

## Engineering Data

RE5 Series Return Air Registers and Grilles  
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| Average Face Velocity |            | 400   | 500   | 600   | 700   | 800   | 900   | 1000  |
|-----------------------|------------|-------|-------|-------|-------|-------|-------|-------|
| 6 x 6                 | CFM        | 30    | 37    | 44    | 52    | 59    | 67    | 74    |
|                       | Ak 0.07 Ps | 0.010 | 0.013 | 0.018 | 0.023 | 0.030 | 0.038 | 0.049 |
| 8 x 8                 | CFM        | 87    | 108   | 130   | 152   | 174   | 195   | 217   |
|                       | Ak 0.22 Ps | 0.010 | 0.013 | 0.018 | 0.023 | 0.031 | 0.039 | 0.049 |
| 10 x 10               | CFM        | 160   | 200   | 240   | 280   | 320   | 360   | 400   |
|                       | Ak 0.40 Ps | 0.010 | 0.014 | 0.018 | 0.024 | 0.031 | 0.040 | 0.050 |
| 12 x 6                | CFM        | 103   | 129   | 155   | 180   | 206   | 232   | 258   |
|                       | Ak 0.26 Ps | 0.010 | 0.014 | 0.018 | 0.024 | 0.031 | 0.039 | 0.049 |
| 14 x 6                | CFM        | 127   | 159   | 191   | 223   | 255   | 287   | 319   |
|                       | Ak 0.32 Ps | 0.010 | 0.014 | 0.018 | 0.024 | 0.031 | 0.040 | 0.050 |
| 14 x 8                | CFM        | 184   | 230   | 276   | 322   | 368   | 414   | 460   |
|                       | Ak 0.46 Ps | 0.011 | 0.014 | 0.018 | 0.024 | 0.032 | 0.040 | 0.050 |
| 12 x 12               | CFM        | 249   | 311   | 373   | 435   | 497   | 559   | 622   |
|                       | Ak 0.62 Ps | 0.011 | 0.014 | 0.018 | 0.025 | 0.032 | 0.041 | 0.051 |
| 24 x 8                | CFM        | 345   | 431   | 517   | 603   | 689   | 775   | 862   |
|                       | Ak 0.86 Ps | 0.011 | 0.014 | 0.019 | 0.025 | 0.032 | 0.041 | 0.052 |
| 18 x 12               | CFM        | 392   | 490   | 589   | 687   | 785   | 883   | 981   |
|                       | Ak 0.98 Ps | 0.012 | 0.014 | 0.019 | 0.025 | 0.033 | 0.041 | 0.052 |
| 30 x 8                | CFM        | 440   | 550   | 660   | 770   | 880   | 990   | 1100  |
|                       | Ak 1.10 Ps | 0.012 | 0.015 | 0.019 | 0.025 | 0.033 | 0.042 | 0.052 |
| 24 x 12               | CFM        | 534   | 668   | 801   | 935   | 1068  | 1202  | 1336  |
|                       | Ak 1.34 Ps | 0.012 | 0.015 | 0.019 | 0.026 | 0.033 | 0.042 | 0.053 |
| 18 x 18               | CFM        | 604   | 756   | 907   | 1058  | 1209  | 1360  | 1511  |
|                       | Ak 1.51 Ps | 0.013 | 0.015 | 0.019 | 0.026 | 0.033 | 0.042 | 0.054 |
| 30 x 12               | CFM        | 674   | 843   | 1011  | 1180  | 1348  | 1517  | 1685  |
|                       | Ak 1.69 Ps | 0.013 | 0.015 | 0.019 | 0.026 | 0.034 | 0.042 | 0.054 |
| 20 x 20               | CFM        | 751   | 939   | 1127  | 1315  | 1502  | 1690  | 1878  |
|                       | Ak 1.88 Ps | 0.013 | 0.015 | 0.019 | 0.026 | 0.034 | 0.043 | 0.055 |
| 36 x 12               | CFM        | 812   | 1015  | 1218  | 1422  | 1625  | 1828  | 2031  |
|                       | Ak 2.03 Ps | 0.014 | 0.015 | 0.019 | 0.026 | 0.034 | 0.043 | 0.055 |
| 24 x 20               | CFM        | 903   | 1129  | 1355  | 1581  | 1807  | 2033  | 2258  |
|                       | Ak 2.26 Ps | 0.014 | 0.016 | 0.019 | 0.026 | 0.034 | 0.043 | 0.055 |
| 30 x 18               | CFM        | 1016  | 1270  | 1524  | 1778  | 2032  | 2286  | 2540  |
|                       | Ak 2.54 Ps | 0.014 | 0.016 | 0.020 | 0.027 | 0.034 | 0.043 | 0.056 |
| 24 x 24               | CFM        | 1083  | 1354  | 1625  | 1895  | 2166  | 2437  | 2708  |
|                       | Ak 2.71 Ps | 0.014 | 0.016 | 0.020 | 0.027 | 0.034 | 0.043 | 0.056 |
| 36 x 18               | CFM        | 1216  | 1519  | 1823  | 2127  | 2431  | 2735  | 3039  |
|                       | Ak 3.04 Ps | 0.014 | 0.016 | 0.020 | 0.027 | 0.035 | 0.043 | 0.056 |
| 30 x 24               | CFM        | 1346  | 1683  | 2019  | 2356  | 2692  | 3029  | 3366  |
|                       | Ak 3.37 Ps | 0.015 | 0.016 | 0.020 | 0.027 | 0.035 | 0.044 | 0.057 |
| 36 x 24               | CFM        | 1602  | 2003  | 2403  | 2804  | 3204  | 3605  | 4005  |
|                       | Ak 4.01 Ps | 0.014 | 0.016 | 0.020 | 0.027 | 0.035 | 0.044 | 0.057 |
| 30 x 30               | CFM        | 1665  | 2081  | 2497  | 2913  | 3330  | 3746  | 4162  |
|                       | Ak 4.16 Ps | 0.014 | 0.016 | 0.020 | 0.027 | 0.035 | 0.044 | 0.057 |
| 36 x 30               | CFM        | 1972  | 2465  | 2958  | 3451  | 3944  | 4437  | 4929  |
|                       | Ak 4.93 Ps | 0.014 | 0.016 | 0.021 | 0.028 | 0.035 | 0.044 | 0.056 |
| 48 x 24               | CFM        | 2091  | 2614  | 3137  | 3660  | 4183  | 4705  | 5228  |
|                       | Ak 5.23 Ps | 0.013 | 0.016 | 0.021 | 0.028 | 0.036 | 0.045 | 0.055 |
| 36 x 36               | CFM        | 2325  | 2906  | 3487  | 4068  | 4650  | 5231  | 5812  |
|                       | Ak 5.81 Ps | 0.012 | 0.016 | 0.021 | 0.028 | 0.036 | 0.045 | 0.053 |
| 48 x 36               | CFM        | 2981  | 3726  | 4471  | 5216  | 5961  | 6706  | 7452  |
|                       | Ak 7.45 Ps | 0.012 | 0.013 | 0.021 | 0.028 | 0.036 | 0.045 | 0.044 |
| 48 x 48               | CFM        | 3751  | 4689  | 5626  | 6564  | 7502  | 8439  | 9377  |
|                       | Ak 9.38 Ps | 0.012 | 0.013 | 0.021 | 0.029 | 0.037 | 0.046 | 0.044 |

## TG Transfer Grilles (Page 57)

| * Average Face Velocity |            | 200  | 300  | 400  | 500  | 600  | 700  | 800  |
|-------------------------|------------|------|------|------|------|------|------|------|
| 8x8                     | cfm        | 90   | 130  | 180  | 220  | 265  | 310  | 350  |
|                         | Ak .44 PL  | .08  | .17  | .30  | .47  | .68  | .93  | 1.20 |
| 14x6                    | cfm        | 110  | 165  | 220  | 275  | 330  | 385  | 440  |
|                         | Ak .55 PL  | .07  | .16  | .30  | .46  | .65  | .90  | 1.20 |
| 12x8                    | cfm        | 130  | 190  | 255  | 320  | 385  | 450  | 510  |
|                         | Ak .64 PL  | .07  | .16  | .29  | .45  | .64  | .88  | 1.10 |
| 14x8                    | cfm        | 150  | 220  | 295  | 370  | 445  | 520  | 590  |
|                         | Ak .74 PL  | .07  | .16  | .28  | .44  | .63  | .87  | 1.10 |
| 20x6                    | cfm        | 155  | 235  | 310  | 390  | 470  | 545  | 625  |
|                         | Ak .78 PL  | .07  | .16  | .28  | .44  | .62  | .86  | 1.10 |
| 12x12                   | cfm        | 185  | 280  | 370  | 465  | 560  | 650  | 745  |
|                         | Ak .93 PL  | .07  | .15  | .27  | .43  | .61  | .84  | 1.10 |
| 30x6                    | cfm        | 225  | 335  | 450  | 560  | 670  | 785  | 895  |
|                         | Ak 1.12 PL | .07  | .15  | .26  | .42  | .60  | .82  | 1.10 |
| 16x12                   | cfm        | 240  | 360  | 475  | 595  | 715  | 835  | 950  |
|                         | Ak 1.19 PL | .07  | .15  | .26  | .41  | .59  | .81  | 1.10 |
| 18x12                   | cfm        | 265  | 400  | 530  | 665  | 800  | 930  | 1065 |
|                         | Ak 1.33 PL | .07  | .15  | .26  | .41  | .58  | .88  | 1.00 |
| 20x12                   | cfm        | 290  | 440  | 585  | 730  | 875  | 1020 | 1170 |
|                         | Ak 1.46 PL | .06  | .15  | .26  | .40  | .58  | .79  | 1.00 |
| 16x16                   | cfm        | 310  | 460  | 615  | 770  | 925  | 1080 | 1230 |
|                         | Ak 1.54 PL | .06  | .14  | .25  | .40  | .57  | .78  | 1.00 |
| 24x12                   | cfm        | 350  | 525  | 700  | 875  | 1050 | 1225 | 1400 |
|                         | Ak 1.75 PL | .06  | .14  | .25  | .39  | .56  | .77  | 1.00 |
| 18x18                   | cfm        | 390  | 585  | 780  | 975  | 1170 | 1365 | 1560 |
|                         | Ak 1.95 PL | .06  | .14  | .25  | .39  | .55  | .76  | .99  |
| 30x12                   | cfm        | 435  | 650  | 870  | 1085 | 1300 | 1520 | 1740 |
|                         | Ak 2.17 PL | .06  | .14  | .25  | .38  | .54  | .75  | .98  |
| 20x20                   | cfm        | 485  | 730  | 970  | 1210 | 1450 | 1690 | 1940 |
|                         | Ak 2.42 PL | .06  | .14  | .24  | .38  | .54  | .74  | .97  |
| 24x18                   | cfm        | 510  | 765  | 1020 | 1275 | 1530 | 1785 | 2040 |
|                         | Ak 2.55 PL | .06  | .14  | .24  | .37  | .53  | .73  | .96  |
| 30x18                   | cfm        | 650  | 970  | 1290 | 1620 | 1940 | 2260 | 2580 |
|                         | Ak 3.23 PL | .06  | .13  | .23  | .36  | .51  | .71  | .93  |
| 24x24                   | cfm        | 680  | 1020 | 1360 | 1700 | 2040 | 2380 | 2720 |
|                         | Ak 3.40 PL | .06  | .13  | .23  | .36  | .51  | .70  | .92  |
| 30x24                   | cfm        | 840  | 1250 | 1670 | 2090 | 2510 | 2930 | 3340 |
|                         | Ak 4.18 PL | .06  | .13  | .22  | .35  | .50  | .68  | .89  |
| 30x30                   | cfm        | 1030 | 1550 | 2060 | 2580 | 3090 | 3610 | 4120 |
|                         | Ak 5.15 PL | .05  | .12  | .22  | .34  | .48  | .66  | .86  |

\* Velocity measured 1" from face.

## 20 Round Diffuser (Page 59)

| Face Velocity |                  | 500         | 600         | 700         | 800          | 900          | 1000         | 1200        | 1400       | 1600         | 1800       |
|---------------|------------------|-------------|-------------|-------------|--------------|--------------|--------------|-------------|------------|--------------|------------|
| 6"            | cfm              | 80          | 95          | 110         | 130          | 145          | 160          | 190         | 225        | 255          | 290        |
|               | Ak .16 Ps Throw  | <.01<br>2   | <.01<br>2.5 | <.01<br>3   | .014<br>3.5  | .016<br>4.5  | .020<br>5    | .027<br>6   | .038<br>7  | .049<br>8    | .062<br>9  |
| 8"            | cfm              | 140         | 170         | 195         | 225          | 250          | 280          | 335         | 390        | 450          | 505        |
|               | Ak .28 Ps Throw  | <.01<br>3.5 | <.01<br>4   | <.01<br>4.5 | .013<br>5    | .016<br>5.5  | .020<br>6.5  | .028<br>7.5 | .038<br>9  | .050<br>10.5 | .063<br>12 |
| 10"           | cfm              | 220         | 265         | 310         | 350          | 395          | 440          | 530         | 615        | 705          | 790        |
|               | Ak .44 Ps Throw  | <.01<br>4   | <.01<br>4.5 | .010<br>5   | .013<br>6    | .016<br>7    | .020<br>8    | .029<br>9   | .041<br>11 | .051<br>13   | .065<br>14 |
| 12"           | cfm              | 330         | 395         | 460         | 530          | 595          | 660          | 790         | 925        | 1025         | 1190       |
|               | Ak .66 Ps Throw  | <.01<br>5   | <.01<br>6   | .010<br>7   | .013<br>8    | .017<br>9    | .021<br>10   | .029<br>12  | .040<br>14 | .050<br>16   | .063<br>18 |
| 14"           | cfm              | 455         | 545         | 640         | 730          | 820          | 910          | 1090        | 1275       | 1455         | 1640       |
|               | Ak .91 Ps Throw  | <.01<br>6   | <.01<br>7   | .011<br>8   | .014<br>9    | .017<br>10.5 | .021<br>12   | .030<br>14  | .040<br>16 | .053<br>18   | .067<br>21 |
| 16"           | cfm              | 600         | 720         | 840         | 960          | 1080         | 1200         | 1400        | 1680       | 1920         | 2160       |
|               | Ak 1.20 Ps Throw | <.01<br>7   | <.01<br>8   | .010<br>9   | .013<br>10.5 | .016<br>12   | .020<br>13.5 | .028<br>16  | .039<br>19 | .050<br>22   | .063<br>24 |
| 18"           | cfm              | 750         | 900         | 1050        | 1200         | 1350         | 1500         | 1800        | 2100       | 2400         | 2700       |
|               | Ak 1.50 Ps Throw | <.01<br>8   | <.01<br>9   | .010<br>10  | .013<br>12   | .017<br>13.5 | .021<br>15   | .030<br>18  | .040<br>21 | .052<br>24   | .062<br>27 |

NC &lt; 35

NC &gt; 35

NOTE: The use of a balancing hood is recommended to balance the system.

Ak = Effective Area in square feet

Ps = Static Pressure Loss in inches of water

NC = Noise Criteria, based on a 10dB room attenuation (Re: 10<sup>-12</sup> watts) ASHRAE 36-72.

Terminal Velocity of 100 fpm

Product tested with core in "out" position.

When diffusers are used on an exposed duct, multiply throw by 0.7