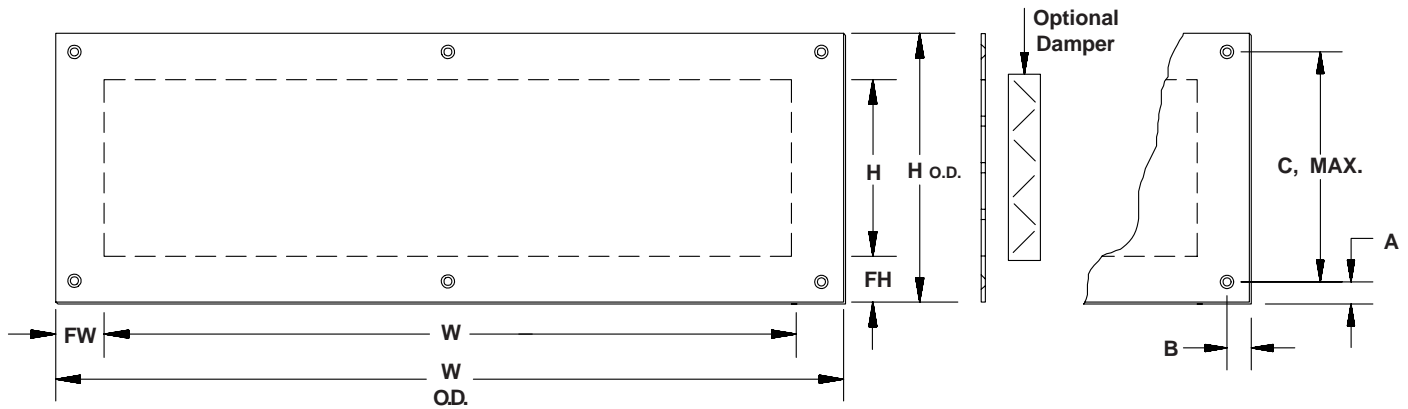


PATTERN SA031 ARCHITECTURAL STAMPED GRILLE



PATTERN SA031

| 5/16" ROUND HOLES, 7/16" O.C., STAGGERED PATTERN | | | | | | | | | | | | 50% OPEN | | |
|--|----------|----------|--------------|----------|----------|--------------|----------|----------|--------------|----------|----------|--------------|----------|----------|
| NO. OF HOLES | W INCHES | H INCHES | NO. OF HOLES | W INCHES | H INCHES | NO. OF HOLES | W INCHES | H INCHES | NO. OF HOLES | W INCHES | H INCHES | NO. OF HOLES | W INCHES | H INCHES |
| 1 | 0.312 | 0.312 | 21 | 9.052 | 7.882 | 41 | 17.792 | 15.452 | 61 | 26.532 | 23.022 | 81 | 35.272 | 30.592 |
| 2 | 0.749 | 0.691 | 22 | 9.489 | 8.261 | 42 | 18.229 | 15.831 | 62 | 26.969 | 23.401 | 82 | 35.709 | 30.971 |
| 3 | 1.186 | 1.069 | 23 | 9.926 | 8.639 | 43 | 18.666 | 16.209 | 63 | 27.406 | 23.779 | 83 | 36.146 | 31.349 |
| 4 | 1.623 | 1.448 | 24 | 10.363 | 9.018 | 44 | 19.103 | 16.588 | 64 | 27.843 | 24.158 | 84 | 36.583 | 31.728 |
| 5 | 2.060 | 1.826 | 25 | 10.800 | 9.396 | 45 | 19.540 | 16.966 | 65 | 28.280 | 24.536 | 85 | 37.020 | 32.106 |
| 6 | 2.497 | 2.205 | 26 | 11.237 | 9.775 | 46 | 19.977 | 17.345 | 66 | 28.717 | 24.915 | 86 | 37.457 | 32.485 |
| 7 | 2.934 | 2.583 | 27 | 11.674 | 10.153 | 47 | 20.414 | 17.723 | 67 | 29.154 | 25.293 | 87 | 37.894 | 32.863 |
| 8 | 3.371 | 2.962 | 28 | 12.111 | 10.532 | 48 | 20.851 | 18.102 | 68 | 29.591 | 25.672 | 88 | 38.331 | 33.242 |
| 9 | 3.808 | 3.340 | 29 | 12.548 | 10.910 | 49 | 21.288 | 18.480 | 69 | 30.028 | 26.050 | 89 | 38.768 | 33.620 |
| 10 | 4.245 | 3.719 | 30 | 12.985 | 11.289 | 50 | 21.725 | 18.859 | 70 | 30.465 | 26.429 | 90 | 39.205 | 33.999 |
| 11 | 4.682 | 4.097 | 31 | 13.422 | 11.667 | 51 | 22.162 | 19.237 | 71 | 30.902 | 26.807 | 91 | 39.642 | 34.377 |
| 12 | 5.119 | 4.476 | 32 | 13.859 | 12.046 | 52 | 22.599 | 19.616 | 72 | 31.339 | 27.186 | 92 | 40.079 | 34.756 |
| 13 | 5.556 | 4.854 | 33 | 14.296 | 12.424 | 53 | 23.036 | 19.994 | 73 | 31.776 | 27.564 | 93 | 40.516 | 35.134 |
| 14 | 5.993 | 5.233 | 34 | 14.733 | 12.803 | 54 | 23.473 | 20.373 | 74 | 32.213 | 27.943 | 94 | 40.953 | 35.513 |
| 15 | 6.430 | 5.611 | 35 | 15.170 | 13.181 | 55 | 23.910 | 20.751 | 75 | 32.650 | 28.321 | 95 | 41.390 | 35.891 |
| 16 | 6.867 | 5.990 | 36 | 15.607 | 13.560 | 56 | 24.347 | 21.130 | 76 | 33.087 | 28.700 | 96 | 41.827 | 36.270 |
| 17 | 7.304 | 6.368 | 37 | 16.044 | 13.938 | 57 | 24.784 | 21.508 | 77 | 33.524 | 29.078 | 97 | 42.264 | 36.648 |
| 18 | 7.741 | 6.747 | 38 | 16.481 | 14.317 | 58 | 25.221 | 21.887 | 78 | 33.961 | 29.457 | 98 | 42.701 | 37.027 |
| 19 | 8.178 | 7.125 | 39 | 16.918 | 14.695 | 59 | 25.658 | 22.265 | 79 | 34.398 | 29.835 | 99 | 43.138 | 37.405 |
| 20 | 8.615 | 7.504 | 40 | 17.355 | 15.074 | 60 | 26.095 | 22.644 | 80 | 34.835 | 30.214 | 100 | 43.575 | 37.784 |

| Qty. | O.D. Size W x H | Duct Size W x H | Pattern Size W x H | No. of Patterns W x H | Material | Thickness |
|------|--------------------|--------------------|-----------------------|-----------------------------|----------|-----------|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| Minimum Flange Allowed "F" | Actual "F" | | Mounting Holes | | | | Mounting Option | Finish | O.B.D. | Tag |
|----------------------------|------------|----|----------------|---|-----------|--|-----------------|--------|--------|-----|
| | FW | FH | A & B | C | No. Holes | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

SCREW SIZE: #8 x 1", #10 x 1-1/2", Other _____
HEAD STYLE: Flat Head Phillips Flat Head Slotted Pan Head Phillips Other _____
SCREW MATERIAL: Steel Stainless Brass Bronze **SCREW FINISH:** Mill As Grille Painted _____
 NOTE: Corners of holes may have small radii as required for manufacturing. Mill, Lacquered / Oxidized & Lacquered

| | | | | | |
|-------------------|--|-----------------|-----------------|-----------------|--|
| Project | | Location | | | |
| Engineer | | | | | |
| Architect | | | Dwg. No. | SD-SA031 | |
| Contractor | | | Date | 02/06 | |

KEES INCORPORATED
 400 S. Industrial Dr. • P.O. Box L
 Elkhart Lake, WI 53020
 Phone: (920) 876-3391
 Fax: (920) 876-3065
 Website: www.kees.com

PATTERN SA031

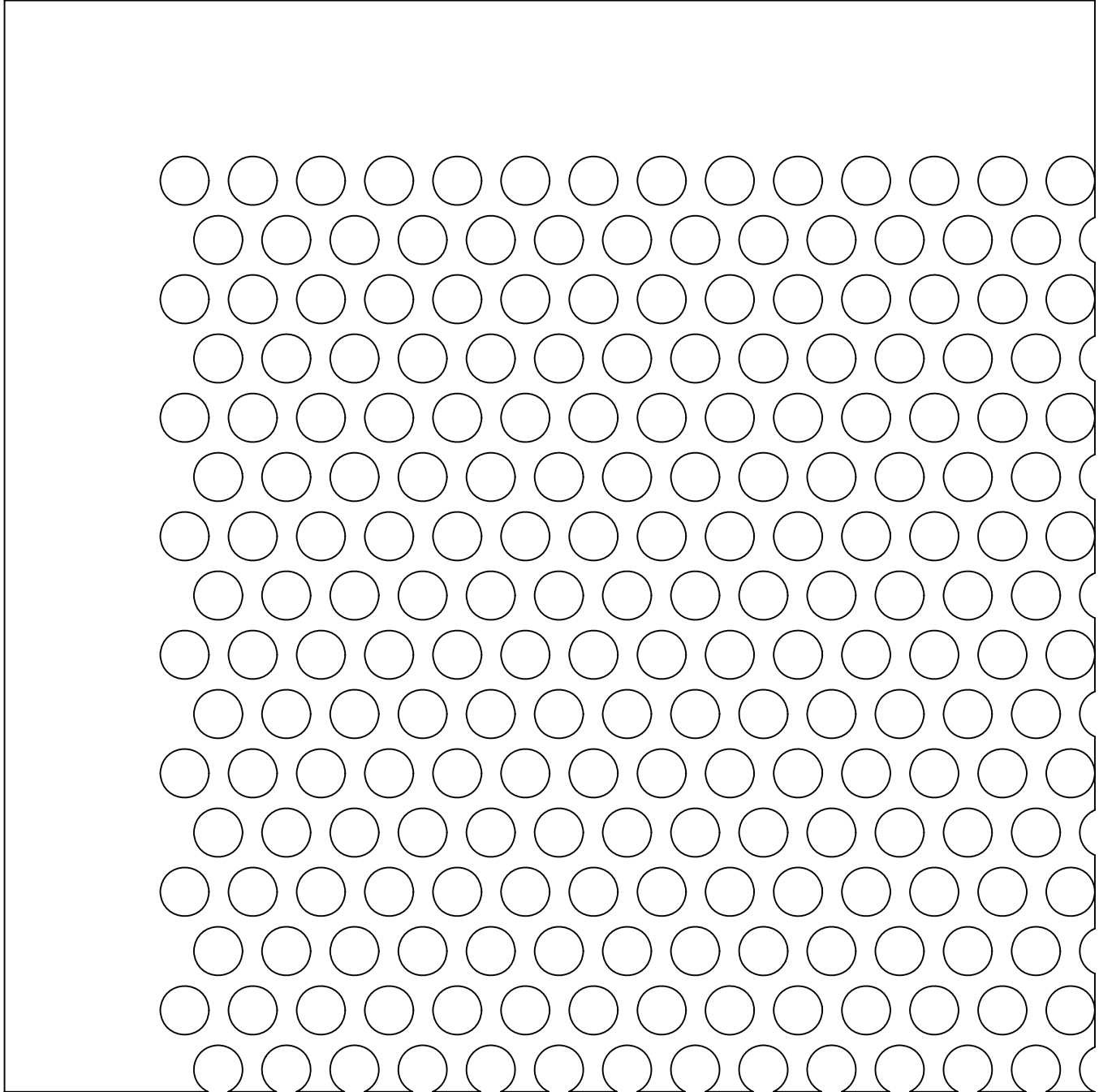
| 5/16" ROUND HOLES, 7/16" O.C., STAGGERED PATTERN | | | | | | | | | | 50% OPEN |
|--|----------|----------|--------------|----------|----------|--------------|----------|----------|--------------|----------|
| NO. OF HOLES | W INCHES | H INCHES | NO. OF HOLES | W INCHES | H INCHES | NO. OF HOLES | W INCHES | H INCHES | NO. OF HOLES | H INCHES |
| 101 | 44.012 | 38.162 | 161 | 70.232 | 60.872 | 221 | 96.452 | 83.582 | 281 | 106.292 |
| 102 | 44.449 | 38.541 | 162 | 70.669 | 61.251 | 222 | 96.889 | 83.961 | 282 | 106.671 |
| 103 | 44.886 | 38.919 | 163 | 71.106 | 61.629 | 223 | 97.326 | 84.339 | 283 | 107.049 |
| 104 | 45.323 | 39.298 | 164 | 71.543 | 62.008 | 224 | 97.763 | 84.718 | 284 | 107.428 |
| 105 | 45.760 | 39.676 | 165 | 71.980 | 62.386 | 225 | 98.200 | 85.096 | 285 | 107.806 |
| 106 | 46.197 | 40.055 | 166 | 72.417 | 62.765 | 226 | 98.637 | 85.475 | 286 | 108.185 |
| 107 | 46.634 | 40.433 | 167 | 72.854 | 63.143 | 227 | 99.074 | 85.853 | 287 | 108.563 |
| 108 | 47.071 | 40.812 | 168 | 73.291 | 63.522 | 228 | 99.511 | 86.232 | 288 | 108.942 |
| 109 | 47.508 | 41.190 | 169 | 73.728 | 63.900 | 229 | 99.948 | 86.610 | 289 | 109.320 |
| 110 | 47.945 | 41.569 | 170 | 74.165 | 64.279 | 230 | 100.385 | 86.989 | 290 | 109.699 |
| 111 | 48.382 | 41.947 | 171 | 74.602 | 64.657 | 231 | 100.822 | 87.367 | 291 | 110.077 |
| 112 | 48.819 | 42.326 | 172 | 75.039 | 65.036 | 232 | 101.259 | 87.746 | 292 | 110.456 |
| 113 | 49.256 | 42.704 | 173 | 75.476 | 65.414 | 233 | 101.696 | 88.124 | 293 | 110.834 |
| 114 | 49.693 | 43.083 | 174 | 75.913 | 65.793 | 234 | 102.133 | 88.503 | 294 | 111.213 |
| 115 | 50.130 | 43.461 | 175 | 76.350 | 66.171 | 235 | 102.570 | 88.881 | 295 | 111.591 |
| 116 | 50.567 | 43.840 | 176 | 76.787 | 66.550 | 236 | 103.007 | 89.260 | 296 | 111.970 |
| 117 | 51.004 | 44.218 | 177 | 77.224 | 66.928 | 237 | 103.444 | 89.638 | 297 | 112.348 |
| 118 | 51.441 | 44.597 | 178 | 77.661 | 67.307 | 238 | 103.881 | 90.017 | 298 | 112.727 |
| 119 | 51.878 | 44.975 | 179 | 78.098 | 67.685 | 239 | 104.318 | 90.395 | 299 | 113.105 |
| 120 | 52.315 | 45.354 | 180 | 78.535 | 68.064 | 240 | 104.755 | 90.774 | 300 | 113.484 |
| 121 | 52.752 | 45.732 | 181 | 78.972 | 68.442 | 241 | 105.192 | 91.152 | 301 | 113.862 |
| 122 | 53.189 | 46.111 | 182 | 79.409 | 68.821 | 242 | 105.629 | 91.531 | 302 | 114.241 |
| 123 | 53.626 | 46.489 | 183 | 79.846 | 69.199 | 243 | 106.066 | 91.909 | 303 | 114.619 |
| 124 | 54.063 | 46.868 | 184 | 80.283 | 69.578 | 244 | 106.503 | 92.288 | 304 | 114.998 |
| 125 | 54.500 | 47.246 | 185 | 80.720 | 69.956 | 245 | 106.940 | 92.666 | 305 | 115.376 |
| 126 | 54.937 | 47.625 | 186 | 81.157 | 70.335 | 246 | 107.377 | 93.045 | 306 | 115.755 |
| 127 | 55.374 | 48.003 | 187 | 81.594 | 70.713 | 247 | 107.814 | 93.423 | 307 | 116.133 |
| 128 | 55.811 | 48.382 | 188 | 82.031 | 71.092 | 248 | 108.251 | 93.802 | 308 | 116.512 |
| 129 | 56.248 | 48.760 | 189 | 82.468 | 71.470 | 249 | 108.688 | 94.180 | 309 | 116.890 |
| 130 | 56.685 | 49.139 | 190 | 82.905 | 71.849 | 250 | 109.125 | 94.559 | 310 | 117.269 |
| 131 | 57.122 | 49.517 | 191 | 83.342 | 72.227 | 251 | 109.562 | 94.937 | 311 | 117.647 |
| 132 | 57.559 | 49.896 | 192 | 83.779 | 72.606 | 252 | 109.999 | 95.316 | 312 | 118.026 |
| 133 | 57.996 | 50.274 | 193 | 84.216 | 72.984 | 253 | 110.436 | 95.694 | 313 | 118.404 |
| 134 | 58.433 | 50.653 | 194 | 84.653 | 73.363 | 254 | 110.873 | 96.073 | 314 | 118.783 |
| 135 | 58.870 | 51.031 | 195 | 85.090 | 73.741 | 255 | 111.310 | 96.451 | 315 | 119.161 |
| 136 | 59.307 | 51.410 | 196 | 85.527 | 74.120 | 256 | 111.747 | 96.830 | | |
| 137 | 59.744 | 51.788 | 197 | 85.964 | 74.498 | 257 | 112.184 | 97.208 | | |
| 138 | 60.181 | 52.167 | 198 | 86.401 | 74.877 | 258 | 112.621 | 97.587 | | |
| 139 | 60.618 | 52.545 | 199 | 86.838 | 75.255 | 259 | 113.058 | 97.965 | | |
| 140 | 61.055 | 52.924 | 200 | 87.275 | 75.634 | 260 | 113.495 | 98.344 | | |
| 141 | 61.492 | 53.302 | 201 | 87.712 | 76.012 | 261 | 113.932 | 98.722 | | |
| 142 | 61.929 | 53.681 | 202 | 88.149 | 76.391 | 262 | 114.369 | 99.101 | | |
| 143 | 62.366 | 54.059 | 203 | 88.586 | 76.769 | 263 | 114.806 | 99.479 | | |
| 144 | 62.803 | 54.438 | 204 | 89.023 | 77.148 | 264 | 115.243 | 99.858 | | |
| 145 | 63.240 | 54.816 | 205 | 89.460 | 77.526 | 265 | 115.680 | 100.236 | | |
| 146 | 63.677 | 55.195 | 206 | 89.897 | 77.905 | 266 | 116.117 | 100.615 | | |
| 147 | 64.114 | 55.573 | 207 | 90.334 | 78.283 | 267 | 116.554 | 100.993 | | |
| 148 | 64.551 | 55.952 | 208 | 90.771 | 78.662 | 268 | 116.991 | 101.372 | | |
| 149 | 64.988 | 56.330 | 209 | 91.208 | 79.040 | 269 | 117.428 | 101.750 | | |
| 150 | 65.425 | 56.709 | 210 | 91.645 | 79.419 | 270 | 117.865 | 102.129 | | |
| 151 | 65.862 | 57.087 | 211 | 92.082 | 79.797 | 271 | 118.302 | 102.507 | | |
| 152 | 66.299 | 57.466 | 212 | 92.519 | 80.176 | 272 | 118.739 | 102.886 | | |
| 153 | 66.736 | 57.844 | 213 | 92.956 | 80.554 | 273 | 119.176 | 103.264 | | |
| 154 | 67.173 | 58.223 | 214 | 93.393 | 80.933 | 274 | | 103.643 | | |
| 155 | 67.610 | 58.601 | 215 | 93.830 | 81.311 | 275 | | 104.021 | | |
| 156 | 68.047 | 58.980 | 216 | 94.267 | 81.690 | 276 | | 104.400 | | |
| 157 | 68.484 | 59.358 | 217 | 94.704 | 82.068 | 277 | | 104.778 | | |
| 158 | 68.921 | 59.737 | 218 | 95.141 | 82.447 | 278 | | 105.157 | | |
| 159 | 69.358 | 60.115 | 219 | 95.578 | 82.825 | 279 | | 105.535 | | |
| 160 | 69.795 | 60.494 | 220 | 96.015 | 83.204 | 280 | | 105.914 | | |



KEES INCORPORATED
 400 S. Industrial Dr. • P.O. Box L
 Elkhart Lake, WI 53020

Phone: (920) 876-3391
 Fax: (920) 876-3065
 Website: www.kees.com

DECORATIVE STAMPED GRILLE HOLE PATTERN
PATTERN SA031 - ROUND, STAGGERED
FULL SCALE



KEES INCORPORATED
400 S. Industrial Dr. • P.O. Box L
Elkhart Lake, WI 53020

Phone: (920) 876-3391
Fax: (920) 876-3065
Website: www.kees.com