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团体标准

T/CSCS TC02 \*\*\*—2018

机械结构用方矩管

Rectangular tube for machinery structure

|  |
| --- |
| （征求意见稿） |
|  |

XXXX - XX - XX发布

XXXX - XX - XX实施

中国钢结构协会发布

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前  言

本标准按照GB/T 1.1-2009《标准化工作导则 第 1 部分：标准的结构和编写》给出的规则起草。

本标准参照GB/T 6728-2017《结构用冷弯空心型钢》、GB/T 6725-2017《冷弯型钢通用技术要求》并根据产品特点及用户要求制定。

本标准由中国钢结构协会钢材标准化技术委员会提出并归口。

本标准主要起草单位：天津源泰德润钢管制造集团有限公司、冶金工业规划研究院、中国国机重工集团有限公司、五矿钢铁杭州有限公司、、。

本标准主要起草人：

机械结构用方矩管

1. 范围

本标准规定了机械结构用方矩管的订货内容、分类及代号、尺寸、外形、重量及允许偏差、技术要求、试验方法、检验规则、包装、标志和质量证明书。

本标准适用于冷轧或热轧钢板和钢带在连续辊式冷弯机组上生产的用于机械、汽车、自行车、家具及其他机械部件与结构件的方形管和矩形管（以下简称方矩管）。不适用于拉拔、冲压、折弯等方式生产的方矩管。

本标准所规定的方矩管主要采用高频电阻焊接方式，其他焊接方法也可采用。

1. 规范性引用文件

下列文件对于本文件的应用是必不可少的。凡是注日期的引用文件，仅注日期的版本适用于本文件。凡是不注日期的引用文件，其最新版本（包括所有的修改单）适用于本文件。

GB/T 221 钢铁产品牌号表示方法

GB/T 222 钢的成品化学成分允许偏差

GB/T 228.1 金属材料 拉伸试验第1部分：室温拉伸试验方法

GB/T 229 金属材料 夏比摆锤冲击试验方法

GB/T 699 优质碳素结构钢

GB/T 700 碳素结构钢

GB/T 1591 低合金高强度结构钢

GB/T 2101 型钢验收、包装、标志及质量证明书的一般规定

GB/T 2650 焊接接头冲击试验方法

GB/T 2651 焊接接头拉伸试验方法

GB/T 2975 钢及钢产品 力学性能试验取样位置及试样制备

GB/T 3524 碳素结构钢和低合金结构钢热轧钢带

GB/T 6728 结构用冷弯空心型钢

GB/T 17505 钢及钢产品交货一般技术要求

GB/T 33162 冷弯型钢用钢板及钢带

1. 订货内容

按本标准订货的合同或订单应包括下列内容：

1. 标准编号；
2. 产品名称；
3. 尺寸与外形；
4. 原料牌号及对应产品屈服强度等级；
5. 交货重量（或数量）及交货长度；
6. 其他特殊要求。
7. 分类及代号
   1. 按产品截面形状分类和代号

按横截面形状分为方形管和矩形管。其代号为：

1. 方形管，简称为方管，代号：F；
2. 矩形管，简称为矩管，代号：J。
   1. 按屈服强度等级分类

按屈服强度等级分类通常分为：Q195、Q215、Q235、Q345、Q390、Q420、Q460、Q500、Q550、Q620、Q690、Q750。

1. 截面、尺寸、外形、重量及允许偏差
   1. 截面、尺寸及允许偏差
      1. 方形管的截面尺寸、允许偏差、截面面积、理论重量及截面特性应符合表1中的规定。
      2. 矩形管的截面尺寸、允许偏差、截面面积、理论重量及截面特性应符合表2中的规定。
2. 方形管的截面尺寸、允许偏差、截面面积、理论重量及截面特性

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 边长 mm | 尺寸允许偏差 mm | 壁厚 mm | 理论重量kg/m | 截面面积cm2 | 惯性矩 | 惯性半径 | 截面模数 | 扭转常数 | |
| B | ±△ | t | M | A | Ix=Iy | rx=ry | wx=wy | It cm4 | Ct cm3 |
| 20 | ±0.3 | 1.0 | 0.612 | 0.780 | 0.434 | 0.75 | 0.434 | 0.705 | 0.65 |
| 20 | ±0.3 | 1.2 | 0.731 | 0.931 | 0.498 | 0.73 | 0.498 | 0.823 | 0.75 |
| 20 | ±0.3 | 1.5 | 0.907 | 1.155 | 0.583 | 0.71 | 0.583 | 0.985 | 0.88 |
| 20 | ±0.3 | 1.7 | 1.022 | 1.302 | 0.631 | 0.70 | 0.631 | 1.083 | 0.96 |
| 20 | ±0.3 | 2.0 | 1.193 | 1.520 | 0.692 | 0.67 | 0.692 | 1.215 | 1.06 |
| 25 | ±0.3 | 1.0 | 0.769 | 0.980 | 0.884 | 0.95 | 0.707 | 1.414 | 1.06 |
| 25 | ±0.3 | 1.2 | 0.919 | 1.171 | 1.025 | 0.94 | 0.820 | 1.661 | 1.24 |
| 25 | ±0.3 | 1.5 | 1.142 | 1.455 | 1.217 | 0.91 | 0.973 | 2.008 | 1.47 |
| 25 | ±0.3 | 1.7 | 1.289 | 1.642 | 1.331 | 0.90 | 1.065 | 2.225 | 1.61 |
| 25 | ±0.3 | 2.0 | 1.507 | 1.920 | 1.483 | 0.88 | 1.187 | 2.526 | 1.80 |
| 25 | ±0.3 | 2.5 | 1.864 | 2.375 | 1.690 | 0.84 | 1.352 | 2.966 | 2.07 |
| 30 | ±0.4 | 1.5 | 1.378 | 1.755 | 2.196 | 1.12 | 1.464 | 3.568 | 2.21 |
| 30 | ±0.4 | 1.7 | 1.556 | 1.982 | 2.418 | 1.10 | 1.612 | 3.970 | 2.43 |
| 30 | ±0.4 | 2.0 | 1.821 | 2.320 | 2.722 | 1.08 | 1.815 | 4.540 | 2.75 |
| 30 | ±0.4 | 2.5 | 2.257 | 2.875 | 3.156 | 1.05 | 2.104 | 5.401 | 3.20 |
| 30 | ±0.4 | 3.0 | 2.685 | 3.420 | 3.504 | 1.01 | 2.336 | 6.150 | 3.58 |
| 30 | ±0.4 | 3.5 | 3.105 | 3.955 | 3.773 | 0.98 | 2.515 | 6.786 | 3.88 |
| 40 | ±0.4 | 1.5 | 1.849 | 2.355 | 5.490 | 1.53 | 2.745 | 8.746 | 4.13 |
| 40 | ±0.4 | 1.7 | 2.090 | 2.662 | 6.092 | 1.51 | 3.046 | 9.782 | 4.58 |
| 40 | ±0.4 | 2.0 | 2.449 | 3.120 | 6.940 | 1.49 | 3.470 | 11.28 | 5.23 |
| 40 | ±0.4 | 2.5 | 3.042 | 3.875 | 8.215 | 1.46 | 4.108 | 13.61 | 6.21 |
| 40 | ±0.4 | 3.0 | 3.627 | 4.620 | 9.324 | 1.42 | 4.662 | 15.75 | 7.07 |
| 40 | ±0.4 | 4.0 | 4.773 | 6.080 | 11.07 | 1.35 | 5.537 | 19.44 | 8.48 |
| 50 | ±0.4 | 1.5 | 2.320 | 2.955 | 11.07 | 1.94 | 4.426 | 17.42 | 6.65 |
| 50 | ±0.4 | 1.7 | 2.624 | 3.342 | 12.33 | 1.92 | 4.933 | 19.54 | 7.41 |
| 50 | ±0.4 | 2.0 | 3.077 | 3.920 | 14.15 | 1.90 | 5.659 | 22.63 | 8.51 |
| 50 | ±0.4 | 2.5 | 3.827 | 4.875 | 16.94 | 1.86 | 6.778 | 27.53 | 10.22 |
| 50 | ±0.4 | 3.0 | 4.569 | 5.820 | 19.47 | 1.83 | 7.787 | 32.13 | 11.76 |
| 50 | ±0.4 | 4.0 | 6.029 | 7.680 | 23.74 | 1.76 | 9.494 | 40.42 | 14.43 |
| 50 | ±0.4 | 5.0 | 7.458 | 9.500 | 27.04 | 1.69 | 10.815 | 47.46 | 16.56 |
| 60 | ±0.6 | 1.5 | 2.791 | 3.555 | 19.52 | 2.34 | 6.507 | 30.48 | 9.77 |
| 60 | ±0.6 | 1.7 | 3.157 | 4.022 | 21.82 | 2.33 | 7.274 | 34.26 | 10.92 |
| 60 | ±0.6 | 2.0 | 3.705 | 4.720 | 25.14 | 2.31 | 8.381 | 39.79 | 12.59 |
| 60 | ±0.6 | 2.5 | 4.612 | 5.875 | 30.34 | 2.27 | 10.11 | 48.66 | 15.22 |
| 60 | ±0.6 | 3.0 | 5.511 | 7.020 | 35.13 | 2.24 | 11.71 | 57.09 | 17.65 |
| 60 | ±0.6 | 4.0 | 7.285 | 9.280 | 43.55 | 2.17 | 14.52 | 72.64 | 21.97 |
| 60 | ±0.6 | 5.0 | 9.028 | 11.500 | 50.49 | 2.10 | 16.83 | 86.42 | 25.61 |
| 60 | ±0.6 | 6.0 | 10.739 | 13.680 | 56.07 | 2.02 | 18.69 | 98.41 | 28.62 |
| 70 | ±0.6 | 1.5 | 3.262 | 4.155 | 31.46 | 2.75 | 8.99 | 48.84 | 13.49 |
| 70 | ±0.6 | 1.7 | 3.691 | 4.702 | 35.24 | 2.74 | 10.07 | 54.96 | 15.11 |
| 70 | ±0.6 | 2.0 | 4.333 | 5.520 | 40.73 | 2.72 | 11.64 | 63.96 | 17.48 |
| 70 | ±0.6 | 2.5 | 5.397 | 6.875 | 49.41 | 2.68 | 14.12 | 78.49 | 21.22 |
| 70 | ±0.6 | 3.0 | 6.453 | 8.220 | 57.53 | 2.65 | 16.44 | 92.42 | 24.74 |
| 70 | ±0.6 | 4.0 | 8.541 | 10.880 | 72.12 | 2.57 | 20.61 | 118.5 | 31.11 |
| 70 | ±0.6 | 5.0 | 10.598 | 13.500 | 84.63 | 2.50 | 24.18 | 142.2 | 36.65 |
| 70 | ±0.6 | 6.0 | 12.623 | 16.080 | 95.17 | 2.43 | 27.19 | 163.5 | 41.41 |
| 80 | ±0.6 | 2.0 | 4.961 | 6.320 | 61.70 | 3.12 | 15.42 | 96.34 | 23.16 |
| 80 | ±0.6 | 2.5 | 6.182 | 7.875 | 75.15 | 3.09 | 18.79 | 118.5 | 28.22 |
| 80 | ±0.6 | 3.0 | 7.395 | 9.420 | 87.84 | 3.05 | 21.96 | 139.9 | 33.02 |
| 80 | ±0.6 | 4.0 | 9.797 | 12.480 | 111.0 | 2.98 | 27.76 | 180.4 | 41.84 |
| 80 | ±0.6 | 5.0 | 12.168 | 15.500 | 131.4 | 2.91 | 32.86 | 217.8 | 49.68 |
| 80 | ±0.6 | 6.0 | 14.507 | 18.480 | 149.2 | 2.84 | 37.29 | 252.1 | 56.59 |
| 80 | ±0.6 | 7.0 | 16.815 | 21.420 | 157.6 | 2.71 | 39.40 | 281.4 | 61.81 |
| 90 | ±0.75 | 2.0 | 5.589 | 7.120 | 88.86 | 3.53 | 19.75 | 138.1 | 29.64 |
| 90 | ±0.75 | 2.5 | 6.967 | 8.875 | 108.6 | 3.50 | 24.12 | 170.3 | 36.23 |
| 90 | ±0.75 | 3.0 | 8.337 | 10.620 | 127.3 | 3.46 | 28.29 | 201.4 | 42.51 |
| 90 | ±0.75 | 4.0 | 11.053 | 14.080 | 161.9 | 3.39 | 35.98 | 260.8 | 54.17 |
| 90 | ±0.75 | 5.0 | 13.738 | 17.500 | 192.9 | 3.32 | 42.87 | 316.3 | 64.70 |
| 90 | ±0.75 | 6.0 | 16.391 | 20.880 | 220.5 | 3.25 | 48.99 | 367.8 | 74.16 |
| 90 | ±0.75 | 7.0 | 19.013 | 24.220 | 236.1 | 3.12 | 52.47 | 414.2 | 81.78 |
| 100 | ±0.75 | 2.5 | 7.752 | 9.875 | 150.6 | 3.91 | 30.13 | 235.2 | 45.23 |
| 100 | ±0.75 | 3.0 | 9.279 | 11.820 | 177.0 | 3.87 | 35.41 | 278.7 | 53.19 |
| 100 | ±0.75 | 4.0 | 12.309 | 15.680 | 226.4 | 3.80 | 45.27 | 362.0 | 68.10 |
| 100 | ±0.75 | 5.0 | 15.308 | 19.500 | 271.1 | 3.73 | 54.22 | 440.5 | 81.72 |
| 100 | ±0.75 | 6.0 | 18.275 | 23.280 | 311.5 | 3.66 | 62.29 | 514.2 | 94.12 |
| 100 | ±0.75 | 7.0 | 21.211 | 27.020 | 337.0 | 3.53 | 67.41 | 582.7 | 104.5 |
| 100 | ±0.75 | 8.0 | 22.608 | 28.800 | 365.9 | 3.56 | 73.19 | 644.5 | 114.2 |
| 100 | ±0.75 | 9.0 | 25.081 | 31.950 | 390.6 | 3.50 | 78.11 | 700.3 | 122.7 |
| 100 | ±0.75 | 10.0 | 27.475 | 35.000 | 411.1 | 3.43 | 82.22 | 749.8 | 130.1 |
| 100 | ±0.75 | 11.0 | 29.791 | 37.950 | 400.4 | 3.25 | 80.08 | 767.2 | 132.0 |
| 100 | ±0.75 | 12.0 | 32.028 | 40.800 | 408.1 | 3.16 | 81.61 | 793.6 | 135.9 |
| 110 | ±0.9 | 2.5 | 8.537 | 10.875 | 202.4 | 4.31 | 36.80 | 314.9 | 55.23 |
| 110 | ±0.9 | 3.0 | 10.221 | 13.020 | 238.3 | 4.28 | 43.33 | 373.5 | 65.07 |
| 110 | ±0.9 | 4.0 | 13.565 | 17.280 | 305.9 | 4.21 | 55.62 | 486.5 | 83.63 |
| 110 | ±0.9 | 5.0 | 16.878 | 21.500 | 367.9 | 4.14 | 66.90 | 593.6 | 100.7 |
| 110 | ±0.9 | 6.0 | 20.159 | 25.680 | 424.6 | 4.07 | 77.19 | 694.9 | 116.5 |
| 110 | ±0.9 | 7.0 | 23.409 | 29.820 | 463.2 | 3.94 | 84.21 | 791.2 | 130.1 |
| 110 | ±0.9 | 8.0 | 25.120 | 32.000 | 505.6 | 3.98 | 91.93 | 878.7 | 142.8 |
| 110 | ±0.9 | 9.0 | 27.907 | 35.550 | 542.8 | 3.91 | 98.69 | 959.1 | 154.2 |
| 110 | ±0.9 | 10.0 | 30.615 | 39.000 | 574.8 | 3.84 | 104.5 | 1032 | 164.3 |
| 110 | ±0.9 | 11.0 | 33.245 | 42.350 | 568.9 | 3.67 | 103.4 | 1072 | 168.9 |
| 110 | ±0.9 | 12.0 | 35.796 | 45.600 | 584.9 | 3.58 | 106.3 | 1119 | 175.2 |
| 120 | ±0.9 | 3.0 | 11.163 | 14.220 | 312.3 | 4.69 | 52.06 | 487.7 | 78.15 |
| 120 | ±0.9 | 4.0 | 14.821 | 18.880 | 402.3 | 4.62 | 67.05 | 636.6 | 100.8 |
| 120 | ±0.9 | 5.0 | 18.448 | 23.500 | 485.5 | 4.55 | 80.91 | 778.5 | 121.8 |
| 120 | ±0.9 | 6.0 | 22.043 | 28.080 | 562.2 | 4.47 | 93.69 | 913.5 | 141.2 |
| 120 | ±0.9 | 7.0 | 25.607 | 32.620 | 617.3 | 4.35 | 102.9 | 1044 | 158.4 |
| 120 | ±0.9 | 8.0 | 27.632 | 35.200 | 676.9 | 4.39 | 112.8 | 1163 | 174.6 |
| 120 | ±0.9 | 9.0 | 30.733 | 39.150 | 730.0 | 4.32 | 121.7 | 1274 | 189.3 |
| 120 | ±0.9 | 10.0 | 33.755 | 43.000 | 776.8 | 4.25 | 129.5 | 1376 | 202.5 |
| 120 | ±0.9 | 11.0 | 36.699 | 46.750 | 778.3 | 4.08 | 129.7 | 1445 | 210.1 |
| 120 | ±0.9 | 12.0 | 39.564 | 50.400 | 805.7 | 4.00 | 134.3 | 1518 | 219.3 |
| 130 | ±1.0 | 3.0 | 12.105 | 15.420 | 400.3 | 5.09 | 61.6 | 623.1 | 92.43 |
| 130 | ±1.0 | 4.0 | 16.077 | 20.480 | 517.0 | 5.02 | 79.5 | 814.7 | 119.5 |
| 130 | ±1.0 | 5.0 | 20.018 | 25.500 | 625.7 | 4.95 | 96.3 | 998.2 | 144.8 |
| 130 | ±1.0 | 6.0 | 23.927 | 30.480 | 726.6 | 4.88 | 111.8 | 1174 | 168.4 |
| 130 | ±1.0 | 7.0 | 27.805 | 35.420 | 802.2 | 4.76 | 123.4 | 1345 | 189.5 |
| 130 | ±1.0 | 8.0 | 30.144 | 38.400 | 882.9 | 4.79 | 135.8 | 1502 | 209.5 |
| 130 | ±1.0 | 9.0 | 33.559 | 42.750 | 955.8 | 4.73 | 147.0 | 1650 | 227.9 |
| 130 | ±1.0 | 10.0 | 36.895 | 47.000 | 1021 | 4.66 | 157.1 | 1788 | 244.7 |
| 130 | ±1.0 | 11.0 | 40.153 | 51.150 | 1033 | 4.49 | 158.9 | 1892 | 255.7 |
| 130 | ±1.0 | 12.0 | 43.332 | 55.200 | 1075 | 4.41 | 165.4 | 1999 | 268.1 |
| 140 | ±1.1 | 3.0 | 13.047 | 16.620 | 503.3 | 5.50 | 71.91 | 781.5 | 107.9 |
| 140 | ±1.1 | 4.0 | 17.333 | 22.080 | 651.6 | 5.43 | 93.09 | 1023 | 139.8 |
| 140 | ±1.1 | 5.0 | 21.588 | 27.500 | 790.6 | 5.36 | 112.9 | 1256 | 169.8 |
| 140 | ±1.1 | 6.0 | 25.811 | 32.880 | 920.4 | 5.29 | 131.5 | 1479 | 197.9 |
| 140 | ±1.1 | 7.0 | 30.003 | 38.220 | 1021 | 5.17 | 145.8 | 1698 | 223.5 |
| 140 | ±1.1 | 8.0 | 32.656 | 41.600 | 1127 | 5.20 | 161.0 | 1901 | 247.7 |
| 140 | ±1.1 | 9.0 | 36.385 | 46.350 | 1224 | 5.14 | 174.8 | 2093 | 270.1 |
| 140 | ±1.1 | 10.0 | 40.035 | 51.000 | 1312 | 5.07 | 187.4 | 2274 | 290.8 |
| 140 | ±1.1 | 11.0 | 43.607 | 55.550 | 1338 | 4.91 | 191.1 | 2421 | 305.6 |
| 140 | ±1.1 | 12.0 | 47.100 | 60.000 | 1398 | 4.83 | 199.8 | 2567 | 321.7 |
| 150 | ±1.1 | 3.0 | 13.989 | 17.820 | 622.7 | 5.91 | 83.03 | 964.6 | 124.6 |
| 150 | ±1.1 | 4.0 | 18.589 | 23.680 | 807.8 | 5.84 | 107.7 | 1265 | 161.7 |
| 150 | ±1.1 | 5.0 | 23.158 | 29.500 | 982.1 | 5.77 | 130.9 | 1554 | 196.8 |
| 150 | ±1.1 | 6.0 | 27.695 | 35.280 | 1146 | 5.70 | 152.8 | 1833 | 229.8 |
| 150 | ±1.1 | 7.0 | 32.201 | 41.020 | 1276 | 5.58 | 170.1 | 2108 | 260.2 |
| 150 | ±1.1 | 8.0 | 35.168 | 44.800 | 1412 | 5.61 | 188.2 | 2364 | 289.0 |
| 150 | ±1.1 | 9.0 | 39.211 | 49.950 | 1537 | 5.55 | 205.0 | 2608 | 315.9 |
| 150 | ±1.1 | 10.0 | 43.175 | 55.000 | 1653 | 5.48 | 220.3 | 2839 | 341.0 |
| 150 | ±1.1 | 11.0 | 47.061 | 59.950 | 1696 | 5.32 | 226.2 | 3038 | 359.9 |
| 150 | ±1.1 | 12.0 | 50.868 | 64.800 | 1780 | 5.24 | 237.3 | 3231 | 380.0 |
| 160 | ±1.2 | 3.0 | 14.931 | 19.020 | 759.6 | 6.32 | 94.95 | 1174 | 142.5 |
| 160 | ±1.2 | 4.0 | 19.845 | 25.280 | 987.2 | 6.25 | 123.4 | 1541 | 185.3 |
| 160 | ±1.2 | 5.0 | 24.728 | 31.500 | 1202 | 6.18 | 150.3 | 1896 | 225.8 |
| 160 | ±1.2 | 6.0 | 29.579 | 37.680 | 1405 | 6.11 | 175.7 | 2239 | 264.2 |
| 160 | ±1.2 | 7.0 | 34.399 | 43.820 | 1570 | 5.99 | 196.2 | 2579 | 299.7 |
| 160 | ±1.2 | 8.0 | 37.680 | 48.000 | 1741 | 6.02 | 217.7 | 2897 | 333.6 |
| 160 | ±1.2 | 9.0 | 42.037 | 53.550 | 1900 | 5.96 | 237.6 | 3200 | 365.3 |
| 160 | ±1.2 | 10.0 | 46.315 | 59.000 | 2048 | 5.89 | 256.0 | 3490 | 395.1 |
| 160 | ±1.2 | 11.0 | 50.515 | 64.350 | 2114 | 5.73 | 264.2 | 3748 | 418.6 |
| 160 | ±1.2 | 12.0 | 54.636 | 69.600 | 2224 | 5.65 | 278.0 | 3997 | 443.1 |
| 160 | ±1.2 | 13.0 | 58.679 | 74.750 | 2323 | 5.57 | 290.3 | 4227 | 465.5 |
| 160 | ±1.2 | 14.0 | 62.643 | 79.800 | 2409 | 5.49 | 301.1 | 4437 | 485.7 |
| 160 | ±1.2 | 15.0 | 66.529 | 84.750 | 2483 | 5.41 | 310.4 | 4628 | 503.8 |
| 160 | ±1.2 | 16.0 | 70.336 | 89.600 | 2546 | 5.33 | 318.3 | 4799 | 519.7 |
| 170 | ±1.3 | 3.0 | 15.873 | 20.220 | 915.3 | 6.73 | 107.7 | 1412 | 161.6 |
| 170 | ±1.3 | 4.0 | 21.101 | 26.880 | 1191 | 6.66 | 140.2 | 1856 | 210.4 |
| 170 | ±1.3 | 5.0 | 26.298 | 33.500 | 1453 | 6.59 | 171.0 | 2285 | 256.8 |
| 170 | ±1.3 | 6.0 | 31.463 | 40.080 | 1702 | 6.52 | 200.2 | 2701 | 300.9 |
| 170 | ±1.3 | 7.0 | 36.597 | 46.620 | 1906 | 6.39 | 224.2 | 3115 | 342.0 |
| 170 | ±1.3 | 8.0 | 40.192 | 51.200 | 2118 | 6.43 | 249.2 | 3503 | 381.3 |
| 170 | ±1.3 | 9.0 | 44.863 | 57.150 | 2317 | 6.37 | 272.5 | 3876 | 418.3 |
| 170 | ±1.3 | 10.0 | 49.455 | 63.000 | 2501 | 6.30 | 294.2 | 4233 | 453.2 |
| 170 | ±1.3 | 11.0 | 53.969 | 68.750 | 2594 | 6.14 | 305.2 | 4560 | 481.7 |
| 170 | ±1.3 | 12.0 | 58.404 | 74.400 | 2737 | 6.07 | 322.0 | 4873 | 511.0 |
| 170 | ±1.3 | 13.0 | 62.761 | 79.950 | 2866 | 5.99 | 337.1 | 5165 | 538.1 |
| 170 | ±1.3 | 14.0 | 67.039 | 85.400 | 2981 | 5.91 | 350.7 | 5436 | 562.8 |
| 170 | ±1.3 | 15.0 | 71.239 | 90.750 | 3082 | 5.83 | 362.6 | 5685 | 585.3 |
| 170 | ±1.3 | 16.0 | 75.360 | 96.000 | 3170 | 5.75 | 372.9 | 5912 | 605.5 |
| 180 | ±1.3 | 3.0 | 16.815 | 21.420 | 1091 | 7.14 | 121.2 | 1681 | 181.8 |
| 180 | ±1.3 | 4.0 | 22.357 | 28.480 | 1422 | 7.07 | 158.0 | 2210 | 237.1 |
| 180 | ±1.3 | 5.0 | 27.868 | 35.500 | 1737 | 6.99 | 193.0 | 2724 | 289.8 |
| 180 | ±1.3 | 6.0 | 33.347 | 42.480 | 2037 | 6.92 | 226.3 | 3223 | 340.0 |
| 180 | ±1.3 | 7.0 | 38.795 | 49.420 | 2287 | 6.80 | 254.1 | 3720 | 387.1 |
| 180 | ±1.3 | 8.0 | 42.704 | 54.400 | 2546 | 6.84 | 282.9 | 4189 | 432.2 |
| 180 | ±1.3 | 9.0 | 47.689 | 60.750 | 2789 | 6.78 | 309.9 | 4640 | 474.9 |
| 180 | ±1.3 | 10.0 | 52.595 | 67.000 | 3017 | 6.71 | 335.2 | 5074 | 515.3 |
| 180 | ±1.3 | 11.0 | 57.423 | 73.150 | 3142 | 6.55 | 349.1 | 5480 | 549.2 |
| 180 | ±1.3 | 12.0 | 62.172 | 79.200 | 3322 | 6.48 | 369.1 | 5865 | 583.7 |
| 180 | ±1.3 | 13.0 | 66.843 | 85.150 | 3487 | 6.40 | 387.4 | 6229 | 615.8 |
| 180 | ±1.3 | 14.0 | 71.435 | 91.000 | 3635 | 6.32 | 403.9 | 6569 | 645.5 |
| 180 | ±1.3 | 15.0 | 75.949 | 96.750 | 3769 | 6.24 | 418.7 | 6886 | 672.7 |
| 180 | ±1.3 | 16.0 | 80.384 | 102.400 | 3887 | 6.16 | 431.9 | 7178 | 697.5 |
| 190 | ±1.5 | 3.0 | 17.757 | 22.620 | 1288 | 7.54 | 135.5 | 1981 | 203.3 |
| 190 | ±1.5 | 4.0 | 23.613 | 30.080 | 1680 | 7.47 | 176.9 | 2607 | 265.4 |
| 190 | ±1.5 | 5.0 | 29.438 | 37.500 | 2055 | 7.40 | 216.3 | 3216 | 324.8 |
| 190 | ±1.5 | 6.0 | 35.231 | 44.880 | 2413 | 7.33 | 254.0 | 3807 | 381.6 |
| 190 | ±1.5 | 7.0 | 40.993 | 52.220 | 2715 | 7.21 | 285.8 | 4399 | 435.0 |
| 190 | ±1.5 | 8.0 | 45.216 | 57.600 | 3027 | 7.25 | 318.7 | 4958 | 486.3 |
| 190 | ±1.5 | 9.0 | 50.515 | 64.350 | 3322 | 7.18 | 349.7 | 5497 | 535.1 |
| 190 | ±1.5 | 10.0 | 55.735 | 71.000 | 3599 | 7.12 | 378.8 | 6018 | 581.4 |
| 190 | ±1.5 | 11.0 | 60.877 | 77.550 | 3761 | 6.96 | 395.9 | 6513 | 621.0 |
| 190 | ±1.5 | 12.0 | 65.940 | 84.000 | 3985 | 6.89 | 419.5 | 6982 | 661.2 |
| 190 | ±1.5 | 13.0 | 70.925 | 90.350 | 4191 | 6.81 | 441.1 | 7427 | 698.7 |
| 190 | ±1.5 | 14.0 | 75.831 | 96.600 | 4379 | 6.73 | 460.9 | 7847 | 733.7 |
| 190 | ±1.5 | 15.0 | 80.659 | 102.750 | 4550 | 6.65 | 478.9 | 8241 | 766.1 |
| 190 | ±1.5 | 16.0 | 85.408 | 108.800 | 4703 | 6.57 | 495.0 | 8608 | 796.0 |
| 200 | ±1.5 | 3.0 | 18.699 | 23.820 | 1507 | 7.95 | 150.7 | 2315 | 226.0 |
| 200 | ±1.5 | 4.0 | 24.869 | 31.680 | 1968 | 7.88 | 196.8 | 3049 | 295.3 |
| 200 | ±1.5 | 5.0 | 31.008 | 39.500 | 2410 | 7.81 | 241.0 | 3763 | 361.8 |
| 200 | ±1.5 | 6.0 | 37.115 | 47.280 | 2833 | 7.74 | 283.3 | 4459 | 425.5 |
| 200 | ±1.5 | 7.0 | 43.191 | 55.020 | 3194 | 7.62 | 319.4 | 5156 | 485.7 |
| 200 | ±1.5 | 8.0 | 47.728 | 60.800 | 3566 | 7.66 | 356.6 | 5815 | 543.6 |
| 200 | ±1.5 | 9.0 | 53.341 | 67.950 | 3918 | 7.59 | 391.8 | 6454 | 598.9 |
| 200 | ±1.5 | 10.0 | 58.875 | 75.000 | 4251 | 7.53 | 425.1 | 7072 | 651.5 |
| 200 | ±1.5 | 11.0 | 64.331 | 81.950 | 4457 | 7.37 | 445.7 | 7667 | 697.3 |
| 200 | ±1.5 | 12.0 | 69.708 | 88.800 | 4730 | 7.30 | 473.0 | 8230 | 743.4 |
| 200 | ±1.5 | 13.0 | 75.007 | 95.550 | 4984 | 7.22 | 498.4 | 8767 | 786.8 |
| 200 | ±1.5 | 14.0 | 80.227 | 102.200 | 5217 | 7.14 | 521.7 | 9276 | 827.5 |
| 200 | ±1.5 | 15.0 | 85.369 | 108.750 | 5431 | 7.07 | 543.1 | 9758 | 865.5 |
| 200 | ±1.5 | 16.0 | 90.432 | 115.200 | 5625 | 6.99 | 562.5 | 10210 | 900.8 |
| 250 | ±1.8 | 4.0 | 30.772 | 39.200 | 3907 | 9.98 | 312.6 | 6014 | 468.9 |
| 250 | ±1.8 | 5.0 | 38.269 | 48.750 | 4805 | 9.93 | 384.4 | 7443 | 576.8 |
| 250 | ±1.8 | 6.0 | 45.687 | 58.200 | 5672 | 9.87 | 453.8 | 8843 | 681.1 |
| 250 | ±1.8 | 7.0 | 53.027 | 67.550 | 6443 | 9.77 | 515.4 | 10251 | 781.2 |
| 250 | ±1.8 | 8.0 | 60.288 | 76.800 | 7229 | 9.70 | 578.3 | 11598 | 878.2 |
| 250 | ±1.8 | 9.0 | 67.471 | 85.950 | 7984 | 9.64 | 638.7 | 12913 | 971.7 |
| 250 | ±1.8 | 10.0 | 74.575 | 95.000 | 8707 | 9.57 | 696.5 | 14197 | 1062 |
| 250 | ±1.8 | 11.0 | 81.601 | 103.950 | 9231 | 9.42 | 738.5 | 15481 | 1144 |
| 250 | ±1.8 | 12.0 | 88.548 | 112.800 | 9859 | 9.35 | 788.8 | 16691 | 1226 |
| 250 | ±1.8 | 13.0 | 95.417 | 121.550 | 10455 | 9.27 | 836.4 | 17864 | 1305 |
| 250 | ±1.8 | 14.0 | 102.207 | 130.200 | 11018 | 9.20 | 881.4 | 18999 | 1380 |
| 250 | ±1.8 | 15.0 | 108.919 | 138.750 | 11548 | 9.12 | 923.9 | 20093 | 1452 |
| 250 | ±1.8 | 16.0 | 115.552 | 147.200 | 12047 | 9.05 | 963.8 | 21146 | 1520 |
| 250 | ±1.8 | 17.0 | 122.107 | 155.550 | 12515 | 8.97 | 1001 | 22157 | 1585 |
| 250 | ±1.8 | 18.0 | 128.583 | 163.800 | 12951 | 8.89 | 1036 | 23125 | 1647 |
| 300 | ±2.2 | 5.0 | 46.119 | 58.750 | 8417 | 12.0 | 561.1 | 12968 | 841.9 |
| 300 | ±2.2 | 6.0 | 55.107 | 70.200 | 9964 | 11.9 | 664.2 | 15434 | 996.8 |
| 300 | ±2.2 | 7.0 | 64.017 | 81.550 | 11371 | 11.8 | 758.1 | 17919 | 1147 |
| 300 | ±2.2 | 8.0 | 72.848 | 92.800 | 12801 | 11.7 | 853.4 | 20312 | 1293 |
| 300 | ±2.2 | 9.0 | 81.601 | 103.950 | 14183 | 11.7 | 945.6 | 22661 | 1434 |
| 300 | ±2.2 | 10.0 | 90.275 | 115.000 | 15519 | 11.6 | 1035 | 24966 | 1572 |
| 300 | ±2.2 | 11.0 | 98.871 | 125.950 | 16569 | 11.5 | 1105 | 27302 | 1701 |
| 300 | ±2.2 | 12.0 | 107.388 | 136.800 | 17767 | 11.4 | 1184 | 29514 | 1829 |
| 300 | ±2.2 | 13.0 | 115.827 | 147.550 | 18917 | 11.3 | 1261 | 31675 | 1953 |
| 300 | ±2.2 | 14.0 | 124.187 | 158.200 | 20018 | 11.2 | 1335 | 33783 | 2073 |
| 300 | ±2.2 | 15.0 | 132.469 | 168.750 | 21071 | 11.2 | 1405 | 35837 | 2188 |
| 300 | ±2.2 | 16.0 | 140.672 | 179.200 | 22076 | 11.1 | 1472 | 37837 | 2299 |
| 300 | ±2.2 | 17.0 | 148.797 | 189.550 | 23035 | 11.0 | 1536 | 39780 | 2406 |
| 300 | ±2.2 | 18.0 | 156.843 | 199.800 | 23947 | 10.9 | 1596 | 41665 | 2509 |
| 350 | ±2.2 | 5.0 | 53.969 | 68.750 | 13496 | 14.0 | 771.2 | 20714 | 1157 |
| 350 | ±2.2 | 6.0 | 64.527 | 82.200 | 16008 | 14.0 | 914.7 | 24683 | 1372 |
| 350 | ±2.2 | 7.0 | 75.007 | 95.550 | 18329 | 13.9 | 1047 | 28684 | 1582 |
| 350 | ±2.2 | 8.0 | 85.408 | 108.800 | 20681 | 13.8 | 1182 | 32557 | 1787 |
| 350 | ±2.2 | 9.0 | 95.731 | 121.950 | 22967 | 13.7 | 1312 | 36372 | 1987 |
| 350 | ±2.2 | 10.0 | 105.975 | 135.000 | 25189 | 13.7 | 1439 | 40127 | 2182 |
| 350 | ±2.2 | 11.0 | 116.141 | 147.950 | 27021 | 13.5 | 1544 | 43958 | 2368 |
| 350 | ±2.2 | 12.0 | 126.228 | 160.800 | 29054 | 13.4 | 1660 | 47598 | 2552 |
| 350 | ±2.2 | 13.0 | 136.237 | 173.550 | 31019 | 13.4 | 1773 | 51172 | 2731 |
| 350 | ±2.2 | 14.0 | 146.167 | 186.200 | 32916 | 13.3 | 1881 | 54678 | 2905 |
| 350 | ±2.2 | 15.0 | 156.019 | 198.750 | 34747 | 13.2 | 1986 | 58115 | 3074 |
| 350 | ±2.2 | 16.0 | 165.792 | 211.200 | 36511 | 13.1 | 2086 | 61481 | 3238 |
| 350 | ±2.2 | 17.0 | 175.487 | 223.550 | 38211 | 13.1 | 2183 | 64774 | 3397 |
| 350 | ±2.2 | 18.0 | 185.103 | 235.800 | 39845 | 13.0 | 2277 | 67993 | 3551 |
| 400 | ±2.7 | 5.0 | 61.819 | 78.750 | 20291 | 16.1 | 1015 | 31055 | 1522 |
| 400 | ±2.7 | 6.0 | 73.947 | 94.200 | 24104 | 16.0 | 1205 | 37039 | 1808 |
| 400 | ±2.7 | 7.0 | 85.997 | 109.550 | 27668 | 15.9 | 1383 | 43072 | 2088 |
| 400 | ±2.7 | 8.0 | 97.968 | 124.800 | 31269 | 15.8 | 1563 | 48934 | 2362 |
| 400 | ±2.7 | 9.0 | 109.861 | 139.950 | 34785 | 15.8 | 1739 | 54721 | 2630 |
| 400 | ±2.7 | 10.0 | 121.675 | 155.000 | 38216 | 15.7 | 1911 | 60431 | 2892 |
| 400 | ±2.7 | 11.0 | 133.411 | 169.950 | 41138 | 15.6 | 2057 | 66272 | 3145 |
| 400 | ±2.7 | 12.0 | 145.068 | 184.800 | 44319 | 15.5 | 2216 | 71843 | 3395 |
| 400 | ±2.7 | 13.0 | 156.647 | 199.550 | 47411 | 15.4 | 2371 | 77332 | 3639 |
| 400 | ±2.7 | 14.0 | 168.147 | 214.200 | 50414 | 15.3 | 2521 | 82735 | 3877 |
| 400 | ±2.7 | 15.0 | 179.569 | 228.750 | 53328 | 15.3 | 2666 | 88051 | 4110 |
| 400 | ±2.7 | 16.0 | 190.912 | 243.200 | 56154 | 15.2 | 2808 | 93279 | 4336 |
| 400 | ±2.7 | 17.0 | 202.177 | 257.550 | 58893 | 15.1 | 2945 | 98416 | 4557 |
| 400 | ±2.7 | 18.0 | 213.363 | 271.800 | 61545 | 15.0 | 3077 | 103460 | 4773 |
| 450 | ±2.9 | 5.0 | 69.669 | 88.750 | 29054 | 18.1 | 1291 | 44367 | 1937 |
| 450 | ±2.9 | 6.0 | 83.367 | 106.200 | 34553 | 18.0 | 1536 | 52953 | 2304 |
| 450 | ±2.9 | 7.0 | 96.987 | 123.550 | 39736 | 17.9 | 1766 | 61608 | 2663 |
| 450 | ±2.9 | 8.0 | 110.528 | 140.800 | 44966 | 17.9 | 1999 | 70043 | 3016 |
| 450 | ±2.9 | 9.0 | 123.991 | 157.950 | 50087 | 17.8 | 2226 | 78383 | 3362 |
| 450 | ±2.9 | 10.0 | 137.375 | 175.000 | 55100 | 17.7 | 2449 | 86629 | 3702 |
| 450 | ±2.9 | 11.0 | 150.681 | 191.950 | 59468 | 17.6 | 2643 | 95069 | 4032 |
| 450 | ±2.9 | 12.0 | 163.908 | 208.800 | 64164 | 17.5 | 2852 | 103150 | 4357 |
| 450 | ±2.9 | 13.0 | 177.057 | 225.550 | 68744 | 17.5 | 3055 | 111129 | 4676 |
| 450 | ±2.9 | 14.0 | 190.127 | 242.200 | 73210 | 17.4 | 3254 | 119003 | 4989 |
| 450 | ±2.9 | 15.0 | 203.119 | 258.750 | 77563 | 17.3 | 3447 | 126771 | 5295 |
| 450 | ±2.9 | 16.0 | 216.032 | 275.200 | 81802 | 17.2 | 3636 | 134430 | 5595 |
| 450 | ±2.9 | 17.0 | 228.867 | 291.550 | 85930 | 17.2 | 3819 | 141979 | 5888 |
| 450 | ±2.9 | 18.0 | 241.623 | 307.800 | 89947 | 17.1 | 3998 | 149415 | 6174 |
| 500 | ±3.4 | 5.0 | 77.519 | 98.750 | 40034 | 20.1 | 1601 | 61025 | 2402 |
| 500 | ±3.4 | 6.0 | 92.787 | 118.200 | 47654 | 20.1 | 1906 | 72875 | 2859 |
| 500 | ±3.4 | 7.0 | 107.977 | 137.550 | 54885 | 20.0 | 2195 | 84816 | 3308 |
| 500 | ±3.4 | 8.0 | 123.088 | 156.800 | 62172 | 19.9 | 2487 | 96483 | 3750 |
| 500 | ±3.4 | 9.0 | 138.121 | 175.950 | 69324 | 19.8 | 2773 | 108034 | 4185 |
| 500 | ±3.4 | 10.0 | 153.075 | 195.000 | 76341 | 19.8 | 3054 | 119469 | 4612 |
| 500 | ±3.4 | 11.0 | 167.951 | 213.950 | 82563 | 19.6 | 3303 | 131175 | 5028 |
| 500 | ±3.4 | 12.0 | 182.748 | 232.800 | 89187 | 19.6 | 3567 | 142418 | 5440 |
| 500 | ±3.4 | 13.0 | 197.467 | 251.550 | 95667 | 19.5 | 3827 | 153538 | 5844 |
| 500 | ±3.4 | 14.0 | 212.107 | 270.200 | 102005 | 19.4 | 4080 | 164533 | 6241 |
| 500 | ±3.4 | 15.0 | 226.669 | 288.750 | 108202 | 19.4 | 4328 | 175399 | 6630 |
| 500 | ±3.4 | 16.0 | 241.152 | 307.200 | 114258 | 19.3 | 4570 | 186135 | 7013 |
| 500 | ±3.4 | 17.0 | 255.557 | 325.550 | 120174 | 19.2 | 4807 | 196739 | 7388 |
| 500 | ±3.4 | 18.0 | 269.883 | 343.800 | 125952 | 19.1 | 5038 | 207208 | 7755 |
| 注：表中理论重量按密度7.85g/cm3计算，π按3.1416计算。 | | | | | | | | | |

1. 矩形管的截面尺寸、允许偏差、截面面积、理论重量及截面特性

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 边长 mm | | 尺寸允许偏差 mm | 壁厚 mm | 理论重量kg/m | 截面面积cm2 | 惯性矩 | | 惯性半径 | | 截面模数 | | 扭转常数 | |
| H | B | ±△ | t | M | A | Ix | Iy | rx | ry | wx | wy | It cm4 | Ct cm3 |
| 30 | 20 | ±0.3 | 1.0 | 0.377 | 0.480 | 1.151 | 0.614 | 1.55 | 1.13 | 0.767 | 0.614 | 1.294 | 1.01 |
| 30 | 20 | ±0.3 | 1.2 | 0.448 | 0.571 | 1.335 | 0.711 | 1.53 | 1.12 | 0.890 | 0.711 | 1.517 | 1.18 |
| 30 | 20 | ±0.3 | 1.5 | 0.553 | 0.705 | 1.586 | 0.840 | 1.50 | 1.09 | 1.057 | 0.840 | 1.830 | 1.40 |
| 30 | 20 | ±0.3 | 1.7 | 0.622 | 0.792 | 1.736 | 0.916 | 1.48 | 1.08 | 1.157 | 0.916 | 2.024 | 1.53 |
| 30 | 20 | ±0.3 | 2.0 | 0.722 | 0.920 | 1.937 | 1.018 | 1.45 | 1.05 | 1.291 | 1.018 | 2.292 | 1.71 |
| 40 | 20 | ±0.4 | 1.0 | 0.455 | 0.580 | 2.335 | 0.795 | 2.01 | 1.17 | 1.167 | 0.795 | 1.930 | 1.38 |
| 40 | 20 | ±0.4 | 1.2 | 0.543 | 0.691 | 2.725 | 0.923 | 1.99 | 1.16 | 1.363 | 0.923 | 2.267 | 1.60 |
| 40 | 20 | ±0.4 | 1.5 | 0.671 | 0.855 | 3.266 | 1.097 | 1.95 | 1.13 | 1.633 | 1.097 | 2.742 | 1.91 |
| 40 | 20 | ±0.4 | 1.7 | 0.755 | 0.962 | 3.596 | 1.202 | 1.93 | 1.12 | 1.798 | 1.202 | 3.039 | 2.10 |
| 40 | 20 | ±0.4 | 2.0 | 0.879 | 1.120 | 4.050 | 1.343 | 1.90 | 1.09 | 2.025 | 1.343 | 3.453 | 2.36 |
| 40 | 20 | ±0.4 | 3.0 | 1.272 | 1.620 | 5.208 | 1.685 | 1.79 | 1.02 | 2.604 | 1.685 | 4.567 | 3.00 |
| 40 | 25 | ±0.4 | 1.0 | 0.495 | 0.630 | 2.715 | 1.316 | 2.08 | 1.45 | 1.358 | 1.053 | 2.832 | 1.75 |
| 40 | 25 | ±0.4 | 1.2 | 0.590 | 0.751 | 3.177 | 1.536 | 2.06 | 1.43 | 1.589 | 1.229 | 3.339 | 2.05 |
| 40 | 25 | ±0.4 | 1.5 | 0.730 | 0.930 | 3.822 | 1.839 | 2.03 | 1.41 | 1.911 | 1.471 | 4.063 | 2.46 |
| 40 | 25 | ±0.4 | 1.7 | 0.822 | 1.047 | 4.220 | 2.024 | 2.01 | 1.39 | 2.110 | 1.620 | 4.520 | 2.72 |
| 40 | 25 | ±0.4 | 2.0 | 0.958 | 1.220 | 4.772 | 2.279 | 1.98 | 1.37 | 2.386 | 1.823 | 5.169 | 3.07 |
| 40 | 25 | ±0.4 | 3.0 | 1.389 | 1.770 | 6.237 | 2.937 | 1.88 | 1.29 | 3.118 | 2.349 | 7.005 | 4.01 |
| 40 | 30 | ±0.4 | 1.0 | 0.534 | 0.680 | 3.095 | 1.992 | 2.13 | 1.71 | 1.548 | 1.328 | 3.826 | 2.13 |
| 40 | 30 | ±0.4 | 1.2 | 0.637 | 0.811 | 3.629 | 2.331 | 2.12 | 1.70 | 1.814 | 1.554 | 4.522 | 2.50 |
| 40 | 30 | ±0.4 | 1.5 | 0.789 | 1.005 | 4.378 | 2.806 | 2.09 | 1.67 | 2.189 | 1.870 | 5.522 | 3.02 |
| 40 | 30 | ±0.4 | 1.7 | 0.889 | 1.132 | 4.844 | 3.099 | 2.07 | 1.65 | 2.422 | 2.066 | 6.159 | 3.34 |
| 40 | 30 | ±0.4 | 2.0 | 1.036 | 1.320 | 5.495 | 3.507 | 2.04 | 1.63 | 2.747 | 2.338 | 7.070 | 3.79 |
| 40 | 30 | ±0.4 | 3.0 | 1.507 | 1.920 | 7.266 | 4.602 | 1.95 | 1.55 | 3.633 | 3.068 | 9.722 | 5.03 |
| 50 | 25 | ±0.4 | 1.5 | 0.848 | 1.080 | 6.654 | 2.254 | 2.48 | 1.44 | 2.661 | 1.803 | 5.535 | 3.13 |
| 50 | 25 | ±0.4 | 1.7 | 0.956 | 1.217 | 7.373 | 2.487 | 2.46 | 1.43 | 2.949 | 1.989 | 6.165 | 3.46 |
| 50 | 25 | ±0.4 | 2.0 | 1.115 | 1.420 | 8.384 | 2.809 | 2.43 | 1.41 | 3.353 | 2.247 | 7.062 | 3.92 |
| 50 | 25 | ±0.4 | 2.5 | 1.374 | 1.750 | 9.887 | 3.278 | 2.38 | 1.37 | 3.955 | 2.623 | 8.4 | 4.60 |
| 50 | 25 | ±0.4 | 3.0 | 1.625 | 2.070 | 11.17 | 3.667 | 2.32 | 1.33 | 4.469 | 2.934 | 9.6 | 5.18 |
| 50 | 25 | ±0.4 | 4.0 | 2.104 | 2.680 | 13.13 | 4.228 | 2.21 | 1.26 | 5.252 | 3.383 | 11.6 | 6.05 |
| 50 | 25 | ±0.4 | 5.0 | 2.551 | 3.250 | 14.33 | 4.540 | 2.10 | 1.18 | 5.732 | 3.632 | 12.9 | 6.59 |
| 50 | 30 | ±0.4 | 1.5 | 0.907 | 1.155 | 7.536 | 3.415 | 2.55 | 1.72 | 3.014 | 2.277 | 7.6 | 3.83 |
| 50 | 30 | ±0.4 | 1.7 | 1.022 | 1.302 | 8.365 | 3.781 | 2.53 | 1.70 | 3.346 | 2.521 | 8.5 | 4.25 |
| 50 | 30 | ±0.4 | 2.0 | 1.193 | 1.520 | 9.536 | 4.293 | 2.50 | 1.68 | 3.815 | 2.862 | 9.8 | 4.84 |
| 50 | 30 | ±0.4 | 2.5 | 1.472 | 1.875 | 11.30 | 5.052 | 2.45 | 1.64 | 4.519 | 3.368 | 11.7 | 5.72 |
| 50 | 30 | ±0.4 | 3.0 | 1.743 | 2.220 | 12.83 | 5.700 | 2.40 | 1.60 | 5.132 | 3.800 | 13.5 | 6.49 |
| 50 | 30 | ±0.4 | 4.0 | 2.261 | 2.880 | 15.25 | 6.693 | 2.30 | 1.52 | 6.100 | 4.462 | 16.5 | 7.71 |
| 50 | 30 | ±0.4 | 5.0 | 2.748 | 3.500 | 16.87 | 7.325 | 2.20 | 1.45 | 6.748 | 4.884 | 18.8 | 8.55 |
| 50 | 40 | ±0.4 | 1.5 | 1.024 | 1.305 | 9.301 | 6.602 | 2.67 | 2.25 | 3.720 | 3.301 | 12.3 | 5.24 |
| 50 | 40 | ±0.4 | 1.7 | 1.156 | 1.472 | 10.35 | 7.339 | 2.65 | 2.23 | 4.140 | 3.670 | 13.7 | 5.83 |
| 50 | 40 | ±0.4 | 2.0 | 1.350 | 1.720 | 11.84 | 8.386 | 2.62 | 2.21 | 4.737 | 4.193 | 15.9 | 6.67 |
| 50 | 40 | ±0.4 | 2.5 | 1.668 | 2.125 | 14.12 | 9.976 | 2.58 | 2.17 | 5.648 | 4.988 | 19.2 | 7.96 |
| 50 | 40 | ±0.4 | 3.0 | 1.978 | 2.520 | 16.15 | 11.38 | 2.53 | 2.13 | 6.460 | 5.691 | 22.3 | 9.12 |
| 50 | 40 | ±0.4 | 4.0 | 2.575 | 3.280 | 19.49 | 13.68 | 2.44 | 2.04 | 7.797 | 6.839 | 27.8 | 11.06 |
| 50 | 40 | ±0.4 | 5.0 | 3.140 | 4.000 | 21.95 | 15.34 | 2.34 | 1.96 | 8.782 | 7.671 | 32.3 | 12.54 |
| 60 | 30 | ±0.4 | 1.5 | 1.024 | 1.305 | 11.82 | 4.025 | 3.01 | 1.76 | 3.940 | 2.683 | 9.8 | 4.64 |
| 60 | 30 | ±0.4 | 1.7 | 1.156 | 1.472 | 13.15 | 4.463 | 2.99 | 1.74 | 4.384 | 2.975 | 10.9 | 5.15 |
| 60 | 30 | ±0.4 | 2.0 | 1.350 | 1.720 | 15.05 | 5.078 | 2.96 | 1.72 | 5.015 | 3.385 | 12.6 | 5.88 |
| 60 | 30 | ±0.4 | 2.5 | 1.668 | 2.125 | 17.94 | 6.000 | 2.91 | 1.68 | 5.979 | 4.000 | 15.1 | 6.98 |
| 60 | 30 | ±0.4 | 3.0 | 1.978 | 2.520 | 20.50 | 6.798 | 2.85 | 1.64 | 6.834 | 4.532 | 17.5 | 7.95 |
| 60 | 30 | ±0.4 | 4.0 | 2.575 | 3.280 | 24.70 | 8.055 | 2.74 | 1.57 | 8.234 | 5.370 | 21.5 | 9.52 |
| 60 | 30 | ±0.4 | 5.0 | 3.140 | 4.000 | 27.74 | 8.909 | 2.63 | 1.49 | 9.248 | 5.939 | 24.5 | 10.65 |
| 60 | 40 | ±0.4 | 1.5 | 1.142 | 1.455 | 14.39 | 7.715 | 3.14 | 2.30 | 4.796 | 3.857 | 16.0 | 6.35 |
| 60 | 40 | ±0.4 | 1.7 | 1.289 | 1.642 | 16.04 | 8.587 | 3.13 | 2.29 | 5.347 | 4.294 | 17.9 | 7.08 |
| 60 | 40 | ±0.4 | 2.0 | 1.507 | 1.920 | 18.41 | 9.831 | 3.10 | 2.26 | 6.137 | 4.915 | 20.7 | 8.12 |
| 60 | 40 | ±0.4 | 2.5 | 1.864 | 2.375 | 22.07 | 11.74 | 3.05 | 2.22 | 7.357 | 5.868 | 25.1 | 9.72 |
| 60 | 40 | ±0.4 | 3.0 | 2.214 | 2.820 | 25.38 | 13.44 | 3.00 | 2.18 | 8.460 | 6.720 | 29.3 | 11.17 |
| 60 | 40 | ±0.4 | 4.0 | 2.889 | 3.680 | 30.99 | 16.28 | 2.90 | 2.10 | 10.33 | 8.140 | 36.7 | 13.65 |
| 60 | 40 | ±0.4 | 5.0 | 3.533 | 4.500 | 35.33 | 18.43 | 2.80 | 2.02 | 11.78 | 9.213 | 42.8 | 15.60 |
| 70 | 50 | ±0.6 | 2.0 | 1.821 | 2.320 | 31.48 | 18.76 | 3.68 | 2.84 | 8.993 | 7.503 | 37.5 | 12.20 |
| 70 | 50 | ±0.6 | 2.5 | 2.257 | 2.875 | 38.01 | 22.59 | 3.64 | 2.80 | 10.86 | 9.036 | 45.8 | 14.72 |
| 70 | 50 | ±0.6 | 3.0 | 2.685 | 3.420 | 44.05 | 26.10 | 3.59 | 2.76 | 12.59 | 10.44 | 53.6 | 17.06 |
| 70 | 50 | ±0.6 | 4.0 | 3.517 | 4.480 | 54.67 | 32.22 | 3.49 | 2.68 | 15.62 | 12.89 | 68.1 | 21.19 |
| 70 | 50 | ±0.6 | 5.0 | 4.318 | 5.500 | 63.46 | 37.20 | 3.40 | 2.60 | 18.13 | 14.88 | 80.8 | 24.64 |
| 70 | 50 | ±0.6 | 6.0 | 5.087 | 6.480 | 70.53 | 41.14 | 3.30 | 2.52 | 20.15 | 16.46 | 91.7 | 27.47 |
| 80 | 40 | ±0.6 | 2.0 | 1.821 | 2.320 | 37.36 | 12.72 | 4.01 | 2.34 | 9.339 | 6.361 | 30.9 | 11.00 |
| 80 | 40 | ±0.6 | 2.5 | 2.257 | 2.875 | 45.11 | 15.26 | 3.96 | 2.30 | 11.28 | 7.628 | 37.6 | 13.24 |
| 80 | 40 | ±0.6 | 3.0 | 2.685 | 3.420 | 52.25 | 17.56 | 3.91 | 2.27 | 13.06 | 8.778 | 43.9 | 15.28 |
| 80 | 40 | ±0.6 | 4.0 | 3.517 | 4.480 | 64.79 | 21.49 | 3.80 | 2.19 | 16.20 | 10.74 | 55.2 | 18.84 |
| 80 | 40 | ±0.6 | 5.0 | 4.318 | 5.500 | 75.11 | 24.59 | 3.70 | 2.11 | 18.78 | 12.30 | 65.0 | 21.74 |
| 80 | 40 | ±0.6 | 6.0 | 5.087 | 6.480 | 83.32 | 26.96 | 3.59 | 2.04 | 20.83 | 13.48 | 73.1 | 24.04 |
| 80 | 50 | ±0.6 | 2.0 | 1.978 | 2.520 | 43.44 | 21.06 | 4.15 | 2.89 | 10.86 | 8.425 | 45.3 | 14.04 |
| 80 | 50 | ±0.6 | 2.5 | 2.453 | 3.125 | 52.62 | 25.41 | 4.10 | 2.85 | 13.15 | 10.17 | 55.4 | 16.98 |
| 80 | 50 | ±0.6 | 3.0 | 2.920 | 3.720 | 61.15 | 29.42 | 4.05 | 2.81 | 15.29 | 11.77 | 65.0 | 19.71 |
| 80 | 50 | ±0.6 | 4.0 | 3.831 | 4.880 | 76.36 | 36.46 | 3.96 | 2.73 | 19.09 | 14.59 | 82.7 | 24.57 |
| 80 | 50 | ±0.6 | 5.0 | 4.710 | 6.000 | 89.19 | 42.29 | 3.86 | 2.65 | 22.30 | 16.92 | 98.4 | 28.69 |
| 80 | 50 | ±0.6 | 6.0 | 5.558 | 7.080 | 99.78 | 46.99 | 3.75 | 2.58 | 24.95 | 18.79 | 112.1 | 32.12 |
| 80 | 60 | ±0.6 | 2.0 | 2.135 | 2.720 | 49.53 | 31.87 | 4.27 | 3.42 | 12.38 | 10.62 | 61.2 | 17.08 |
| 80 | 60 | ±0.6 | 2.5 | 2.649 | 3.375 | 60.13 | 38.61 | 4.22 | 3.38 | 15.03 | 12.87 | 75.1 | 20.73 |
| 80 | 60 | ±0.6 | 3.0 | 3.156 | 4.020 | 70.05 | 44.89 | 4.17 | 3.34 | 17.51 | 14.96 | 88.3 | 24.14 |
| 80 | 60 | ±0.6 | 4.0 | 4.145 | 5.280 | 87.92 | 56.12 | 4.08 | 3.26 | 21.98 | 18.71 | 113.1 | 30.32 |
| 80 | 60 | ±0.6 | 5.0 | 5.103 | 6.500 | 103.3 | 65.66 | 3.99 | 3.18 | 25.82 | 21.89 | 135.5 | 35.67 |
| 80 | 60 | ±0.6 | 6.0 | 6.029 | 7.680 | 116.2 | 73.63 | 3.89 | 3.10 | 29.06 | 24.54 | 155.6 | 40.25 |
| 90 | 40 | ±0.6 | 2.0 | 1.978 | 2.520 | 50.13 | 14.17 | 4.46 | 2.37 | 11.14 | 7.083 | 36.1 | 12.45 |
| 90 | 40 | ±0.6 | 2.5 | 2.453 | 3.125 | 60.69 | 17.02 | 4.41 | 2.33 | 13.49 | 8.509 | 44.0 | 15.00 |
| 90 | 40 | ±0.6 | 3.0 | 2.920 | 3.720 | 70.49 | 19.61 | 4.35 | 2.30 | 15.67 | 9.807 | 51.4 | 17.34 |
| 90 | 40 | ±0.6 | 4.0 | 3.831 | 4.880 | 87.91 | 24.09 | 4.24 | 2.22 | 19.53 | 12.04 | 64.8 | 21.44 |
| 90 | 40 | ±0.6 | 5.0 | 4.710 | 6.000 | 102.5 | 27.68 | 4.13 | 2.15 | 22.78 | 13.84 | 76.4 | 24.82 |
| 90 | 40 | ±0.6 | 6.0 | 5.558 | 7.080 | 114.5 | 30.46 | 4.02 | 2.07 | 25.43 | 15.23 | 86.1 | 27.53 |
| 90 | 50 | ±0.6 | 2.0 | 2.135 | 2.720 | 57.88 | 23.37 | 4.61 | 2.93 | 12.86 | 9.347 | 53.4 | 15.88 |
| 90 | 50 | ±0.6 | 2.5 | 2.649 | 3.375 | 70.26 | 28.24 | 4.56 | 2.89 | 15.61 | 11.29 | 65.3 | 19.24 |
| 90 | 50 | ±0.6 | 3.0 | 3.156 | 4.020 | 81.85 | 32.74 | 4.51 | 2.85 | 18.19 | 13.10 | 76.7 | 22.36 |
| 90 | 50 | ±0.6 | 4.0 | 4.145 | 5.280 | 102.7 | 40.71 | 4.41 | 2.78 | 22.82 | 16.28 | 97.7 | 27.96 |
| 90 | 50 | ±0.6 | 5.0 | 5.103 | 6.500 | 120.6 | 47.37 | 4.31 | 2.70 | 26.80 | 18.95 | 116.5 | 32.75 |
| 90 | 50 | ±0.6 | 6.0 | 6.029 | 7.680 | 135.7 | 52.83 | 4.20 | 2.62 | 30.15 | 21.13 | 132.9 | 36.77 |
| 90 | 60 | ±0.6 | 2.0 | 2.292 | 2.920 | 65.62 | 35.24 | 4.74 | 3.47 | 14.58 | 11.75 | 72.5 | 19.32 |
| 90 | 60 | ±0.6 | 2.5 | 2.846 | 3.625 | 79.84 | 42.75 | 4.69 | 3.43 | 17.74 | 14.25 | 89.0 | 23.48 |
| 90 | 60 | ±0.6 | 3.0 | 3.391 | 4.320 | 93.21 | 49.77 | 4.65 | 3.39 | 20.71 | 16.59 | 104.8 | 27.39 |
| 90 | 60 | ±0.6 | 4.0 | 4.459 | 5.680 | 117.5 | 62.40 | 4.55 | 3.31 | 26.11 | 20.80 | 134.4 | 34.50 |
| 90 | 60 | ±0.6 | 5.0 | 5.495 | 7.000 | 138.7 | 73.24 | 4.45 | 3.23 | 30.82 | 24.41 | 161.4 | 40.71 |
| 90 | 60 | ±0.6 | 6.0 | 6.500 | 8.280 | 156.9 | 82.42 | 4.35 | 3.15 | 34.86 | 27.47 | 185.6 | 46.08 |
| 90 | 60 | ±0.6 | 7.0 | 7.473 | 9.520 | 172.2 | 90.03 | 4.25 | 3.08 | 38.27 | 30.01 | 207.2 | 50.66 |
| 100 | 50 | ±0.6 | 2.0 | 2.292 | 2.920 | 74.98 | 25.67 | 5.07 | 2.97 | 15.00 | 10.27 | 61.6 | 17.73 |
| 100 | 50 | ±0.6 | 2.5 | 2.846 | 3.625 | 91.20 | 31.06 | 5.02 | 2.93 | 18.24 | 12.42 | 75.4 | 21.49 |
| 100 | 50 | ±0.6 | 3.0 | 3.391 | 4.320 | 106.5 | 36.06 | 4.96 | 2.89 | 21.29 | 14.42 | 88.6 | 25.01 |
| 100 | 50 | ±0.6 | 4.0 | 4.459 | 5.680 | 134.1 | 44.95 | 4.86 | 2.81 | 26.83 | 17.98 | 113.0 | 31.35 |
| 100 | 50 | ±0.6 | 5.0 | 5.495 | 7.000 | 158.2 | 52.45 | 4.75 | 2.74 | 31.64 | 20.98 | 134.9 | 36.80 |
| 100 | 50 | ±0.6 | 6.0 | 6.500 | 8.280 | 178.8 | 58.67 | 4.65 | 2.66 | 35.75 | 23.47 | 154.2 | 41.43 |
| 100 | 50 | ±0.6 | 7.0 | 7.473 | 9.520 | 185.4 | 61.11 | 4.41 | 2.53 | 37.08 | 24.44 | 168.5 | 44.47 |
| 100 | 70 | ±0.6 | 2.0 | 2.606 | 3.320 | 94.19 | 54.60 | 5.33 | 4.06 | 18.84 | 15.60 | 108.5 | 25.40 |
| 100 | 70 | ±0.6 | 2.5 | 3.238 | 4.125 | 115.0 | 66.50 | 5.28 | 4.02 | 22.99 | 19.00 | 133.5 | 30.98 |
| 100 | 70 | ±0.6 | 3.0 | 3.862 | 4.920 | 134.7 | 77.74 | 5.23 | 3.98 | 26.94 | 22.21 | 157.7 | 36.27 |
| 100 | 70 | ±0.6 | 4.0 | 5.087 | 6.480 | 171.0 | 98.29 | 5.14 | 3.89 | 34.20 | 28.08 | 203.4 | 46.03 |
| 100 | 70 | ±0.6 | 5.0 | 6.280 | 8.000 | 203.4 | 116.4 | 5.04 | 3.81 | 40.67 | 33.25 | 245.7 | 54.73 |
| 100 | 70 | ±0.6 | 6.0 | 7.442 | 9.480 | 231.8 | 132.1 | 4.95 | 3.73 | 46.37 | 37.76 | 284.5 | 62.44 |
| 100 | 70 | ±0.6 | 7.0 | 8.572 | 10.920 | 246.1 | 140.5 | 4.75 | 3.59 | 49.21 | 40.16 | 318.2 | 68.39 |
| 100 | 80 | ±0.75 | 2.0 | 2.763 | 3.520 | 103.8 | 73.87 | 5.43 | 4.58 | 20.76 | 18.47 | 134.6 | 29.24 |
| 100 | 80 | ±0.75 | 2.5 | 3.434 | 4.375 | 126.9 | 90.17 | 5.38 | 4.54 | 25.37 | 22.54 | 165.8 | 35.73 |
| 100 | 80 | ±0.75 | 3.0 | 4.098 | 5.220 | 148.8 | 105.6 | 5.34 | 4.50 | 29.76 | 26.41 | 196.1 | 41.91 |
| 100 | 80 | ±0.75 | 4.0 | 5.401 | 6.880 | 189.5 | 134.2 | 5.25 | 4.42 | 37.89 | 33.54 | 253.8 | 53.38 |
| 100 | 80 | ±0.75 | 5.0 | 6.673 | 8.500 | 225.9 | 159.6 | 5.16 | 4.33 | 45.19 | 39.90 | 307.5 | 63.72 |
| 100 | 80 | ±0.75 | 6.0 | 7.913 | 10.080 | 258.4 | 182.1 | 5.06 | 4.25 | 51.68 | 45.53 | 357.4 | 72.98 |
| 100 | 80 | ±0.75 | 7.0 | 9.122 | 11.620 | 276.4 | 195.0 | 4.88 | 4.10 | 55.28 | 48.76 | 402.1 | 80.42 |
| 120 | 60 | ±0.75 | 2.0 | 2.763 | 3.520 | 131.9 | 45.33 | 6.12 | 3.59 | 21.99 | 15.11 | 107.9 | 26.05 |
| 120 | 60 | ±0.75 | 2.5 | 3.434 | 4.375 | 161.2 | 55.15 | 6.07 | 3.55 | 26.87 | 18.38 | 132.6 | 31.75 |
| 120 | 60 | ±0.75 | 3.0 | 4.098 | 5.220 | 189.1 | 64.40 | 6.02 | 3.51 | 31.52 | 21.47 | 156.3 | 37.14 |
| 120 | 60 | ±0.75 | 4.0 | 5.401 | 6.880 | 240.7 | 81.25 | 5.92 | 3.44 | 40.12 | 27.08 | 201.1 | 47.05 |
| 120 | 60 | ±0.75 | 5.0 | 6.673 | 8.500 | 287.0 | 95.99 | 5.81 | 3.36 | 47.83 | 32.00 | 242.2 | 55.85 |
| 120 | 60 | ±0.75 | 6.0 | 7.913 | 10.080 | 328.0 | 108.8 | 5.70 | 3.28 | 54.67 | 36.26 | 279.7 | 63.60 |
| 120 | 60 | ±0.75 | 7.0 | 9.122 | 11.620 | 348.8 | 115.9 | 5.48 | 3.16 | 58.13 | 38.64 | 311.6 | 69.54 |
| 120 | 80 | ±0.75 | 2.5 | 3.827 | 4.875 | 195.8 | 105.2 | 6.34 | 4.65 | 32.63 | 26.30 | 215.8 | 43.23 |
| 120 | 80 | ±0.75 | 3.0 | 4.569 | 5.820 | 230.2 | 123.4 | 6.29 | 4.61 | 38.37 | 30.86 | 255.5 | 50.80 |
| 120 | 80 | ±0.75 | 4.0 | 6.029 | 7.680 | 294.6 | 157.3 | 6.19 | 4.53 | 49.10 | 39.32 | 331.2 | 64.93 |
| 120 | 80 | ±0.75 | 5.0 | 7.458 | 9.500 | 353.1 | 187.8 | 6.10 | 4.45 | 58.86 | 46.94 | 402.3 | 77.77 |
| 120 | 80 | ±0.75 | 6.0 | 8.855 | 11.280 | 406.1 | 215.0 | 6.00 | 4.37 | 67.68 | 53.76 | 468.5 | 89.40 |
| 120 | 80 | ±0.75 | 7.0 | 10.221 | 13.020 | 438.3 | 232.4 | 5.80 | 4.23 | 73.04 | 58.11 | 529.4 | 99.06 |
| 120 | 80 | ±0.75 | 8.0 | 10.048 | 12.800 | 475.8 | 251.7 | 6.10 | 4.43 | 79.31 | 62.92 | 584.0 | 108.0 |
| 120 | 80 | ±0.75 | 9.0 | 10.951 | 13.950 | 507.7 | 267.8 | 6.03 | 4.38 | 84.62 | 66.96 | 632.8 | 115.8 |
| 120 | 80 | ±0.75 | 10.0 | 11.775 | 15.000 | 534.1 | 281.1 | 5.97 | 4.33 | 89.02 | 70.29 | 675.6 | 122.4 |
| 120 | 80 | ±0.75 | 11.0 | 12.521 | 15.950 | 516.0 | 274.4 | 5.69 | 4.15 | 86.01 | 68.59 | 686.6 | 123.7 |
| 120 | 80 | ±0.75 | 12.0 | 13.188 | 16.800 | 524.6 | 279.2 | 5.59 | 4.08 | 87.43 | 69.79 | 707.1 | 126.9 |
| 120 | 100 | ±0.9 | 3.0 | 5.040 | 6.420 | 271.3 | 205.3 | 6.50 | 5.65 | 45.21 | 41.06 | 367.0 | 64.47 |
| 120 | 100 | ±0.9 | 4.0 | 6.657 | 8.480 | 348.4 | 263.2 | 6.41 | 5.57 | 58.07 | 52.65 | 477.8 | 82.83 |
| 120 | 100 | ±0.9 | 5.0 | 8.243 | 10.500 | 419.3 | 316.3 | 6.32 | 5.49 | 69.88 | 63.25 | 582.9 | 99.75 |
| 120 | 100 | ±0.9 | 6.0 | 9.797 | 12.480 | 484.1 | 364.6 | 6.23 | 5.40 | 80.68 | 72.91 | 682.0 | 115.3 |
| 120 | 100 | ±0.9 | 7.0 | 11.320 | 14.420 | 527.8 | 397.7 | 6.05 | 5.25 | 87.96 | 79.54 | 776.2 | 128.7 |
| 120 | 100 | ±0.9 | 8.0 | 11.304 | 14.400 | 576.4 | 433.8 | 6.33 | 5.49 | 96.06 | 86.77 | 861.7 | 141.3 |
| 120 | 100 | ±0.9 | 9.0 | 12.364 | 15.750 | 618.9 | 465.3 | 6.27 | 5.44 | 103.1 | 93.07 | 940.1 | 152.5 |
| 120 | 100 | ±0.9 | 10.0 | 13.345 | 17.000 | 655.5 | 492.4 | 6.21 | 5.38 | 109.2 | 98.48 | 1011 | 162.4 |
| 120 | 100 | ±0.9 | 11.0 | 14.248 | 18.150 | 647.2 | 488.0 | 5.97 | 5.19 | 107.9 | 97.59 | 1049 | 166.8 |
| 120 | 100 | ±0.9 | 12.0 | 15.072 | 19.200 | 665.2 | 501.6 | 5.89 | 5.11 | 110.9 | 100.3 | 1094 | 172.9 |
| 140 | 60 | ±0.9 | 3.0 | 4.569 | 5.820 | 278.1 | 74.16 | 6.91 | 3.57 | 39.73 | 24.72 | 191.9 | 43.64 |
| 140 | 60 | ±0.9 | 4.0 | 6.029 | 7.680 | 355.6 | 93.81 | 6.80 | 3.50 | 50.80 | 31.27 | 247.1 | 55.42 |
| 140 | 60 | ±0.9 | 5.0 | 7.458 | 9.500 | 425.9 | 111.2 | 6.70 | 3.42 | 60.84 | 37.05 | 298.0 | 65.94 |
| 140 | 60 | ±0.9 | 6.0 | 8.855 | 11.280 | 489.2 | 126.3 | 6.59 | 3.35 | 69.88 | 42.11 | 344.5 | 75.29 |
| 140 | 60 | ±0.9 | 7.0 | 10.221 | 13.020 | 524.9 | 135.7 | 6.35 | 3.23 | 74.99 | 45.23 | 385.0 | 82.70 |
| 140 | 60 | ±0.9 | 8.0 | 10.048 | 12.800 | 568.5 | 145.8 | 6.66 | 3.37 | 81.22 | 48.60 | 420.7 | 89.46 |
| 140 | 60 | ±0.9 | 9.0 | 10.951 | 13.950 | 604.9 | 154.0 | 6.59 | 3.32 | 86.42 | 51.32 | 451.2 | 95.10 |
| 140 | 60 | ±0.9 | 10.0 | 11.775 | 15.000 | 634.3 | 160.3 | 6.50 | 3.27 | 90.62 | 53.45 | 476.4 | 99.65 |
| 140 | 60 | ±0.9 | 11.0 | 12.521 | 15.950 | 603.7 | 155.5 | 6.15 | 3.12 | 86.24 | 51.85 | 472.1 | 98.90 |
| 140 | 60 | ±0.9 | 12.0 | 13.188 | 16.800 | 609.6 | 157.1 | 6.02 | 3.06 | 87.08 | 52.36 | 478.2 | 100.1 |
| 140 | 80 | ±0.9 | 3.0 | 5.040 | 6.420 | 334.4 | 141.2 | 7.22 | 4.69 | 47.77 | 35.31 | 317.1 | 59.69 |
| 140 | 80 | ±0.9 | 4.0 | 6.657 | 8.480 | 429.6 | 180.4 | 7.12 | 4.61 | 61.37 | 45.10 | 411.6 | 76.48 |
| 140 | 80 | ±0.9 | 5.0 | 8.243 | 10.500 | 517.1 | 215.9 | 7.02 | 4.53 | 73.87 | 53.99 | 500.5 | 91.83 |
| 140 | 80 | ±0.9 | 6.0 | 9.797 | 12.480 | 597.0 | 248.0 | 6.92 | 4.46 | 85.29 | 61.99 | 583.8 | 105.8 |
| 140 | 80 | ±0.9 | 7.0 | 11.320 | 14.420 | 648.9 | 269.9 | 6.71 | 4.33 | 92.70 | 67.47 | 661.4 | 117.7 |
| 140 | 80 | ±0.9 | 8.0 | 11.304 | 14.400 | 708.1 | 293.3 | 7.01 | 4.51 | 101.2 | 73.33 | 731.4 | 128.8 |
| 140 | 80 | ±0.9 | 9.0 | 12.364 | 15.750 | 759.6 | 313.5 | 6.94 | 4.46 | 108.5 | 78.36 | 794.6 | 138.5 |
| 140 | 80 | ±0.9 | 10.0 | 13.345 | 17.000 | 803.7 | 330.5 | 6.88 | 4.41 | 114.8 | 82.62 | 851.0 | 147.0 |
| 140 | 80 | ±0.9 | 11.0 | 14.248 | 18.150 | 787.2 | 327.2 | 6.59 | 4.25 | 112.5 | 81.80 | 874.5 | 150.0 |
| 140 | 80 | ±0.9 | 12.0 | 15.072 | 19.200 | 806.8 | 335.2 | 6.48 | 4.18 | 115.3 | 83.80 | 906.4 | 154.7 |
| 140 | 80 | ±0.9 | 13.0 | 15.818 | 20.150 | 818.7 | 340.4 | 6.37 | 4.11 | 117.0 | 85.10 | 929.0 | 158.1 |
| 140 | 80 | ±0.9 | 14.0 | 16.485 | 21.000 | 823.1 | 342.8 | 6.26 | 4.04 | 117.6 | 85.71 | 942.0 | 160.1 |
| 140 | 80 | ±0.9 | 15.0 | 17.074 | 21.750 | 820.3 | 342.8 | 6.14 | 3.97 | 117.2 | 85.70 | 945.3 | 160.7 |
| 140 | 80 | ±0.9 | 16.0 | 17.584 | 22.400 | 810.6 | 340.4 | 6.02 | 3.90 | 115.8 | 85.09 | 938.8 | 159.9 |
| 150 | 100 | ±0.9 | 3.0 | 5.746 | 7.320 | 460.6 | 247.6 | 7.93 | 5.82 | 61.42 | 49.53 | 507.2 | 81.40 |
| 150 | 100 | ±0.9 | 4.0 | 7.599 | 9.680 | 594.6 | 318.6 | 7.84 | 5.74 | 79.28 | 63.71 | 661.6 | 104.9 |
| 150 | 100 | ±0.9 | 5.0 | 9.420 | 12.000 | 719.2 | 384.0 | 7.74 | 5.66 | 95.89 | 76.80 | 808.7 | 126.8 |
| 150 | 100 | ±0.9 | 6.0 | 11.210 | 14.280 | 834.7 | 444.2 | 7.65 | 5.58 | 111.3 | 88.84 | 948.3 | 147.1 |
| 150 | 100 | ±0.9 | 7.0 | 12.968 | 16.520 | 917.4 | 488.7 | 7.45 | 5.44 | 122.3 | 97.74 | 1083 | 165.0 |
| 150 | 100 | ±0.9 | 8.0 | 13.690 | 17.440 | 1008 | 535.7 | 7.60 | 5.54 | 134.4 | 107.1 | 1206 | 181.8 |
| 150 | 100 | ±0.9 | 9.0 | 15.119 | 19.260 | 1089 | 577.5 | 7.52 | 5.48 | 145.3 | 115.5 | 1320 | 197.2 |
| 150 | 100 | ±0.9 | 10.0 | 16.485 | 21.000 | 1162 | 614.4 | 7.44 | 5.41 | 154.9 | 122.9 | 1426 | 211.0 |
| 150 | 100 | ±0.9 | 11.0 | 17.788 | 22.660 | 1164 | 619.3 | 7.17 | 5.23 | 155.2 | 123.9 | 1497 | 219.0 |
| 150 | 100 | ±0.9 | 12.0 | 19.028 | 24.240 | 1207 | 641.8 | 7.06 | 5.15 | 160.9 | 128.4 | 1573 | 228.7 |
| 150 | 100 | ±0.9 | 13.0 | 20.206 | 25.740 | 1241 | 659.5 | 6.94 | 5.06 | 165.4 | 131.9 | 1637 | 236.7 |
| 150 | 100 | ±0.9 | 14.0 | 21.321 | 27.160 | 1265 | 672.7 | 6.83 | 4.98 | 168.7 | 134.5 | 1688 | 243.0 |
| 150 | 100 | ±0.9 | 15.0 | 22.373 | 28.500 | 1281 | 681.5 | 6.70 | 4.89 | 170.8 | 136.3 | 1726 | 247.8 |
| 150 | 100 | ±0.9 | 16.0 | 23.362 | 29.760 | 1288 | 686.2 | 6.58 | 4.80 | 171.7 | 137.2 | 1752 | 250.9 |
| 160 | 60 | ±0.9 | 3.0 | 5.040 | 6.420 | 389.9 | 83.91 | 7.79 | 3.62 | 48.73 | 27.97 | 228.2 | 50.14 |
| 160 | 60 | ±0.9 | 4.0 | 6.657 | 8.480 | 500.3 | 106.4 | 7.68 | 3.54 | 62.54 | 35.46 | 294.0 | 63.79 |
| 160 | 60 | ±0.9 | 5.0 | 8.243 | 10.500 | 601.5 | 126.3 | 7.57 | 3.47 | 75.19 | 42.11 | 354.7 | 76.04 |
| 160 | 60 | ±0.9 | 6.0 | 9.797 | 12.480 | 693.6 | 143.9 | 7.46 | 3.40 | 86.71 | 47.97 | 410.4 | 86.98 |
| 160 | 60 | ±0.9 | 7.0 | 11.320 | 14.420 | 749.8 | 155.5 | 7.21 | 3.28 | 93.73 | 51.82 | 459.5 | 95.86 |
| 160 | 60 | ±0.9 | 8.0 | 11.304 | 14.400 | 816.2 | 167.6 | 7.53 | 3.41 | 102.0 | 55.86 | 503.0 | 104.0 |
| 160 | 60 | ±0.9 | 9.0 | 12.364 | 15.750 | 873.2 | 177.6 | 7.45 | 3.36 | 109.2 | 59.20 | 540.7 | 110.8 |
| 160 | 60 | ±0.9 | 10.0 | 13.345 | 17.000 | 921.0 | 185.7 | 7.36 | 3.30 | 115.1 | 61.89 | 572.5 | 116.5 |
| 160 | 60 | ±0.9 | 11.0 | 14.248 | 18.150 | 890.4 | 182.4 | 7.00 | 3.17 | 111.3 | 60.80 | 574 | 116.7 |
| 160 | 60 | ±0.9 | 12.0 | 15.072 | 19.200 | 907.2 | 185.3 | 6.87 | 3.11 | 113.4 | 61.77 | 585 | 118.9 |
| 160 | 60 | ±0.9 | 13.0 | 15.818 | 20.150 | 914.4 | 186.6 | 6.74 | 3.04 | 114.3 | 62.20 | 588 | 119.7 |
| 160 | 60 | ±0.9 | 14.0 | 16.485 | 21.000 | 912.2 | 186.4 | 6.59 | 2.98 | 114.0 | 62.15 | 584 | 119.3 |
| 160 | 60 | ±0.9 | 15.0 | 17.074 | 21.750 | 900.9 | 185.0 | 6.44 | 2.92 | 112.6 | 61.66 | 573 | 117.7 |
| 160 | 60 | ±0.9 | 16.0 | 17.584 | 22.400 | 880.7 | 182.4 | 6.27 | 2.85 | 110.1 | 60.78 | 555 | 114.9 |
| 160 | 80 | ±0.9 | 3.0 | 5.511 | 7.020 | 463.8 | 159.0 | 8.13 | 4.76 | 57.98 | 39.76 | 380.3 | 68.59 |
| 160 | 80 | ±0.9 | 4.0 | 7.285 | 9.280 | 597.7 | 203.5 | 8.03 | 4.68 | 74.71 | 50.89 | 494.1 | 88.03 |
| 160 | 80 | ±0.9 | 5.0 | 9.028 | 11.500 | 721.7 | 244.1 | 7.92 | 4.61 | 90.21 | 61.03 | 601.3 | 105.9 |
| 160 | 80 | ±0.9 | 6.0 | 10.739 | 13.680 | 836.0 | 280.9 | 7.82 | 4.53 | 104.5 | 70.22 | 702.1 | 122.3 |
| 160 | 80 | ±0.9 | 7.0 | 12.419 | 15.820 | 913.8 | 307.3 | 7.60 | 4.41 | 114.2 | 76.82 | 796.7 | 136.4 |
| 160 | 80 | ±0.9 | 8.0 | 12.560 | 16.000 | 1001 | 334.9 | 7.91 | 4.58 | 125.2 | 83.74 | 882.3 | 149.5 |
| 160 | 80 | ±0.9 | 9.0 | 13.777 | 17.550 | 1079 | 359.1 | 7.84 | 4.52 | 134.8 | 89.77 | 960.4 | 161.3 |
| 160 | 80 | ±0.9 | 10.0 | 14.915 | 19.000 | 1146 | 379.8 | 7.77 | 4.47 | 143.3 | 94.95 | 1031 | 171.6 |
| 160 | 80 | ±0.9 | 11.0 | 15.975 | 20.350 | 1135 | 380.0 | 7.47 | 4.32 | 141.9 | 95.00 | 1067 | 176.3 |
| 160 | 80 | ±0.9 | 12.0 | 16.956 | 21.600 | 1171 | 391.3 | 7.36 | 4.26 | 146.3 | 97.82 | 1111 | 182.6 |
| 160 | 80 | ±0.9 | 13.0 | 17.859 | 22.750 | 1196 | 399.5 | 7.25 | 4.19 | 149.5 | 99.87 | 1144 | 187.5 |
| 160 | 80 | ±0.9 | 14.0 | 18.683 | 23.800 | 1212 | 404.7 | 7.13 | 4.12 | 151.4 | 101.2 | 1167 | 190.8 |
| 160 | 80 | ±0.9 | 15.0 | 19.429 | 24.750 | 1217 | 407.3 | 7.01 | 4.06 | 152.2 | 101.8 | 1179 | 192.7 |
| 160 | 80 | ±0.9 | 16.0 | 20.096 | 25.600 | 1214 | 407.3 | 6.89 | 3.99 | 151.7 | 101.8 | 1181 | 193.1 |
| 180 | 120 | ±1.1 | 3.0 | 6.924 | 8.820 | 809 | 435.6 | 9.58 | 7.03 | 89.87 | 72.60 | 886 | 119.2 |
| 180 | 120 | ±1.1 | 4.0 | 9.169 | 11.680 | 1050 | 563.8 | 9.48 | 6.95 | 116.7 | 93.97 | 1160 | 154.6 |
| 180 | 120 | ±1.1 | 5.0 | 11.383 | 14.500 | 1277 | 684.0 | 9.39 | 6.87 | 141.9 | 114.0 | 1424 | 187.8 |
| 180 | 120 | ±1.1 | 6.0 | 13.565 | 17.280 | 1491 | 796.3 | 9.29 | 6.79 | 165.7 | 132.7 | 1677 | 219.1 |
| 180 | 120 | ±1.1 | 7.0 | 15.716 | 20.020 | 1658 | 885.8 | 9.10 | 6.65 | 184.2 | 147.6 | 1926 | 247.7 |
| 180 | 120 | ±1.1 | 8.0 | 16.328 | 20.800 | 1835 | 978.4 | 9.39 | 6.86 | 203.9 | 163.1 | 2156 | 274.8 |
| 180 | 120 | ±1.1 | 9.0 | 18.016 | 22.950 | 1999 | 1063 | 9.33 | 6.81 | 222.1 | 177.2 | 2375 | 300.0 |
| 180 | 120 | ±1.1 | 10.0 | 19.625 | 25.000 | 2149 | 1141 | 9.27 | 6.76 | 238.8 | 190.1 | 2582 | 323.3 |
| 180 | 120 | ±1.1 | 11.0 | 21.156 | 26.950 | 2198 | 1172 | 9.03 | 6.59 | 244.2 | 195.3 | 2754 | 340.6 |
| 180 | 120 | ±1.1 | 12.0 | 22.608 | 28.800 | 2304 | 1227 | 8.95 | 6.53 | 256.0 | 204.6 | 2923 | 359.0 |
| 180 | 120 | ±1.1 | 13.0 | 23.982 | 30.550 | 2397 | 1275 | 8.86 | 6.46 | 266.3 | 212.6 | 3076 | 375.4 |
| 180 | 120 | ±1.1 | 14.0 | 25.277 | 32.200 | 2475 | 1316 | 8.77 | 6.39 | 275.0 | 219.4 | 3212 | 389.9 |
| 180 | 120 | ±1.1 | 15.0 | 26.494 | 33.750 | 2540 | 1350 | 8.68 | 6.33 | 282.2 | 225.1 | 3331 | 402.4 |
| 180 | 120 | ±1.1 | 16.0 | 27.632 | 35.200 | 2592 | 1378 | 8.58 | 6.26 | 288.0 | 229.6 | 3432 | 412.9 |
| 180 | 140 | ±1.2 | 3.0 | 7.395 | 9.420 | 903 | 616.0 | 9.79 | 8.09 | 100.3 | 88.00 | 1137 | 140.1 |
| 180 | 140 | ±1.2 | 4.0 | 9.797 | 12.480 | 1174 | 799.6 | 9.70 | 8.00 | 130.4 | 114.2 | 1491 | 182.1 |
| 180 | 140 | ±1.2 | 5.0 | 12.168 | 15.500 | 1431 | 972.9 | 9.61 | 7.92 | 158.9 | 139.0 | 1834 | 221.8 |
| 180 | 140 | ±1.2 | 6.0 | 14.507 | 18.480 | 1673 | 1136 | 9.51 | 7.84 | 185.9 | 162.3 | 2164 | 259.4 |
| 180 | 140 | ±1.2 | 7.0 | 16.815 | 21.420 | 1867 | 1269 | 9.34 | 7.70 | 207.5 | 181.2 | 2491 | 294.1 |
| 180 | 140 | ±1.2 | 8.0 | 17.584 | 22.400 | 2072 | 1406 | 9.62 | 7.92 | 230.2 | 200.8 | 2797 | 327.2 |
| 180 | 140 | ±1.2 | 9.0 | 19.429 | 24.750 | 2262 | 1533 | 9.56 | 7.87 | 251.4 | 219.0 | 3088 | 358.3 |
| 180 | 140 | ±1.2 | 10.0 | 21.195 | 27.000 | 2438 | 1650 | 9.50 | 7.82 | 270.9 | 235.8 | 3366 | 387.2 |
| 180 | 140 | ±1.2 | 11.0 | 22.883 | 29.150 | 2512 | 1705 | 9.28 | 7.65 | 279.2 | 243.5 | 3611 | 410.0 |
| 180 | 140 | ±1.2 | 12.0 | 24.492 | 31.200 | 2644 | 1793 | 9.21 | 7.58 | 293.7 | 256.1 | 3848 | 433.8 |
| 180 | 140 | ±1.2 | 13.0 | 26.023 | 33.150 | 2760 | 1871 | 9.12 | 7.51 | 306.7 | 267.2 | 4066 | 455.4 |
| 180 | 140 | ±1.2 | 14.0 | 27.475 | 35.000 | 2862 | 1939 | 9.04 | 7.44 | 318.0 | 277.0 | 4266 | 474.9 |
| 180 | 140 | ±1.2 | 15.0 | 28.849 | 36.750 | 2950 | 1998 | 8.96 | 7.37 | 327.7 | 285.4 | 4446 | 492.2 |
| 180 | 140 | ±1.2 | 16.0 | 30.144 | 38.400 | 3023 | 2047 | 8.87 | 7.30 | 335.9 | 292.5 | 4605 | 507.5 |
| 200 | 100 | ±1.1 | 3.0 | 6.924 | 8.820 | 924 | 318.2 | 10.2 | 6.01 | 92.43 | 63.65 | 754 | 109.6 |
| 200 | 100 | ±1.1 | 4.0 | 9.169 | 11.680 | 1200 | 410.8 | 10.1 | 5.93 | 120.0 | 82.16 | 985 | 141.8 |
| 200 | 100 | ±1.1 | 5.0 | 11.383 | 14.500 | 1459 | 496.9 | 10.0 | 5.85 | 145.9 | 99.39 | 1206 | 171.9 |
| 200 | 100 | ±1.1 | 6.0 | 13.565 | 17.280 | 1703 | 576.9 | 9.93 | 5.78 | 170.3 | 115.4 | 1417 | 200.1 |
| 200 | 100 | ±1.1 | 7.0 | 15.716 | 20.020 | 1890 | 640.3 | 9.72 | 5.66 | 189.0 | 128.1 | 1622 | 225.6 |
| 200 | 100 | ±1.1 | 8.0 | 16.328 | 20.800 | 2091 | 705.4 | 10.0 | 5.82 | 209.1 | 141.1 | 1811 | 249.6 |
| 200 | 100 | ±1.1 | 9.0 | 18.016 | 22.950 | 2276 | 764.4 | 9.96 | 5.77 | 227.6 | 152.9 | 1988 | 271.8 |
| 200 | 100 | ±1.1 | 10.0 | 19.625 | 25.000 | 2444 | 817.7 | 9.89 | 5.72 | 244.4 | 163.5 | 2154 | 292.1 |
| 200 | 100 | ±1.1 | 11.0 | 21.156 | 26.950 | 2490 | 838.3 | 9.61 | 5.58 | 249.0 | 167.7 | 2284 | 306.3 |
| 200 | 100 | ±1.1 | 12.0 | 22.608 | 28.800 | 2607 | 875.6 | 9.51 | 5.51 | 260.7 | 175.1 | 2414 | 321.8 |
| 200 | 100 | ±1.1 | 13.0 | 23.982 | 30.550 | 2707 | 907.4 | 9.41 | 5.45 | 270.7 | 181.5 | 2529 | 335.4 |
| 200 | 100 | ±1.1 | 14.0 | 25.277 | 32.200 | 2791 | 933.9 | 9.31 | 5.39 | 279.1 | 186.8 | 2629 | 347.0 |
| 200 | 100 | ±1.1 | 15.0 | 26.494 | 33.750 | 2858 | 955.3 | 9.20 | 5.32 | 285.8 | 191.1 | 2712 | 356.7 |
| 200 | 100 | ±1.1 | 16.0 | 27.632 | 35.200 | 2910 | 971.9 | 9.09 | 5.25 | 291.0 | 194.4 | 2780 | 364.5 |
| 200 | 120 | ±1.2 | 3.0 | 7.395 | 9.420 | 1041 | 476.7 | 10.5 | 7.11 | 104.1 | 79.44 | 1027 | 132.9 |
| 200 | 120 | ±1.2 | 4.0 | 9.797 | 12.480 | 1353 | 617.7 | 10.4 | 7.04 | 135.3 | 102.9 | 1345 | 172.5 |
| 200 | 120 | ±1.2 | 5.0 | 12.168 | 15.500 | 1649 | 750.1 | 10.3 | 6.96 | 164.9 | 125.0 | 1652 | 209.9 |
| 200 | 120 | ±1.2 | 6.0 | 14.507 | 18.480 | 1929 | 874.3 | 10.2 | 6.88 | 192.9 | 145.7 | 1947 | 245.1 |
| 200 | 120 | ±1.2 | 7.0 | 16.815 | 21.420 | 2151 | 975.3 | 10.0 | 6.75 | 215.1 | 162.5 | 2237 | 277.5 |
| 200 | 120 | ±1.2 | 8.0 | 17.584 | 22.400 | 2386 | 1079 | 10.3 | 6.94 | 238.6 | 179.8 | 2507 | 308.3 |
| 200 | 120 | ±1.2 | 9.0 | 19.429 | 24.750 | 2604 | 1175 | 10.3 | 6.89 | 260.4 | 195.8 | 2764 | 337.0 |
| 200 | 120 | ±1.2 | 10.0 | 21.195 | 27.000 | 2806 | 1262 | 10.2 | 6.84 | 280.6 | 210.4 | 3007 | 363.7 |
| 200 | 120 | ±1.2 | 11.0 | 22.883 | 29.150 | 2883 | 1303 | 9.94 | 6.69 | 288.3 | 217.1 | 3216 | 384.2 |
| 200 | 120 | ±1.2 | 12.0 | 24.492 | 31.200 | 3031 | 1368 | 9.86 | 6.62 | 303.1 | 228.0 | 3419 | 405.7 |
| 200 | 120 | ±1.2 | 13.0 | 26.023 | 33.150 | 3162 | 1425 | 9.77 | 6.56 | 316.2 | 237.5 | 3604 | 425.1 |
| 200 | 120 | ±1.2 | 14.0 | 27.475 | 35.000 | 3276 | 1475 | 9.67 | 6.49 | 327.6 | 245.8 | 3771 | 442.4 |
| 200 | 120 | ±1.2 | 15.0 | 28.849 | 36.750 | 3373 | 1517 | 9.58 | 6.42 | 337.3 | 252.8 | 3920 | 457.6 |
| 200 | 120 | ±1.2 | 16.0 | 30.144 | 38.400 | 3453 | 1552 | 9.48 | 6.36 | 345.3 | 258.7 | 4049 | 470.7 |
| 200 | 150 | ±1.3 | 3.0 | 8.101 | 10.320 | 1215 | 784.8 | 10.9 | 8.72 | 121.5 | 104.6 | 1478 | 167.8 |
| 200 | 150 | ±1.3 | 4.0 | 10.739 | 13.680 | 1584 | 1021 | 10.8 | 8.64 | 158.4 | 136.1 | 1942 | 218.5 |
| 200 | 150 | ±1.3 | 5.0 | 13.345 | 17.000 | 1935 | 1245 | 10.7 | 8.56 | 193.5 | 166.0 | 2391 | 266.8 |
| 200 | 150 | ±1.3 | 6.0 | 15.920 | 20.280 | 2268 | 1457 | 10.6 | 8.48 | 226.8 | 194.3 | 2826 | 312.7 |
| 200 | 150 | ±1.3 | 7.0 | 18.463 | 23.520 | 2542 | 1634 | 10.4 | 8.33 | 254.2 | 217.8 | 3259 | 355.5 |
| 200 | 150 | ±1.3 | 8.0 | 19.468 | 24.800 | 2829 | 1816 | 10.7 | 8.56 | 282.9 | 242.1 | 3665 | 396.4 |
| 200 | 150 | ±1.3 | 9.0 | 21.548 | 27.450 | 3097 | 1985 | 10.6 | 8.50 | 309.7 | 264.7 | 4055 | 435.1 |
| 200 | 150 | ±1.3 | 10.0 | 23.550 | 30.000 | 3348 | 2143 | 10.6 | 8.45 | 334.8 | 285.8 | 4428 | 471.4 |
| 200 | 150 | ±1.3 | 11.0 | 25.473 | 32.450 | 3473 | 2229 | 10.3 | 8.29 | 347.3 | 297.2 | 4772 | 501.4 |
| 200 | 150 | ±1.3 | 12.0 | 27.318 | 34.800 | 3668 | 2353 | 10.3 | 8.22 | 366.8 | 313.7 | 5099 | 532.1 |
| 200 | 150 | ±1.3 | 13.0 | 29.084 | 37.050 | 3845 | 2464 | 10.2 | 8.16 | 384.5 | 328.6 | 5406 | 560.4 |
| 200 | 150 | ±1.3 | 14.0 | 30.772 | 39.200 | 4004 | 2564 | 10.1 | 8.09 | 400.4 | 341.9 | 5691 | 586.4 |
| 200 | 150 | ±1.3 | 15.0 | 32.381 | 41.250 | 4144 | 2653 | 10.0 | 8.02 | 414.4 | 353.8 | 5953 | 610.1 |
| 200 | 150 | ±1.3 | 16.0 | 33.912 | 43.200 | 4267 | 2731 | 9.94 | 7.95 | 426.7 | 364.1 | 6193 | 631.4 |
| 220 | 150 | ±1.3 | 3.0 | 8.572 | 10.920 | 1522 | 849.7 | 11.8 | 8.82 | 138.3 | 113.3 | 1694 | 185.1 |
| 220 | 150 | ±1.3 | 4.0 | 11.367 | 14.480 | 1986 | 1106 | 11.7 | 8.74 | 180.5 | 147.5 | 2227 | 241.3 |
| 220 | 150 | ±1.3 | 5.0 | 14.130 | 18.000 | 2429 | 1350 | 11.6 | 8.66 | 220.8 | 180.0 | 2743 | 294.9 |
| 220 | 150 | ±1.3 | 6.0 | 16.862 | 21.480 | 2851 | 1582 | 11.5 | 8.58 | 259.2 | 210.9 | 3244 | 345.9 |
| 220 | 150 | ±1.3 | 7.0 | 19.562 | 24.920 | 3202 | 1777 | 11.3 | 8.44 | 291.1 | 236.9 | 3742 | 393.7 |
| 220 | 150 | ±1.3 | 8.0 | 20.724 | 26.400 | 3569 | 1977 | 11.6 | 8.65 | 324.5 | 263.6 | 4211 | 439.4 |
| 220 | 150 | ±1.3 | 9.0 | 22.961 | 29.250 | 3914 | 2164 | 11.6 | 8.60 | 355.8 | 288.6 | 4662 | 482.8 |
| 220 | 150 | ±1.3 | 10.0 | 25.120 | 32.000 | 4238 | 2340 | 11.5 | 8.55 | 385.3 | 312.0 | 5096 | 523.7 |
| 220 | 150 | ±1.3 | 11.0 | 27.200 | 34.650 | 4410 | 2442 | 11.3 | 8.39 | 400.9 | 325.6 | 5499 | 558.0 |
| 220 | 150 | ±1.3 | 12.0 | 29.202 | 37.200 | 4668 | 2582 | 11.2 | 8.33 | 424.3 | 344.2 | 5884 | 593.0 |
| 220 | 150 | ±1.3 | 13.0 | 31.125 | 39.650 | 4903 | 2709 | 11.1 | 8.27 | 445.7 | 361.2 | 6245 | 625.5 |
| 220 | 150 | ±1.3 | 14.0 | 32.970 | 42.000 | 5116 | 2824 | 11.0 | 8.20 | 465.1 | 376.6 | 6583 | 655.4 |
| 220 | 150 | ±1.3 | 15.0 | 34.736 | 44.250 | 5307 | 2928 | 11.0 | 8.13 | 482.4 | 390.4 | 6897 | 683.0 |
| 220 | 150 | ±1.3 | 16.0 | 36.424 | 46.400 | 5477 | 3020 | 10.9 | 8.07 | 497.9 | 402.6 | 7186 | 708.0 |
| 250 | 100 | ±1.3 | 3.0 | 8.101 | 10.320 | 1606 | 388.8 | 12.5 | 6.14 | 128.5 | 77.8 | 1012 | 137.9 |
| 250 | 100 | ±1.3 | 4.0 | 10.739 | 13.680 | 2092 | 503.0 | 12.4 | 6.06 | 167.3 | 100.6 | 1323 | 178.7 |
| 250 | 100 | ±1.3 | 5.0 | 13.345 | 17.000 | 2554 | 609.9 | 12.3 | 5.99 | 204.3 | 122.0 | 1620 | 217.1 |
| 250 | 100 | ±1.3 | 6.0 | 15.920 | 20.280 | 2992 | 709.6 | 12.1 | 5.92 | 239.4 | 141.9 | 1905 | 253.1 |
| 250 | 100 | ±1.3 | 7.0 | 18.463 | 23.520 | 3342 | 792.0 | 11.9 | 5.80 | 267.3 | 158.4 | 2182 | 286.2 |
| 250 | 100 | ±1.3 | 8.0 | 19.468 | 24.800 | 3714 | 875.1 | 12.2 | 5.94 | 297.1 | 175.0 | 2439 | 317.4 |
| 250 | 100 | ±1.3 | 9.0 | 21.548 | 27.450 | 4061 | 951.4 | 12.2 | 5.89 | 324.9 | 190.3 | 2681 | 346.4 |
| 250 | 100 | ±1.3 | 10.0 | 23.550 | 30.000 | 4384 | 1021 | 12.1 | 5.83 | 350.7 | 204.2 | 2910 | 373.3 |
| 250 | 100 | ±1.3 | 11.0 | 25.473 | 32.450 | 4515 | 1057 | 11.8 | 5.71 | 361.2 | 211.4 | 3101 | 393.7 |
| 250 | 100 | ±1.3 | 12.0 | 27.318 | 34.800 | 4757 | 1109 | 11.7 | 5.65 | 380.6 | 221.9 | 3287 | 415.1 |
| 250 | 100 | ±1.3 | 13.0 | 29.084 | 37.050 | 4973 | 1155 | 11.6 | 5.58 | 397.8 | 231.0 | 3455 | 434.2 |
| 250 | 100 | ±1.3 | 14.0 | 30.772 | 39.200 | 5163 | 1195 | 11.5 | 5.52 | 413.0 | 239.0 | 3605 | 451.1 |
| 250 | 100 | ±1.3 | 15.0 | 32.381 | 41.250 | 5327 | 1229 | 11.4 | 5.46 | 426.2 | 245.8 | 3736 | 465.8 |
| 250 | 100 | ±1.3 | 16.0 | 33.912 | 43.200 | 5466 | 1258 | 11.2 | 5.40 | 437.3 | 251.5 | 3848 | 478.3 |
| 250 | 150 | ±1.5 | 3.0 | 9.067 | 11.550 | 2063 | 946.9 | 13.4 | 9.05 | 165.1 | 126.3 | 2026 | 211.0 |
| 250 | 150 | ±1.5 | 4.0 | 11.932 | 15.200 | 2697 | 1234 | 13.3 | 9.01 | 215.7 | 164.6 | 2665 | 275.4 |
| 250 | 150 | ±1.5 | 5.0 | 14.719 | 18.750 | 3304 | 1508 | 13.3 | 8.97 | 264.3 | 201.1 | 3285 | 336.9 |
| 250 | 150 | ±1.5 | 6.0 | 17.427 | 22.200 | 3886 | 1768 | 13.2 | 8.92 | 310.8 | 235.8 | 3886 | 395.6 |
| 250 | 150 | ±1.5 | 7.0 | 20.057 | 25.550 | 4375 | 1992 | 13.1 | 8.83 | 350.0 | 265.6 | 4485 | 450.9 |
| 250 | 150 | ±1.5 | 8.0 | 22.608 | 28.800 | 4886 | 2219 | 13.0 | 8.78 | 390.9 | 295.9 | 5050 | 504.0 |
| 250 | 150 | ±1.5 | 9.0 | 25.081 | 31.950 | 5369 | 2433 | 13.0 | 8.73 | 429.5 | 324.4 | 5596 | 554.3 |
| 250 | 150 | ±1.5 | 10.0 | 27.475 | 35.000 | 5825 | 2634 | 12.9 | 8.68 | 466.0 | 351.2 | 6121 | 602.1 |
| 250 | 150 | ±1.5 | 11.0 | 29.791 | 37.950 | 6087 | 2761 | 12.7 | 8.53 | 486.9 | 368.2 | 6617 | 643.0 |
| 250 | 150 | ±1.5 | 12.0 | 32.028 | 40.800 | 6458 | 2925 | 12.6 | 8.47 | 516.6 | 390.0 | 7088 | 684.4 |
| 250 | 150 | ±1.5 | 13.0 | 34.187 | 43.550 | 6800 | 3076 | 12.5 | 8.40 | 544.0 | 410.2 | 7534 | 723.1 |
| 250 | 150 | ±1.5 | 14.0 | 36.267 | 46.200 | 7115 | 3214 | 12.4 | 8.34 | 569.2 | 428.5 | 7954 | 759.1 |
| 250 | 150 | ±1.5 | 15.0 | 38.269 | 48.750 | 7401 | 3340 | 12.3 | 8.28 | 592.1 | 445.3 | 8347 | 792.4 |
| 250 | 150 | ±1.5 | 16.0 | 40.192 | 51.200 | 7660 | 3453 | 12.2 | 8.21 | 612.8 | 460.4 | 8713 | 823.0 |
| 300 | 100 | ±1.5 | 3.0 | 9.067 | 11.550 | 2542 | 459.4 | 14.8 | 6.31 | 169.5 | 91.9 | 1276 | 166.1 |
| 300 | 100 | ±1.5 | 4.0 | 11.932 | 15.200 | 3320 | 595.2 | 14.8 | 6.26 | 221.4 | 119.0 | 1668 | 215.6 |
| 300 | 100 | ±1.5 | 5.0 | 14.719 | 18.750 | 4065 | 722.8 | 14.7 | 6.21 | 271.0 | 144.6 | 2044 | 262.2 |
| 300 | 100 | ±1.5 | 6.0 | 17.427 | 22.200 | 4777 | 842.4 | 14.7 | 6.16 | 318.5 | 168.5 | 2403 | 306.2 |
| 300 | 100 | ±1.5 | 7.0 | 20.057 | 25.550 | 5360 | 943.6 | 14.5 | 6.08 | 357.4 | 188.7 | 2754 | 346.8 |
| 300 | 100 | ±1.5 | 8.0 | 22.608 | 28.800 | 5978 | 1045 | 14.4 | 6.02 | 398.5 | 209.0 | 3080 | 385.2 |
| 300 | 100 | ±1.5 | 9.0 | 25.081 | 31.950 | 6560 | 1138 | 14.3 | 5.97 | 437.3 | 227.7 | 3389 | 421.1 |
| 300 | 100 | ±1.5 | 10.0 | 27.475 | 35.000 | 7106 | 1224 | 14.2 | 5.91 | 473.7 | 244.9 | 3681 | 454.5 |
| 300 | 100 | ±1.5 | 11.0 | 29.791 | 37.950 | 7377 | 1276 | 13.9 | 5.80 | 491.8 | 255.2 | 3934 | 481.2 |
| 300 | 100 | ±1.5 | 12.0 | 32.028 | 40.800 | 7808 | 1343 | 13.8 | 5.74 | 520.6 | 268.6 | 4177 | 508.5 |
| 300 | 100 | ±1.5 | 13.0 | 34.187 | 43.550 | 8201 | 1403 | 13.7 | 5.68 | 546.8 | 280.6 | 4400 | 533.2 |
| 300 | 100 | ±1.5 | 14.0 | 36.267 | 46.200 | 8557 | 1456 | 13.6 | 5.61 | 570.5 | 291.2 | 4602 | 555.4 |
| 300 | 100 | ±1.5 | 15.0 | 38.269 | 48.750 | 8876 | 1503 | 13.5 | 5.55 | 591.7 | 300.6 | 4781 | 575.1 |
| 300 | 100 | ±1.5 | 16.0 | 40.192 | 51.200 | 9157 | 1543 | 13.4 | 5.49 | 610.5 | 308.6 | 4939 | 592.3 |
| 300 | 150 | ±1.8 | 3.0 | 10.244 | 13.050 | 3204 | 1109 | 15.7 | 9.22 | 213.6 | 147.9 | 2597 | 254.2 |
| 300 | 150 | ±1.8 | 4.0 | 13.502 | 17.200 | 4197 | 1447 | 15.6 | 9.17 | 279.8 | 193.0 | 3417 | 332.2 |
| 300 | 150 | ±1.8 | 5.0 | 16.681 | 21.250 | 5153 | 1771 | 15.6 | 9.13 | 343.5 | 236.1 | 4214 | 407.0 |
| 300 | 150 | ±1.8 | 6.0 | 19.782 | 25.200 | 6074 | 2080 | 15.5 | 9.08 | 404.9 | 277.3 | 4988 | 478.6 |
| 300 | 150 | ±1.8 | 7.0 | 22.804 | 29.050 | 6863 | 2350 | 15.4 | 8.99 | 457.5 | 313.3 | 5760 | 546.4 |
| 300 | 150 | ±1.8 | 8.0 | 25.748 | 32.800 | 7684 | 2623 | 15.3 | 8.94 | 512.2 | 349.7 | 6491 | 611.5 |
| 300 | 150 | ±1.8 | 9.0 | 28.613 | 36.450 | 8465 | 2881 | 15.2 | 8.89 | 564.4 | 384.2 | 7197 | 673.7 |
| 300 | 150 | ±1.8 | 10.0 | 31.400 | 40.000 | 9209 | 3125 | 15.2 | 8.84 | 614.0 | 416.7 | 7879 | 732.8 |
| 300 | 150 | ±1.8 | 11.0 | 34.108 | 43.450 | 9675 | 3294 | 14.9 | 8.71 | 645.0 | 439.2 | 8533 | 784.8 |
| 300 | 150 | ±1.8 | 12.0 | 36.738 | 46.800 | 10298 | 3498 | 14.8 | 8.65 | 686.5 | 466.4 | 9153 | 836.9 |
| 300 | 150 | ±1.8 | 13.0 | 39.289 | 50.050 | 10880 | 3688 | 14.7 | 8.58 | 725.4 | 491.7 | 9743 | 885.9 |
| 300 | 150 | ±1.8 | 14.0 | 41.762 | 53.200 | 11422 | 3864 | 14.7 | 8.52 | 761.5 | 515.2 | 10303 | 931.9 |
| 300 | 150 | ±1.8 | 15.0 | 44.156 | 56.250 | 11924 | 4026 | 14.6 | 8.46 | 795.0 | 536.8 | 10831 | 974.9 |
| 300 | 150 | ±1.8 | 16.0 | 46.472 | 59.200 | 12387 | 4174 | 14.5 | 8.40 | 825.8 | 556.6 | 11328 | 1015 |
| 300 | 200 | ±1.8 | 4.0 | 15.072 | 19.200 | 5073 | 2737 | 16.3 | 11.9 | 338.2 | 273.7 | 5527 | 449.0 |
| 300 | 200 | ±1.8 | 5.0 | 18.644 | 23.750 | 6241 | 3361 | 16.2 | 11.9 | 416.1 | 336.1 | 6836 | 551.9 |
| 300 | 200 | ±1.8 | 6.0 | 22.137 | 28.200 | 7370 | 3962 | 16.2 | 11.9 | 491.3 | 396.2 | 8115 | 651.2 |
| 300 | 200 | ±1.8 | 7.0 | 25.552 | 32.550 | 8366 | 4498 | 16.0 | 11.8 | 557.7 | 449.8 | 9400 | 746.3 |
| 300 | 200 | ±1.8 | 8.0 | 28.888 | 36.800 | 9389 | 5042 | 16.0 | 11.7 | 626.0 | 504.2 | 10626 | 838.4 |
| 300 | 200 | ±1.8 | 9.0 | 32.146 | 40.950 | 10371 | 5561 | 15.9 | 11.7 | 691.4 | 556.1 | 11822 | 927.0 |
| 300 | 200 | ±1.8 | 10.0 | 35.325 | 45.000 | 11313 | 6058 | 15.9 | 11.6 | 754.2 | 605.8 | 12987 | 1012 |
| 300 | 200 | ±1.8 | 11.0 | 38.426 | 48.950 | 11973 | 6423 | 15.6 | 11.5 | 798.2 | 642.3 | 14144 | 1090 |
| 300 | 200 | ±1.8 | 12.0 | 41.448 | 52.800 | 12788 | 6854 | 15.6 | 11.4 | 852.5 | 685.4 | 15236 | 1167 |
| 300 | 200 | ±1.8 | 13.0 | 44.392 | 56.550 | 13559 | 7260 | 15.5 | 11.3 | 903.9 | 726.0 | 16290 | 1241 |
| 300 | 200 | ±1.8 | 14.0 | 47.257 | 60.200 | 14287 | 7643 | 15.4 | 11.3 | 952.5 | 764.3 | 17307 | 1311 |
| 300 | 200 | ±1.8 | 15.0 | 50.044 | 63.750 | 14973 | 8003 | 15.3 | 11.2 | 998.2 | 800.3 | 18285 | 1378 |
| 300 | 200 | ±1.8 | 16.0 | 52.752 | 67.200 | 15617 | 8340 | 15.2 | 11.1 | 1041 | 834.0 | 19223 | 1442 |
| 300 | 200 | ±1.8 | 17.0 | 55.382 | 70.550 | 16219 | 8655 | 15.2 | 11.1 | 1081 | 865.5 | 20120 | 1502 |
| 300 | 200 | ±1.8 | 18.0 | 57.933 | 73.800 | 16780 | 8948 | 15.1 | 11.0 | 1119 | 894.8 | 20974 | 1559 |
| 350 | 250 | ±2.2 | 5.0 | 22.569 | 28.750 | 10520 | 6306 | 19.1 | 14.8 | 601.1 | 504.5 | 12234 | 816.9 |
| 350 | 250 | ±2.2 | 6.0 | 26.847 | 34.200 | 12457 | 7458 | 19.1 | 14.8 | 711.8 | 596.7 | 14554 | 966.8 |
| 350 | 250 | ±2.2 | 7.0 | 31.047 | 39.550 | 14211 | 8510 | 19.0 | 14.7 | 812.1 | 680.8 | 16889 | 1112 |
| 350 | 250 | ±2.2 | 8.0 | 35.168 | 44.800 | 16001 | 9573 | 18.9 | 14.6 | 914.4 | 765.8 | 19136 | 1253 |
| 350 | 250 | ±2.2 | 9.0 | 39.211 | 49.950 | 17733 | 10599 | 18.8 | 14.6 | 1013 | 847.9 | 21340 | 1390 |
| 350 | 250 | ±2.2 | 10.0 | 43.175 | 55.000 | 19407 | 11588 | 18.8 | 14.5 | 1109 | 927.1 | 23500 | 1522 |
| 350 | 250 | ±2.2 | 11.0 | 47.061 | 59.950 | 20698 | 12375 | 18.6 | 14.4 | 1183 | 990.0 | 25683 | 1647 |
| 350 | 250 | ±2.2 | 12.0 | 50.868 | 64.800 | 22197 | 13261 | 18.5 | 14.3 | 1268 | 1061 | 27749 | 1770 |
| 350 | 250 | ±2.2 | 13.0 | 54.597 | 69.550 | 23633 | 14110 | 18.4 | 14.2 | 1350 | 1129 | 29765 | 1889 |
| 350 | 250 | ±2.2 | 14.0 | 58.247 | 74.200 | 25009 | 14921 | 18.4 | 14.2 | 1429 | 1194 | 31729 | 2003 |
| 350 | 250 | ±2.2 | 15.0 | 61.819 | 78.750 | 26324 | 15696 | 18.3 | 14.1 | 1504 | 1256 | 33640 | 2114 |
| 350 | 250 | ±2.2 | 16.0 | 65.312 | 83.200 | 27580 | 16434 | 18.2 | 14.1 | 1576 | 1315 | 35497 | 2220 |
| 350 | 250 | ±2.2 | 17.0 | 68.727 | 87.550 | 28777 | 17137 | 18.1 | 14.0 | 1644 | 1371 | 37298 | 2322 |
| 350 | 250 | ±2.2 | 18.0 | 72.063 | 91.800 | 29915 | 17805 | 18.1 | 13.9 | 1709 | 1424 | 39043 | 2421 |
| 400 | 200 | ±2.2 | 5.0 | 22.569 | 28.750 | 12490 | 4312 | 20.8 | 12.2 | 624.5 | 431.2 | 10159 | 742.0 |
| 400 | 200 | ±2.2 | 6.0 | 26.847 | 34.200 | 14789 | 5092 | 20.8 | 12.2 | 739.5 | 509.2 | 12069 | 877.0 |
| 400 | 200 | ±2.2 | 7.0 | 31.047 | 39.550 | 16855 | 5803 | 20.6 | 12.1 | 842.8 | 580.3 | 13983 | 1007 |
| 400 | 200 | ±2.2 | 8.0 | 35.168 | 44.800 | 18974 | 6517 | 20.6 | 12.1 | 948.7 | 651.7 | 15820 | 1133 |
| 400 | 200 | ±2.2 | 9.0 | 39.211 | 49.950 | 21023 | 7204 | 20.5 | 12.0 | 1051 | 720.4 | 17615 | 1255 |
| 400 | 200 | ±2.2 | 10.0 | 43.175 | 55.000 | 23003 | 7864 | 20.5 | 12.0 | 1150 | 786.4 | 19368 | 1373 |
| 400 | 200 | ±2.2 | 11.0 | 47.061 | 59.950 | 24488 | 8390 | 20.2 | 11.8 | 1224 | 839.0 | 21122 | 1483 |
| 400 | 200 | ±2.2 | 12.0 | 50.868 | 64.800 | 26248 | 8977 | 20.1 | 11.8 | 1312 | 897.7 | 22782 | 1591 |
| 400 | 200 | ±2.2 | 13.0 | 54.597 | 69.550 | 27934 | 9537 | 20.0 | 11.7 | 1397 | 953.7 | 24394 | 1696 |
| 400 | 200 | ±2.2 | 14.0 | 58.247 | 74.200 | 29545 | 10069 | 20.0 | 11.6 | 1477 | 1007 | 25956 | 1796 |
| 400 | 200 | ±2.2 | 15.0 | 61.819 | 78.750 | 31083 | 10576 | 19.9 | 11.6 | 1554 | 1058 | 27468 | 1892 |
| 400 | 200 | ±2.2 | 16.0 | 65.312 | 83.200 | 32547 | 11056 | 19.8 | 11.5 | 1627 | 1106 | 28928 | 1984 |
| 400 | 200 | ±2.2 | 17.0 | 68.727 | 87.550 | 33939 | 11510 | 19.7 | 11.5 | 1697 | 1151 | 30336 | 2072 |
| 400 | 200 | ±2.2 | 18.0 | 72.063 | 91.800 | 35259 | 11939 | 19.6 | 11.4 | 1763 | 1194 | 31690 | 2155 |
| 400 | 300 | ±2.2 | 5.0 | 26.494 | 33.750 | 16391 | 10593 | 22.0 | 17.7 | 819.5 | 706.2 | 19853 | 1132 |
| 400 | 300 | ±2.2 | 6.0 | 31.557 | 40.200 | 19447 | 12557 | 22.0 | 17.7 | 972.3 | 837.1 | 23651 | 1342 |
| 400 | 300 | ±2.2 | 7.0 | 36.542 | 46.550 | 22262 | 14376 | 21.9 | 17.6 | 1113 | 958.4 | 27477 | 1547 |
| 400 | 300 | ±2.2 | 8.0 | 41.448 | 52.800 | 25122 | 16212 | 21.8 | 17.5 | 1256 | 1081 | 31179 | 1747 |
| 400 | 300 | ±2.2 | 9.0 | 46.276 | 58.950 | 27904 | 17995 | 21.8 | 17.5 | 1395 | 1200 | 34822 | 1942 |
| 400 | 300 | ±2.2 | 10.0 | 51.025 | 65.000 | 30609 | 19726 | 21.7 | 17.4 | 1530 | 1315 | 38407 | 2132 |
| 400 | 300 | ±2.2 | 11.0 | 55.696 | 70.950 | 32813 | 21165 | 21.5 | 17.3 | 1641 | 1411 | 42058 | 2313 |
| 400 | 300 | ±2.2 | 12.0 | 60.288 | 76.800 | 35284 | 22747 | 21.4 | 17.2 | 1764 | 1516 | 45527 | 2492 |
| 400 | 300 | ±2.2 | 13.0 | 64.802 | 82.550 | 37673 | 24274 | 21.4 | 17.1 | 1884 | 1618 | 48930 | 2666 |
| 400 | 300 | ±2.2 | 14.0 | 69.237 | 88.200 | 39979 | 25748 | 21.3 | 17.1 | 1999 | 1717 | 52266 | 2835 |
| 400 | 300 | ±2.2 | 15.0 | 73.594 | 93.750 | 42205 | 27168 | 21.2 | 17.0 | 2110 | 1811 | 55534 | 3000 |
| 400 | 300 | ±2.2 | 16.0 | 77.872 | 99.200 | 44350 | 28535 | 21.1 | 17.0 | 2218 | 1902 | 58730 | 3159 |
| 400 | 300 | ±2.2 | 17.0 | 82.072 | 104.550 | 46416 | 29850 | 21.1 | 16.9 | 2321 | 1990 | 61855 | 3313 |
| 400 | 300 | ±2.2 | 18.0 | 86.193 | 109.800 | 48402 | 31114 | 21.0 | 16.8 | 2420 | 2074 | 64907 | 3462 |
| 450 | 250 | ±2.2 | 5.0 | 26.494 | 33.750 | 19153 | 7807 | 23.8 | 15.2 | 851.2 | 624.5 | 17379 | 1057 |
| 450 | 250 | ±2.2 | 6.0 | 31.557 | 40.200 | 22724 | 9245 | 23.8 | 15.2 | 1010 | 739.6 | 20687 | 1253 |
| 450 | 250 | ±2.2 | 7.0 | 36.542 | 46.550 | 25998 | 10577 | 23.6 | 15.1 | 1155 | 846.2 | 24012 | 1442 |
| 450 | 250 | ±2.2 | 8.0 | 41.448 | 52.800 | 29336 | 11916 | 23.6 | 15.0 | 1304 | 953.3 | 27222 | 1628 |
| 450 | 250 | ±2.2 | 9.0 | 46.276 | 58.950 | 32582 | 13213 | 23.5 | 15.0 | 1448 | 1057 | 30377 | 1808 |
| 450 | 250 | ±2.2 | 10.0 | 51.025 | 65.000 | 35737 | 14470 | 23.4 | 14.9 | 1588 | 1158 | 33473 | 1983 |
| 450 | 250 | ±2.2 | 11.0 | 55.696 | 70.950 | 38265 | 15518 | 23.2 | 14.8 | 1701 | 1241 | 36611 | 2149 |
| 450 | 250 | ±2.2 | 12.0 | 60.288 | 76.800 | 41137 | 16662 | 23.1 | 14.7 | 1828 | 1333 | 39591 | 2314 |
| 450 | 250 | ±2.2 | 13.0 | 64.802 | 82.550 | 43911 | 17764 | 23.1 | 14.7 | 1952 | 1421 | 42507 | 2473 |
| 450 | 250 | ±2.2 | 14.0 | 69.237 | 88.200 | 46587 | 18824 | 23.0 | 14.6 | 2071 | 1506 | 45358 | 2627 |
| 450 | 250 | ±2.2 | 15.0 | 73.594 | 93.750 | 49168 | 19843 | 22.9 | 14.5 | 2185 | 1587 | 48142 | 2777 |
| 450 | 250 | ±2.2 | 16.0 | 77.872 | 99.200 | 51652 | 20822 | 22.8 | 14.5 | 2296 | 1666 | 50858 | 2921 |
| 450 | 250 | ±2.2 | 17.0 | 82.072 | 104.550 | 54041 | 21760 | 22.7 | 14.4 | 2402 | 1741 | 53504 | 3061 |
| 450 | 250 | ±2.2 | 18.0 | 86.193 | 109.800 | 56336 | 22659 | 22.7 | 14.4 | 2504 | 1813 | 56079 | 3196 |
| 500 | 300 | ±2.9 | 5.0 | 30.419 | 38.750 | 27782 | 12769 | 26.8 | 18.2 | 1111 | 851.2 | 27202 | 1422 |
| 500 | 300 | ±2.9 | 6.0 | 36.267 | 46.200 | 33012 | 15151 | 26.7 | 18.1 | 1320 | 1010 | 32420 | 1688 |
| 500 | 300 | ±2.9 | 7.0 | 42.037 | 53.550 | 37870 | 17382 | 26.6 | 18.0 | 1515 | 1159 | 37672 | 1948 |
| 500 | 300 | ±2.9 | 8.0 | 47.728 | 60.800 | 42805 | 19624 | 26.5 | 18.0 | 1712 | 1308 | 42767 | 2202 |
| 500 | 300 | ±2.9 | 9.0 | 53.341 | 67.950 | 47624 | 21807 | 26.5 | 17.9 | 1905 | 1454 | 47789 | 2450 |
| 500 | 300 | ±2.9 | 10.0 | 58.875 | 75.000 | 52328 | 23933 | 26.4 | 17.9 | 2093 | 1596 | 52736 | 2693 |
| 500 | 300 | ±2.9 | 11.0 | 64.331 | 81.950 | 56255 | 25761 | 26.2 | 17.7 | 2250 | 1717 | 57775 | 2926 |
| 500 | 300 | ±2.9 | 12.0 | 69.708 | 88.800 | 60604 | 27726 | 26.1 | 17.7 | 2424 | 1848 | 62581 | 3156 |
| 500 | 300 | ±2.9 | 13.0 | 75.007 | 95.550 | 64828 | 29632 | 26.0 | 17.6 | 2593 | 1975 | 67305 | 3380 |
| 500 | 300 | ±2.9 | 14.0 | 80.227 | 102.200 | 68929 | 31478 | 26.0 | 17.6 | 2757 | 2099 | 71946 | 3599 |
| 500 | 300 | ±2.9 | 15.0 | 85.369 | 108.750 | 72907 | 33266 | 25.9 | 17.5 | 2916 | 2218 | 76502 | 3812 |
| 500 | 300 | ±2.9 | 16.0 | 90.432 | 115.200 | 76763 | 34995 | 25.8 | 17.4 | 3071 | 2333 | 80972 | 4019 |
| 500 | 300 | ±2.9 | 17.0 | 95.417 | 121.550 | 80499 | 36666 | 25.7 | 17.4 | 3220 | 2444 | 85353 | 4220 |
| 500 | 300 | ±2.9 | 18.0 | 100.323 | 127.800 | 84114 | 38281 | 25.7 | 17.3 | 3365 | 2552 | 89644 | 4416 |
| 500 | 400 | ±2.9 | 5.0 | 34.344 | 43.750 | 33908 | 24192 | 27.8 | 23.5 | 1356 | 1210 | 43254 | 1912 |
| 500 | 400 | ±2.9 | 6.0 | 40.977 | 52.200 | 40333 | 28762 | 27.8 | 23.5 | 1613 | 1438 | 51619 | 2274 |
| 500 | 400 | ±2.9 | 7.0 | 47.532 | 60.550 | 46377 | 33074 | 27.7 | 23.4 | 1855 | 1654 | 60047 | 2628 |
| 500 | 400 | ±2.9 | 8.0 | 54.008 | 68.800 | 52489 | 37417 | 27.6 | 23.3 | 2100 | 1871 | 68260 | 2976 |
| 500 | 400 | ±2.9 | 9.0 | 60.406 | 76.950 | 58474 | 41666 | 27.6 | 23.3 | 2339 | 2083 | 76379 | 3318 |
| 500 | 400 | ±2.9 | 10.0 | 66.725 | 85.000 | 64334 | 45823 | 27.5 | 23.2 | 2573 | 2291 | 84403 | 3653 |
| 500 | 400 | ±2.9 | 11.0 | 72.966 | 92.950 | 69409 | 49463 | 27.3 | 23.1 | 2776 | 2473 | 92612 | 3977 |
| 500 | 400 | ±2.9 | 12.0 | 79.128 | 100.800 | 74895 | 53355 | 27.3 | 23.0 | 2996 | 2668 | 100471 | 4298 |
| 500 | 400 | ±2.9 | 13.0 | 85.212 | 108.550 | 80247 | 57150 | 27.2 | 22.9 | 3210 | 2857 | 108228 | 4612 |
| 500 | 400 | ±2.9 | 14.0 | 91.217 | 116.200 | 85467 | 60848 | 27.1 | 22.9 | 3419 | 3042 | 115881 | 4919 |
| 500 | 400 | ±2.9 | 15.0 | 97.144 | 123.750 | 90554 | 64450 | 27.1 | 22.8 | 3622 | 3223 | 123427 | 5220 |
| 500 | 400 | ±2.9 | 16.0 | 102.992 | 131.200 | 95511 | 67957 | 27.0 | 22.8 | 3820 | 3398 | 130866 | 5515 |
| 500 | 400 | ±2.9 | 17.0 | 108.762 | 138.550 | 100337 | 71369 | 26.9 | 22.7 | 4013 | 3568 | 138194 | 5803 |
| 500 | 400 | ±2.9 | 18.0 | 114.453 | 145.800 | 105033 | 74688 | 26.8 | 22.6 | 4201 | 3734 | 145410 | 6085 |
| 600 | 300 | ±2.9 | 5.0 | 34.344 | 43.750 | 43092 | 14944 | 31.4 | 18.5 | 1436 | 996.3 | 34857 | 1712 |
| 600 | 300 | ±2.9 | 6.0 | 40.977 | 52.200 | 51258 | 17744 | 31.3 | 18.4 | 1709 | 1183 | 41554 | 2034 |
| 600 | 300 | ±2.9 | 7.0 | 47.532 | 60.550 | 58896 | 20387 | 31.2 | 18.3 | 1963 | 1359 | 48285 | 2348 |
| 600 | 300 | ±2.9 | 8.0 | 54.008 | 68.800 | 66651 | 23035 | 31.1 | 18.3 | 2222 | 1536 | 54829 | 2657 |
| 600 | 300 | ±2.9 | 9.0 | 60.406 | 76.950 | 74243 | 25619 | 31.1 | 18.2 | 2475 | 1708 | 61282 | 2958 |
| 600 | 300 | ±2.9 | 10.0 | 66.725 | 85.000 | 81674 | 28139 | 31.0 | 18.2 | 2722 | 1876 | 67644 | 3254 |
| 600 | 300 | ±2.9 | 11.0 | 72.966 | 92.950 | 87996 | 30357 | 30.8 | 18.1 | 2933 | 2024 | 74117 | 3538 |
| 600 | 300 | ±2.9 | 12.0 | 79.128 | 100.800 | 94926 | 32706 | 30.7 | 18.0 | 3164 | 2180 | 80309 | 3819 |
| 600 | 300 | ±2.9 | 13.0 | 85.212 | 108.550 | 101682 | 34990 | 30.6 | 18.0 | 3389 | 2333 | 86403 | 4094 |
| 600 | 300 | ±2.9 | 14.0 | 91.217 | 116.200 | 108265 | 37208 | 30.5 | 17.9 | 3609 | 2481 | 92396 | 4362 |
| 600 | 300 | ±2.9 | 15.0 | 97.144 | 123.750 | 114676 | 39363 | 30.4 | 17.8 | 3823 | 2624 | 98288 | 4624 |
| 600 | 300 | ±2.9 | 16.0 | 102.992 | 131.200 | 120915 | 41454 | 30.4 | 17.8 | 4030 | 2764 | 104076 | 4879 |
| 600 | 300 | ±2.9 | 17.0 | 108.762 | 138.550 | 126984 | 43482 | 30.3 | 17.7 | 4233 | 2899 | 109759 | 5128 |
| 600 | 300 | ±2.9 | 18.0 | 114.453 | 145.800 | 132883 | 45447 | 30.2 | 17.7 | 4429 | 3030 | 115334 | 5371 |
| 600 | 400 | ±3.4 | 5.0 | 38.269 | 48.750 | 51942 | 28093 | 32.6 | 24.0 | 1731 | 1405 | 56145 | 2302 |
| 600 | 400 | ±3.4 | 6.0 | 45.687 | 58.200 | 61843 | 33419 | 32.6 | 24.0 | 2061 | 1671 | 67024 | 2739 |
| 600 | 400 | ±3.4 | 7.0 | 53.027 | 67.550 | 71205 | 38480 | 32.5 | 23.9 | 2373 | 1924 | 77977 | 3169 |
| 600 | 400 | ±3.4 | 8.0 | 60.288 | 76.800 | 80670 | 43564 | 32.4 | 23.8 | 2689 | 2178 | 88672 | 3591 |
| 600 | 400 | ±3.4 | 9.0 | 67.471 | 85.950 | 89962 | 48547 | 32.4 | 23.8 | 2999 | 2427 | 99251 | 4005 |
| 600 | 400 | ±3.4 | 10.0 | 74.575 | 95.000 | 99081 | 53429 | 32.3 | 23.7 | 3303 | 2671 | 109716 | 4413 |
| 600 | 400 | ±3.4 | 11.0 | 81.601 | 103.950 | 107079 | 57787 | 32.1 | 23.6 | 3569 | 2889 | 120411 | 4809 |
| 600 | 400 | ±3.4 | 12.0 | 88.548 | 112.800 | 115674 | 62391 | 32.0 | 23.5 | 3856 | 3120 | 130680 | 5201 |
| 600 | 400 | ±3.4 | 13.0 | 95.417 | 121.550 | 124083 | 66889 | 32.0 | 23.5 | 4136 | 3344 | 140827 | 5585 |
| 600 | 400 | ±3.4 | 14.0 | 102.207 | 130.200 | 132307 | 71282 | 31.9 | 23.4 | 4410 | 3564 | 150850 | 5962 |
| 600 | 400 | ±3.4 | 15.0 | 108.919 | 138.750 | 140348 | 75573 | 31.8 | 23.3 | 4678 | 3779 | 160747 | 6332 |
| 600 | 400 | ±3.4 | 16.0 | 115.552 | 147.200 | 148206 | 79760 | 31.7 | 23.3 | 4940 | 3988 | 170515 | 6694 |
| 600 | 400 | ±3.4 | 17.0 | 122.107 | 155.550 | 155882 | 83846 | 31.7 | 23.2 | 5196 | 4192 | 180152 | 7050 |
| 600 | 400 | ±3.4 | 18.0 | 128.583 | 163.800 | 163378 | 87831 | 31.6 | 23.2 | 5446 | 4392 | 189656 | 7398 |
| 注：表中理论重量按密度7.85g/cm3计算，π按3.1416计算。 | | | | | | | | | | | | | |

* + 1. 方矩管壁厚的允许偏差，不得超过公称壁厚的±8%，弯角及焊缝区域壁厚除外。
    2. 方矩管弯曲角度的偏差不得大于±1°，测量方法参照GB/T 6728的有关规定。
    3. 方矩管弯角外圆弧半径值应符合表3的规定，测量方法参照GB/T 6728的有关规定。

1. 外圆弧半径值

|  |  |  |
| --- | --- | --- |
| 厚度t  mm | 外圆弧半径值  mm | |
| 碳素钢（Ral≤320MPa） | 低合金钢（Ral＞320MPa） |
| t≤3 | 1.0~2.5t | 1.5~2.5t |
| 3＜t≤6 | 1.5~2.5t | 2.0~3.0t |
| 6＜t≤10 | 2.0~3.0t | 2.0~3.5t |
| t＞10 | 2.0~3.5t | 2.5~4.0t |

* + 1. 方矩管截面的平面部分凸凹度应不超过该边长的0.6%，但最小值为0.4mm。测量方法参照GB/T 6728。
    2. 方矩管尺寸应在距离端部不小于200mm处测量。
  1. 长度及允许偏差
     1. 方矩管通常交货长度为4000mm~12000mm。经供需双方协商，并在合同中注明，可提供其他长度的方矩管。
     2. 方矩管按定尺或倍尺长度交贷时，应在合同中注明。其长度允许偏差应符合表4的规定。合同中未注明定尺精度时按普通定尺交货。
     3. 允许交付不小于2000mm的短尺和非定尺方矩管，短尺和非定尺管重量应不超过总交货量的5%，对于理论重量大于20kg/m的方矩管应不超过总交货量的10%。

1. 定尺长度及允许偏差

|  |  |  |
| --- | --- | --- |
| 定尺精度  mm | 长度  mm | 允许偏差  mm |
| 普通定尺 | 4000~12000 | +35  0 |
| 精确定尺 | 4000~6000 | +5  0 |
| ＞6000~12000 | +10  0 |

* 1. 外形
     1. 方矩管弯曲度每米不得大于1.5mm，总弯曲度不得大于总长度的0.15%。测量方法参照GB/T 6728。
     2. 经供需双方协商并在合同中注明，可测量方矩管的扭转度，扭转度值及测量方法应符合GB/T 6728中的规定。经供需双方协商并在合同中注明，可采用倾角仪直接测量倾斜角度。
     3. 方矩管的端部应切得正直，其锯切斜度应符合表4的规定。允许存在由切断方法造成的较小变形和毛刺

1. 锯切斜度

|  |  |
| --- | --- |
| 边长  mm | 锯切斜度应小于  mm |
| 边长≤100 | 1.8 |
| 100＜边长≤300 | 3.5 |
| 300＜边长≤500 | 5.0 |

* 1. 重量及允许偏差

方矩管通常以实际重量交货。当以理论重量交货时，实际重量与理论重量的允许偏差为

1. 技术要求
   1. 牌号及化学成分
      1. 方矩管的牌号和化学成分（熔炼分析）应符合GB/T 699、GB/T 700、GB/T 1591、GB/T 3524、GB/T 33162等标准的规定。
      2. 根据需方要求，并在合同中注明，也可提供其他牌号的方矩管。
      3. 方矩管成品化学成分允许偏差应符合GB/T 222的规定。
   2. 加工方法

方矩管产品以合格冷轧或热轧带钢产品为原料，经过冷弯变形、焊接、精整、定尺剪等工序生产，经过供需双方协商，并在合同中注明，也可以其它工艺生产。

* 1. 交货状态

方矩管通常以冷加工状态交货，如有特殊要求由供需双方协商确定，并在合同中注明。

* 1. 力学性能
     1. 方矩管产品屈服强度、抗拉强度、断后伸长率应符合表6的规定，其他特殊需求由供需双方协商确定。

1. 力学性能

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 产品屈服  强度等级 | 壁厚t  mm | 下屈服强度Ral  MPa | 抗拉强度Rm  MPa | 断后伸长率A  % |
| 195 | - | ≥195 | 315~490 | 30 |
| 215 | - | ≥215 | 335~510 | 28 |
| 235 | ≤19 | ≥235 | 370~560 | ≥24 |
| 345 | ≥345 | 470~680 | ≥20 |
| 390 | ≥390 | 490~700 | ≥17 |
| 420 | ≥420 | 520~730 | 协议 |
| 460 | ≥460 | 550~770 | 协议 |
| 500 | ≥500 | 610~820 | 协议 |
| 550 | ≥550 | 670~880 | 协议 |
| 620 | ≥620 | 710~940 | 协议 |
| 690 | ≥690 | 770~1000 | 协议 |
| 750 | ≥750 | 750~1010 | 协议 |

* + 1. 经供需双方协商，并在合同中注明，可对厚度不小于6 mm的方矩管进行冲击试验。冲击试验结果及其复验应符合GB/T 699、GB/T 700、GB/T714、GB/T1591、GB/T4171等相关标准的规定。
  1. 表面质量
     1. 方矩管的表面不得有裂纹、结疤、折叠、夹渣和端面分层，允许有深度（高度）不超过厚度公差之半的局部麻点、划痕及其他轻微缺陷，但应保证方矩管缺陷处的最小厚度。
     2. 方矩管的表面缺陷允许用修磨方法清理，但清理后的方矩管厚度不小于最小允许厚度。
     3. 当需方对表面质量有特殊要求时，应由供需双方协商，并在合同中注明。
  2. 焊缝质量
     1. 方矩管焊缝处不得有开焊、搭焊、烧穿及超过厚度偏差之半的错位与弧坑。
     2. 焊缝处的缺陷允许补焊、打磨，但补焊修磨后应达到本标准所规定的要求。
     3. 焊缝处的外毛刺应予以清除，清除后的焊缝余高通常不超过0.5mm。焊缝处的内毛刺一般不清除，如有特殊要求，由供需双方协商确定。
     4. 经供需双方协商，并在合同中注明，可检验焊缝的力学性能和工艺性能，以及进行无损检测。

1. 测试方法

每批方矩管的检验项目、取样数量、取样部位及试验方法应符合表6的规定。

1. 取样部位与试验方法

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 序号 | 检验项目 | 取样数量 | 取样部位 | 试验方法 |
| 1 | 化学成分 | 1个／每炉 | 按相关产品标准 | |
| 2 | 拉伸试验a,b | 1个／每批 | GB/ T 2975 〈纵向试样〉 | GB/T 228.1 |
| 3 | 冲击试验a,b | 1个／每批 | GB/ T 2975 〈纵向试样〉 | GB/T 229 |
| 4 | 焊缝 | 6.6.4 | 6.6.4 | GB/T 2650、GB/T 2651 |
| 5 | 尺寸 | 逐根 | - | 量具、样板 |
| 6 | 表面 | 逐根 | - | 目视 |
| 1. 当G/T 2975中无相关规定时，应在产品平板部分取纵向样。平板部分应不包括焊缝及角部。 2. 对于矩形管，取样位置应在宽面上〔不包括焊缝〕。 | | | | |

1. 检验规则
   1. 检查和验收

方矩管的检查与验收由供方质检部门进行。

* 1. 组批规则

方矩管应成批验收，每批由同一牌号、同一原料批次、同一规格尺寸、同一工艺的产品组成。外周长不大于400mm的产品每批重量不得超过60t，外周长大于400mm的产品每批重量不得超过100t。

* 1. 复验与判定

方矩管的复验与判定规则应符合GB/T 2101的规定。

1. 包装、标志和质量证明书
   1. 包装
      1. 方矩管一般采用捆扎包装交货，成捆包装的方矩管一端需放置整齐。每捆应由同一批号的方矩管组成。每捆最大重量应符合表7的规定。方矩管应用包装用钢带或扎箍捆扎牢固。方矩管长度不大于7m捆扎3处，7m～10m捆扎4处，大于10m捆扎5处，两端处的捆扎位置距离端部不大于lm。
2. 捆扎重量

|  |  |
| --- | --- |
| 理论重量  kg/m | 每捆最大重量  t |
| ＜1 | 1 |
| 1~＜10 | 3 |
| 10~＜20 | 5 |
| ≥20 | 10 |

* + 1. 表面质量要求较高的方矩管采用装箱包装，包装箱应坚固。每箱应由同一批号的方矩管组成。如有不同批号并箱时，每个批号应单独打捆再装入箱内。每箱方矩管的重量不得超过4t。包装箱的外部应用包装用钢带或其他方法紧固。
    2. 对于理论重量大于20kg/m的方矩管可以散装交货。
  1. 标志
     1. 捆扎或装箱的方矩管每捆（箱）应挂有两个以上的标牌，也可使用粘贴标签或其他不易脱落标志的方法。标牌或标签上面应注明供方名称和商标，产品规格、原料牌号、生产批号、产品标准号、重量、定尺长度、制造日期和供方质检部门的印记。
     2. 散装交货的每根方矩管应在靠近端部的表面粘贴标签或喷印标志，标记应清晰明显，不易脱落。标记上应注明供方名称和商标，产品规格、原料牌号、生产批号、产品标准号、重量、定尺长度、制造日期和供方质检部门的印记。
     3. 标记示例参照GB/T 6728。
  2. 质量证明书

质量证明书应符合GB/T 2101的有关规定。

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