

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 7145H, 7145V

| Listed Duct Size (inches) | Alternate Sizes (inches) | Core Area (sq. ft.) | Ak Factor | Core Velocity Velocity Pressure Neg. Static Pressure | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|---------------------------|--------------------------|---------------------|-----------|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | | | .001 .003 | .002 .011 | .006 .025 | .010 .045 | .016 .070 | .022 .101 | .031 .138 | .040 .180 | .050 .228 | .062 .281 |
| 6 x 6 | 8 x 4 10 x 4 | 0.20 | 0.23 | CFM | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| | | | | Noise Criteria | - | - | - | - | - | 17 | 22 | 26 | 30 | 34 |
| 8 x 6 | 10 x 5 12 x 4 | 0.28 | 0.30 | CFM | 28 | 56 | 84 | 112 | 140 | 168 | 196 | 224 | 252 | 280 |
| | | | | Noise Criteria | - | - | - | - | - | 18 | 23 | 27 | 31 | 35 |
| 10 x 6 | 12 x 5 16 x 4 | 0.35 | 0.37 | CFM | 35 | 70 | 105 | 140 | 175 | 210 | 245 | 280 | 315 | 350 |
| | | | | Noise Criteria | - | - | - | - | - | 19 | 24 | 28 | 32 | 36 |
| 8 x 8 | 14 x 5 | 0.38 | 0.40 | CFM | 38 | 76 | 114 | 152 | 190 | 228 | 266 | 304 | 342 | 380 |
| | | | | Noise Criteria | - | - | - | - | 15 | 20 | 25 | 29 | 33 | 37 |
| 12 x 6 | 18 x 4 | 0.42 | 0.45 | CFM | 42 | 84 | 126 | 168 | 210 | 252 | 294 | 336 | 378 | 420 |
| | | | | Noise Criteria | - | - | - | - | 16 | 21 | 25 | 29 | 33 | 37 |
| 12 x 8 | 16 x 6 24 x 4 | 0.58 | 0.59 | CFM | 58 | 116 | 174 | 232 | 290 | 348 | 406 | 464 | 522 | 580 |
| | | | | Noise Criteria | - | - | - | - | 17 | 22 | 26 | 31 | 35 | 39 |
| 10 x 10 | 14 x 7 26 x 4 | 0.61 | 0.62 | CFM | 61 | 122 | 183 | 244 | 305 | 366 | 427 | 488 | 549 | 610 |
| | | | | Noise Criteria | - | - | - | - | 17 | 22 | 27 | 32 | 35 | 39 |
| 18 x 6 | 14 x 8 28 x 4 | 0.65 | 0.67 | CFM | 65 | 130 | 195 | 260 | 325 | 390 | 455 | 520 | 585 | 650 |
| | | | | Noise Criteria | - | - | - | - | 18 | 23 | 28 | 32 | 36 | 39 |
| 12 x 10 | 16 x 8 24 x 5 | 0.74 | 0.74 | CFM | 74 | 148 | 222 | 296 | 370 | 444 | 518 | 592 | 666 | 740 |
| | | | | Noise Criteria | - | - | - | - | 18 | 23 | 28 | 33 | 37 | 40 |
| 12 x 12 | 14 x 10 18 x 8 | 0.90 | 0.89 | CFM | 90 | 180 | 270 | 360 | 450 | 540 | 630 | 720 | 810 | 900 |
| | | | | Noise Criteria | - | - | - | - | 19 | 24 | 29 | 34 | 37 | 40 |
| 14 x 14 | 16 x 12 20 x 10 | 1.24 | 1.22 | CFM | 124 | 248 | 372 | 496 | 620 | 744 | 868 | 992 | 1116 | 1240 |
| | | | | Noise Criteria | - | - | - | - | 19 | 24 | 29 | 34 | 38 | 41 |
| 18 x 12 | 16 x 14 20 x 10 | 1.37 | 1.34 | CFM | 137 | 274 | 411 | 548 | 685 | 822 | 959 | 1096 | 1233 | 1370 |
| | | | | Noise Criteria | - | - | - | 15 | 20 | 25 | 30 | 35 | 38 | 41 |
| 24 x 10 | 20 x 12 30 x 8 | 1.52 | 1.49 | CFM | 152 | 304 | 456 | 608 | 760 | 912 | 1064 | 1216 | 1368 | 1520 |
| | | | | Noise Criteria | - | - | - | 15 | 20 | 25 | 30 | 36 | 39 | 42 |
| 16 x 16 | 18 x 14 22 x 12 | 1.64 | 1.58 | CFM | 164 | 328 | 492 | 656 | 820 | 984 | 1148 | 1312 | 1476 | 1640 |
| | | | | Noise Criteria | - | - | - | 16 | 21 | 26 | 31 | 36 | 39 | 42 |
| 24 x 12 | 18 x 16 20 x 14 | 1.85 | 1.78 | CFM | 185 | 370 | 555 | 740 | 925 | 1110 | 1295 | 1480 | 1665 | 1850 |
| | | | | Noise Criteria | - | - | - | 16 | 21 | 26 | 31 | 36 | 39 | 43 |
| 18 x 18 | 20 x 16 24 x 14 | 2.10 | 2.01 | CFM | 210 | 420 | 630 | 840 | 1050 | 1260 | 1470 | 1680 | 1890 | 2100 |
| | | | | Noise Criteria | - | - | - | 16 | 21 | 27 | 32 | 37 | 40 | 43 |
| 30 x 12 | 20 x 18 22 x 16 | 2.32 | 2.23 | CFM | 232 | 464 | 696 | 928 | 1160 | 1392 | 1624 | 1856 | 2088 | 2320 |
| | | | | Noise Criteria | - | - | - | 17 | 22 | 27 | 32 | 37 | 40 | 44 |
| 20 x 20 | 24 x 18 26 x 16 | 2.61 | 2.48 | CFM | 261 | 522 | 783 | 1044 | 1305 | 1566 | 1827 | 2088 | 2349 | 2610 |
| | | | | Noise Criteria | - | - | - | 17 | 22 | 28 | 33 | 38 | 41 | 44 |
| 22 x 22 | 24 x 20 26 x 18 | 3.17 | 3.00 | CFM | 317 | 634 | 951 | 1268 | 1585 | 1902 | 2219 | 2536 | 2853 | 3170 |
| | | | | Noise Criteria | - | - | - | 18 | 23 | 29 | 33 | 38 | 41 | 45 |
| 30 x 18 | 24 x 22 34 x 16 | 3.54 | 3.34 | CFM | 354 | 708 | 1062 | 1416 | 1770 | 2124 | 2478 | 2832 | 3186 | 3540 |
| | | | | Noise Criteria | - | - | - | 18 | 23 | 29 | 34 | 39 | 42 | 46 |
| 24 x 24 | 26 x 22 28 x 20 | 3.79 | 3.56 | CFM | 379 | 758 | 1137 | 1516 | 1895 | 2274 | 2653 | 3032 | 3411 | 3790 |
| | | | | Noise Criteria | - | - | - | 18 | 23 | 29 | 34 | 39 | 42 | 46 |
| 36 x 18 | 32 x 20 40 x 16 | 4.27 | 4.01 | CFM | 427 | 854 | 1281 | 1708 | 2135 | 2562 | 2989 | 3416 | 3843 | 4270 |
| | | | | Noise Criteria | - | - | - | 19 | 24 | 30 | 35 | 40 | 43 | 47 |
| 26 x 26 | 28 x 24 48 x 14 | 4.47 | 4.19 | CFM | 447 | 894 | 1341 | 1788 | 2235 | 2682 | 3129 | 3576 | 4023 | 4470 |
| | | | | Noise Criteria | - | - | - | 19 | 24 | 30 | 35 | 40 | 43 | 47 |
| 30 x 24 | 28 x 26 32 x 22 | 4.77 | 4.46 | CFM | 477 | 954 | 1431 | 1908 | 2385 | 2862 | 3339 | 3816 | 4293 | 4770 |
| | | | | Noise Criteria | - | - | - | 20 | 25 | 31 | 36 | 40 | 44 | 48 |
| 28 x 28 | 30 x 26 36 x 22 | 5.20 | 4.85 | CFM | 520 | 1040 | 1560 | 2080 | 2600 | 3120 | 3640 | 4160 | 4680 | 5200 |
| | | | | Noise Criteria | - | - | - | 20 | 25 | 31 | 36 | 41 | 44 | 48 |
| 36 x 24 | 30 x 28 40 x 22 | 5.74 | 5.35 | CFM | 574 | 1148 | 1722 | 2296 | 2870 | 3444 | 4018 | 4592 | 5166 | 5740 |
| | | | | Noise Criteria | - | - | - | 20 | 26 | 32 | 36 | 41 | 45 | 49 |
| 30 x 30 | 34 x 26 38 x 24 | 5.99 | 5.57 | CFM | 599 | 1198 | 1797 | 2396 | 2995 | 3594 | 4193 | 4792 | 5391 | 5990 |
| | | | | Noise Criteria | - | - | - | 20 | 26 | 32 | 37 | 41 | 45 | 49 |

For performance data notes, see F82.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

MODELS: 7145H, 7145V

| Listed Duct Size (inches) | Alternate Sizes (inches) | Core Area (sq. ft.) | Ak Factor | Core Velocity Velocity Pressure Neg. Static Pressure | 100 .001 .003 | 200 .002 .011 | 300 .006 .025 | 400 .010 .045 | 500 .016 .070 | 600 .022 .101 | 700 .031 .138 | 800 .040 .180 | 900 .050 .228 | 1000 .062 .281 |
|---------------------------|------------------------------------|---------------------|-----------|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| 32 x 32 | 36 x 30 46 x 22 38 x 28 | 6.84 | 6.34 | CFM Noise Criteria | 684 — | 1368 — | 2052 — | 2736 21 | 3420 27 | 4104 33 | 4788 37 | 5472 42 | 6156 46 | 6840 50 |
| 48 x 24 | 34 x 34 38 x 30 36 x 32 48 x 28 | 7.69 | 7.13 | CFM Noise Criteria | 769 — | 1538 — | 2307 15 | 3076 21 | 3845 27 | 4614 33 | 5383 38 | 6152 42 | 6921 46 | 7690 50 |
| 36 x 36 | 38 x 34 46 x 28 42 x 30 48 x 26 | 8.69 | 8.02 | CFM Noise Criteria | 869 — | 1738 — | 2607 15 | 3476 22 | 4345 27 | 5214 34 | 6083 39 | 6952 43 | 7821 47 | 8690 51 |
| 38 x 38 | 42 x 34 48 x 30 44 x 34 | 9.70 | 8.94 | CFM Noise Criteria | 970 — | 1940 — | 2910 16 | 3880 22 | 4850 28 | 5820 34 | 6790 39 | 7760 43 | 8730 47 | 9700 51 |
| 40 x 40 | 42 x 36 48 x 32 46 x 34 | 10.77 | 9.90 | CFM Noise Criteria | 1077 — | 2154 — | 3231 16 | 4308 22 | 5385 28 | 6462 34 | 7539 40 | 8616 43 | 9693 48 | 10770 52 |
| 42 x 42 | 44 x 40 48 x 36 46 x 38 | 11.89 | 10.92 | CFM Noise Criteria | 1189 — | 2378 — | 3567 17 | 4756 23 | 5945 29 | 7134 35 | 8323 40 | 9512 44 | 10701 48 | 11890 52 |
| 44 x 44 | 46 x 42 | 13.07 | 11.98 | CFM Noise Criteria | 1307 — | 2614 — | 3921 17 | 5228 23 | 6535 29 | 7842 35 | 9149 40 | 10456 44 | 11763 48 | 13070 52 |
| 46 x 46 | | 14.30 | 13.10 | CFM Noise Criteria | 1430 — | 2860 — | 4290 18 | 5720 24 | 7150 30 | 8580 36 | 10010 41 | 11440 45 | 12870 49 | 14300 53 |
| 48 x 48 | | 15.59 | 14.26 | CFM Noise Criteria | 1559 — | 3118 — | 4677 18 | 6236 24 | 7795 30 | 9354 36 | 10913 41 | 12472 45 | 14031 49 | 15590 53 |

Performance Notes:

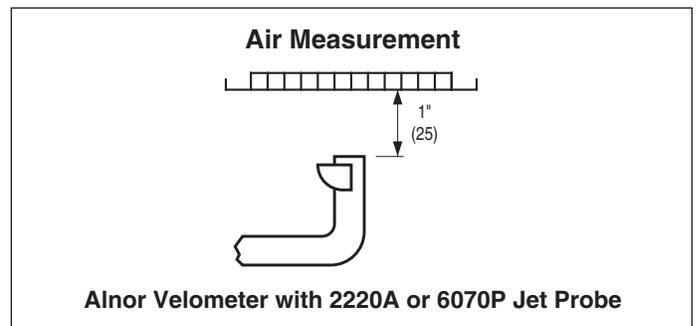
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10⁻¹² watts. Dash (—) in space denotes a Noise Criteria level of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2023.



Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.