-2 (1-3/16" On Center) Spacing

| Series Type & Name | BB HGT | BB THK | PED MAX | LBS./SF | | LOAD/ DEFL | Clear Span | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|--------|--------|---------|---------|---------|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|
| | | | | 19-SI-4 | 19-SI-2 | | 12" | 18" | 24" | 30" | 36" | 42" | 48" | 54" | 60" | 66" | 72" | 78" | 84" | 90" | 96" | 102" | 108" | 114" | 120" | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GIA-100 & GIA-100-2 | 1" | 3/16" | 44" | 1.9 | 2.1 | U | 2526 | 1123 | 632 | 404 | 281 | 206 | 158 | 125 | 101 | 84 | 70 | 60 | 52 | 45 | 39 | 35 | 31 | 28 | 25 | | | | | |
| | | | | | | D | 0.036 | 0.081 | 0.144 | 0.225 | 0.324 | 0.440 | 0.576 | 0.730 | 0.900 | 1.095 | 1.293 | 1.526 | 1.779 | 2.029 | 2.276 | 2.603 | 2.898 | 3.250 | 3.562 | | | | | |
| | | | | | | C | 1263 | 842 | 632 | 505 | 421 | 361 | 316 | 281 | 253 | 230 | 211 | 194 | 180 | 168 | 158 | 149 | 140 | 133 | 126 | | | | | |
| | | | | | | D | 0.029 | 0.065 | 0.115 | 0.180 | 0.259 | 0.353 | 0.461 | 0.584 | 0.721 | 0.872 | 1.039 | 1.215 | 1.408 | 1.616 | 1.844 | 2.086 | 2.327 | 2.600 | 2.873 | | | | | |
| GIA-125 & GIA-125-2 | 1-1/4" | 3/16" | 52" | 2.3 | 2.5 | U | 3947 | 1754 | 987 | 632 | 439 | 322 | 247 | 195 | 158 | 130 | 110 | 93 | 81 | 70 | 62 | 55 | 49 | 44 | 39 | | | | | |
| | | | | | | D | 0.029 | 0.065 | 0.115 | 0.180 | 0.259 | 0.353 | 0.461 | 0.583 | 0.720 | 0.868 | 1.040 | 1.211 | 1.419 | 1.616 | 1.853 | 2.095 | 2.345 | 2.615 | 2.845 | | | | | |
| | | | | | | C | 1974 | 1316 | 987 | 789 | 658 | 564 | 493 | 439 | 395 | 359 | 329 | 304 | 282 | 263 | 247 | 232 | 219 | 208 | 197 | | | | | |
| | | | | | | D | 0.023 | 0.052 | 0.092 | 0.144 | 0.207 | 0.282 | 0.368 | 0.467 | 0.576 | 0.697 | 0.830 | 0.975 | 1.129 | 1.295 | 1.476 | 1.663 | 1.864 | 2.082 | 2.300 | | | | | |
| GIA-150 & GIA-150-2 | 1-1/2" | 3/16" | 59" | 2.6 | 2.8 | U | 5684 | 2526 | 1421 | 909 | 632 | 464 | 355 | 281 | 227 | 188 | 158 | 135 | 116 | 101 | 89 | 79 | 70 | 63 | 57 | | | | | |
| | | | | | | D | 0.024 | 0.054 | 0.096 | 0.150 | 0.216 | 0.294 | 0.384 | 0.487 | 0.599 | 0.726 | 0.865 | 1.017 | 1.176 | 1.349 | 1.539 | 1.741 | 1.939 | 2.167 | 2.407 | | | | | |
| | | | | | | C | 2842 | 1895 | 1421 | 1137 | 947 | 812 | 711 | 632 | 568 | 517 | 474 | 437 | 406 | 379 | 355 | 334 | 316 | 299 | 284 | | | | | |
| | | | | | | D | 0.019 | 0.043 | 0.077 | 0.120 | 0.173 | 0.235 | 0.307 | 0.389 | 0.480 | 0.581 | 0.692 | 0.811 | 0.941 | 1.080 | 1.228 | 1.386 | 1.556 | 1.732 | 1.919 | | | | | |
| GIA-175 & GIA-175-2 | 1-3/4" | 3/16" | 66" | 3.0 | 3.3 | U | 7737 | 3439 | 1934 | 1238 | 860 | 632 | 484 | 382 | 309 | 256 | 215 | 183 | 158 | 138 | 121 | 107 | 96 | 86 | 77 | | | | | |
| | | | | | | D | 0.021 | 0.046 | 0.082 | 0.129 | 0.185 | 0.252 | 0.329 | 0.417 | 0.514 | 0.623 | 0.741 | 0.869 | 1.009 | 1.161 | 1.318 | 1.485 | 1.675 | 1.863 | 2.047 | | | | | |
| | | | | | | C | 3868 | 2579 | 1934 | 1547 | 1289 | 1105 | 967 | 860 | 774 | 703 | 645 | 595 | 553 | 516 | 484 | 455 | 430 | 407 | 387 | | | | | |
| | | | | | | D | 0.016 | 0.037 | 0.066 | 0.103 | 0.148 | 0.202 | 0.263 | 0.333 | 0.412 | 0.498 | 0.593 | 0.695 | 0.807 | 0.926 | 1.054 | 1.189 | 1.334 | 1.485 | 1.646 | | | | | |
| GIA-200 & GIA-200-2 | 2" | 3/16" | 73" | 3.4 | 3.7 | U | 10106 | 4491 | 2526 | 1617 | 1123 | 825 | 632 | 499 | 404 | 334 | 281 | 239 | 206 | 180 | 158 | 140 | 125 | 112 | 101 | | | | | |
| | | | | | | D | 0.018 | 0.040 | 0.072 | 0.113 | 0.162 | 0.221 | 0.288 | 0.364 | 0.450 | 0.544 | 0.649 | 0.760 | 0.881 | 1.014 | 1.153 | 1.302 | 1.461 | 1.625 | 1.799 | | | | | |
| | | | | | | C | 5053 | 3369 | 2526 | 2021 | 1684 | 1444 | 1263 | 1123 | 1011 | 919 | 842 | 777 | 722 | 674 | 632 | 594 | 561 | 532 | 505 | | | | | |
| | | | | | | D | 0.014 | 0.032 | 0.058 | 0.090 | 0.130 | 0.176 | 0.230 | 0.292 | 0.360 | 0.436 | 0.518 | 0.608 | 0.706 | 0.810 | 0.922 | 1.040 | 1.166 | 1.300 | 1.439 | | | | | |
| GIA-225 & GIA-225-2 | 2-1/4" | 3/16" | 80" | 3.8 | 4.0 | U | 12790 | 5684 | 3197 | 2046 | 1421 | 1044 | 799 | 632 | 512 | 423 | 355 | 303 | 261 | 227 | 200 | 177 | 158 | 142 | 128 | | | | | |
| | | | | | | D | 0.016 | 0.036 | 0.064 | 0.100 | 0.144 | 0.196 | 0.256 | 0.324 | 0.400 | 0.484 | 0.576 | 0.677 | 0.784 | 0.899 | 1.025 | 1.156 | 1.297 | 1.447 | 1.601 | | | | | |
| | | | | | | C | 6395 | 4263 | 3197 | 2558 | 2132 | 1827 | 1599 | 1421 | 1279 | 1163 | 1066 | 984 | 914 | 853 | 799 | 752 | 711 | 673 | 639 | | | | | |
| | | | | | | D | 0.013 | 0.029 | 0.051 | 0.080 | 0.115 | 0.157 | 0.205 | 0.259 | 0.320 | 0.387 | 0.461 | 0.541 | 0.628 | 0.720 | 0.819 | 0.924 | 1.038 | 1.155 | 1.279 | | | | | |
| GIA-250 & GIA-250-2 | 2-1/2" | 3/16" | 87" | 4.0 | 4.2 | U | 15790 | 7018 | 3947 | 2526 | 1754 | 1289 | 987 | 780 | 632 | 522 | 439 | 374 | 322 | 281 | 247 | 219 | 195 | 175 | 158 | | | | | |
| | | | | | | D | 0.014 | 0.032 | 0.058 | 0.090 | 0.130 | 0.176 | 0.230 | 0.292 | 0.360 | 0.436 | 0.519 | 0.609 | 0.705 | 0.811 | 0.923 | 1.043 | 1.167 | 1.300 | 1.441 | | | | | |
| | | | | | | C | 7895 | 5263 | 3947 | 3158 | 2632 | 2256 | 1974 | 1754 | 1579 | 1435 | 1316 | 1215 | 1128 | 1053 | 987 | 929 | 877 | 831 | 789 | | | | | |
| | | | | | | D | 0.012 | 0.026 | 0.046 | 0.072 | 0.104 | 0.141 | 0.184 | 0.233 | 0.288 | 0.348 | 0.415 | 0.487 | 0.565 | 0.648 | 0.737 | 0.833 | 0.933 | 1.040 | 1.151 | | | | | |

U - Uniform Load- Lbs./Sf. D - Deflection in Inches C - Concentrated Load- Lbs./Ft. of Width at Mid Span; Loading data derived from 10.1053 bearing bars per foot of Grating width. The provided loading and deflection values are theoretical and based on a maximum allowable Fiber stress (Fs) of 12,000 PSI. Elastic Modulus (E) is stated as 10,000,000 PSI. Spans listed in the table represent clear spans (inside structural supports).

Span and loading values to the left of the bolded black line result in a deflection of 1/4" or less under a uniform load of 100 Lbs./Sf., ensuring safe pedestrian comfort. The corresponding maximum pedestrian spans under this criterion are detailed in the PED MAX column.

Span and loading values positioned to the right of the bolded black line are applicable to various load types at the discretion of a licensed engineer.

The technical information provided is theoretical and intended for assessment by individuals with technical expertise, with any use thereof to beat their independent discretion and risk.

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