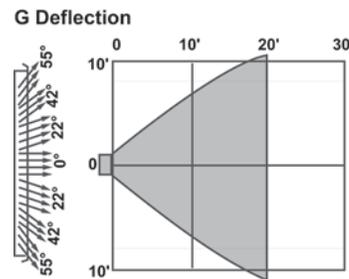
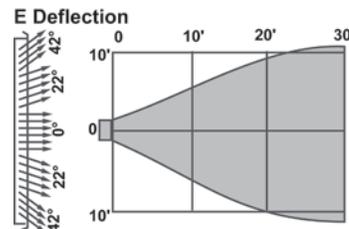
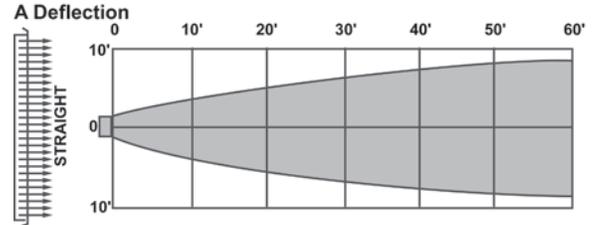


**Recommended NC Criteria**

|         | Communication Environment  | Typical Occupancy  |
|---------|--|--|
| < NC 25 | Extremely quiet environment; suppressed speech is quite audible; suitable for acute pickup of all sounds.  | Broadcasting studios, concert halls, music rooms.  |
| NC 30   | Very quiet office; suitable for large conferences; telephone use satisfactory.   | Residences, theaters, libraries, executive offices, directors rooms.                             |
| NC 35   | Quiet office; satisfactory for conference at a 15-foot table; normal voice 10 to 30 feet; telephone use satisfactory.                                  | Private offices, schools, hotel guestrooms, courtrooms, churches, hospital rooms.                |
| NC 40   | Satisfactory for conferences at a 6-to 8-foot table; normal voice 6 to 12 feet; telephone use satisfactory.  | General office, labs, dining rooms.  |
| NC 45   | Satisfactory for conferences at a 4- to 5-foot table; normal voice 3 to 6 feet; raised voice 6 to 12 feet; telephone use occasionally difficult.       | Retail stores, cafeterias, lobby areas, large drafting and engineering offices, reception areas. |
| > NC 50 | Unsatisfactory for conference of more than two or three persons; normal voice 1 to 2 feet; raised voice 3 to 6 feet; telephone use slightly difficult. | Computer rooms, stenographic pools, print machine rooms, process areas.                          |

**Air Pattern Obtained with Various Deflection Settings**



**Velocity Limitations for Various Applications**

The sound caused by an air outlet in operation is directly proportional to the velocity of the air passing through it. By selecting outlets of proper sizes, face velocities can be controlled within safe sound limits.

The following recommended face velocities are within the safe sound limits for most applications, when NC data are not available.

| Application                           | Recommended Velometer Velocities |
|---------------------------------------|----------------------------------|
| Broadcasting Studios                  | 500 FPM                          |
| Residences                            | 500 to 750 FPM                   |
| Apartments                            | 500 to 750 FPM                   |
| Churches                              | 500 to 750 FPM                   |
| Hotel Guestrooms                      | 500 to 750 FPM                   |
| Legitimate Theaters                   | 500 to 1000 FPM                  |
| Private Offices, acoustically treated | 500 to 1000 FPM                  |
| Private Offices, not treated          | 1000 to 1250 FPM                 |
| Motion Picture Theaters               | 1000 to 1250 FPM                 |
| General Offices                       | 1250 to 1500 FPM                 |
| Stores, upper floors                  | 1500 FPM                         |
| Stores, main floors                   | 1500 FPM                         |
| Industrial Buildings                  | 1500 to 2000 FPM                 |



900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

| Nom. Duct Size (in.) | Nom. Duct Area (ft <sup>2</sup> ) | Core Area (ft <sup>2</sup> ) | Performance Data      |          |          |          |          |          |          |          |          |          |  |
|----------------------|-----------------------------------|------------------------------|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|
|                      |                                   |                              | Core Vel. Vel. Press. | NC-20    |          |          | NC-30    |          |          | NC-40    |          |          |  |
|                      |                                   |                              |                       | 300      | 400      | 500      | 600      | 700      | 800      | 1000     | 1200     | 1400     |  |
|                      |                                   |                              | 0°                    | 0.016    | 0.029    | 0.046    | 0.066    | 0.090    | 0.117    | 0.183    | 0.263    | 0.358    |  |
|                      |                                   |                              | 22.5°                 | 0.018    | 0.033    | 0.051    | 0.074    | 0.100    | 0.131    | 0.204    | 0.294    | 0.401    |  |
|                      |                                   |                              | 45°                   | 0.028    | 0.049    | 0.077    | 0.111    | 0.152    | 0.198    | 0.309    | 0.445    | 0.606    |  |
|                      |                                   |                              | cfm                   | 57       | 76       | 95       | 114      | 133      | 152      | 190      | 228      | 266      |  |
|                      |                                   |                              | NC                    | -        | -        | -        | 15       | 20       | 24       | 31       | 36       | 41       |  |
|                      |                                   |                              | 0°                    | 5-7-14   | 7-10-16  | 8-12-18  | 10-14-20 | 12-15-21 | 13-16-23 | 15-18-25 | 16-20-28 | 17-21-30 |  |
|                      |                                   |                              | 22.5°                 | 4-6-11   | 5-8-12   | 6-10-14  | 8-11-15  | 9-12-16  | 10-12-18 | 11-14-20 | 12-15-22 | 13-16-23 |  |
|                      |                                   |                              | 45°                   | 2-3-6    | 3-4-7    | 4-6-8    | 4-6-9    | 5-7-10   | 6-7-10   | 7-8-11   | 7-9-12   | 8-10-13  |  |
|                      |                                   |                              | cfm                   | 78       | 104      | 130      | 156      | 182      | 208      | 260      | 312      | 364      |  |
|                      |                                   |                              | NC                    | -        | -        | 11       | 17       | 21       | 25       | 32       | 38       | 42       |  |
|                      |                                   |                              | 0°                    | 5-9-16   | 8-12-19  | 10-15-21 | 12-16-23 | 14-18-25 | 15-19-27 | 17-21-30 | 19-23-32 | 20-25-35 |  |
|                      |                                   |                              | 22.5°                 | 4-7-13   | 6-9-15   | 8-11-16  | 9-13-18  | 11-14-19 | 12-15-21 | 13-16-23 | 15-18-25 | 16-19-27 |  |
|                      |                                   |                              | 45°                   | 2-4-7    | 3-5-8    | 4-7-9    | 5-7-10   | 6-8-11   | 7-8-12   | 8-9-13   | 8-10-15  | 9-11-16  |  |
|                      |                                   |                              | cfm                   | 102      | 136      | 170      | 204      | 238      | 272      | 340      | 408      | 476      |  |
|                      |                                   |                              | NC                    | -        | -        | 12       | 18       | 23       | 27       | 33       | 39       | 43       |  |
|                      |                                   |                              | 0°                    | 6-10-19  | 9-13-21  | 11-17-24 | 13-19-26 | 16-20-28 | 18-21-30 | 20-24-34 | 21-26-37 | 23-28-40 |  |
|                      |                                   |                              | 22.5°                 | 5-8-14   | 7-10-17  | 9-13-19  | 10-14-20 | 12-16-22 | 14-17-23 | 15-19-26 | 17-20-29 | 18-22-31 |  |
|                      |                                   |                              | 45°                   | 3-4-8    | 4-6-10   | 5-7-11   | 6-8-12   | 7-9-13   | 8-10-14  | 9-11-15  | 10-12-17 | 10-13-18 |  |
|                      |                                   |                              | cfm                   | 111      | 148      | 185      | 222      | 259      | 296      | 370      | 444      | 518      |  |
|                      |                                   |                              | NC                    | -        | -        | 13       | 18       | 23       | 27       | 34       | 39       | 44       |  |
|                      |                                   |                              | 0°                    | 6-10-19  | 9-14-22  | 12-17-25 | 14-19-27 | 16-21-30 | 18-22-32 | 20-25-35 | 22-27-39 | 24-30-42 |  |
|                      |                                   |                              | 22.5°                 | 5-8-15   | 7-11-17  | 9-13-19  | 11-15-21 | 13-16-23 | 14-17-25 | 16-19-27 | 17-21-30 | 19-23-32 |  |
|                      |                                   |                              | 45°                   | 3-5-9    | 4-6-10   | 5-8-11   | 6-9-12   | 7-9-13   | 8-10-14  | 9-11-16  | 10-12-17 | 11-13-19 |  |
|                      |                                   |                              | cfm                   | 123      | 164      | 205      | 246      | 287      | 328      | 410      | 492      | 574      |  |
|                      |                                   |                              | NC                    | -        | -        | 13       | 19       | 23       | 27       | 34       | 39       | 44       |  |
|                      |                                   |                              | 0°                    | 7-11-20  | 10-15-24 | 12-18-26 | 15-20-29 | 17-22-31 | 19-24-33 | 21-26-37 | 24-29-41 | 25-31-44 |  |
|                      |                                   |                              | 22.5°                 | 5-8-16   | 8-11-18  | 9-14-20  | 11-16-22 | 13-17-24 | 15-18-26 | 17-20-29 | 18-22-32 | 20-24-34 |  |
|                      |                                   |                              | 45°                   | 3-5-9    | 4-7-11   | 5-8-12   | 7-9-13   | 8-10-14  | 9-11-15  | 10-12-17 | 11-13-18 | 11-14-20 |  |
|                      |                                   |                              | cfm                   | 144      | 192      | 240      | 288      | 336      | 384      | 480      | 576      | 672      |  |
|                      |                                   |                              | NC                    | -        | -        | 14       | 19       | 24       | 28       | 35       | 40       | 45       |  |
|                      |                                   |                              | 0°                    | 7-12-22  | 11-16-25 | 13-20-28 | 16-22-31 | 18-24-34 | 21-25-36 | 23-28-40 | 25-31-44 | 28-34-48 |  |
|                      |                                   |                              | 22.5°                 | 6-9-17   | 8-12-20  | 10-15-22 | 12-17-24 | 14-18-26 | 16-20-28 | 18-22-31 | 20-24-34 | 21-26-37 |  |
|                      |                                   |                              | 45°                   | 3-5-10   | 5-7-11   | 6-9-13   | 7-10-14  | 8-11-15  | 9-11-16  | 10-13-18 | 11-14-20 | 12-15-21 |  |
|                      |                                   |                              | cfm                   | 171      | 228      | 285      | 342      | 399      | 456      | 570      | 684      | 798      |  |
|                      |                                   |                              | NC                    | -        | -        | 15       | 20       | 25       | 29       | 35       | 41       | 45       |  |
|                      |                                   |                              | 0°                    | 8-13-24  | 11-17-28 | 14-22-31 | 17-24-34 | 20-26-37 | 23-28-39 | 25-31-44 | 28-34-48 | 30-37-52 |  |
|                      |                                   |                              | 22.5°                 | 6-10-19  | 9-13-22  | 11-17-24 | 13-19-26 | 16-20-28 | 18-22-30 | 20-24-34 | 22-26-37 | 23-28-40 |  |
|                      |                                   |                              | 45°                   | 4-6-11   | 5-8-12   | 6-10-14  | 8-11-15  | 9-12-17  | 10-12-18 | 11-14-20 | 12-15-22 | 13-17-23 |  |
|                      |                                   |                              | cfm                   | 177      | 236      | 295      | 354      | 413      | 472      | 590      | 708      | 826      |  |
|                      |                                   |                              | NC                    | -        | -        | 15       | 20       | 25       | 29       | 35       | 41       | 46       |  |
|                      |                                   |                              | 0°                    | 8-13-24  | 12-18-28 | 15-22-32 | 18-24-35 | 20-26-37 | 23-28-40 | 26-32-45 | 28-35-49 | 31-37-53 |  |
|                      |                                   |                              | 22.5°                 | 6-10-19  | 9-14-22  | 11-17-24 | 14-19-27 | 16-20-29 | 18-22-31 | 20-24-35 | 22-27-38 | 24-29-41 |  |
|                      |                                   |                              | 45°                   | 4-6-11   | 5-8-13   | 7-10-14  | 8-11-16  | 9-12-17  | 10-13-18 | 12-14-20 | 13-16-22 | 14-17-24 |  |
|                      |                                   |                              | cfm                   | 189      | 252      | 315      | 378      | 441      | 504      | 630      | 756      | 882      |  |
|                      |                                   |                              | NC                    | -        | -        | 15       | 20       | 25       | 29       | 36       | 41       | 46       |  |
|                      |                                   |                              | 0°                    | 8-14-25  | 12-18-29 | 15-23-33 | 18-25-36 | 21-27-39 | 24-29-41 | 27-33-46 | 29-36-51 | 32-39-55 |  |
|                      |                                   |                              | 22.5°                 | 7-11-20  | 9-14-23  | 12-18-25 | 14-20-28 | 16-21-30 | 18-23-32 | 21-25-36 | 23-28-39 | 24-30-42 |  |
|                      |                                   |                              | 45°                   | 4-6-11   | 5-8-13   | 7-10-15  | 8-11-16  | 9-12-17  | 11-13-19 | 12-15-21 | 13-16-23 | 14-17-25 |  |
|                      |                                   |                              | cfm                   | 216      | 288      | 360      | 432      | 504      | 576      | 720      | 864      | 1008     |  |
|                      |                                   |                              | NC                    | -        | -        | 16       | 21       | 26       | 30       | 36       | 42       | 46       |  |
|                      |                                   |                              | 0°                    | 9-15-27  | 13-19-31 | 16-24-35 | 19-27-38 | 23-29-41 | 25-31-44 | 28-35-49 | 31-38-54 | 34-41-58 |  |
|                      |                                   |                              | 22.5°                 | 7-11-21  | 10-15-24 | 12-19-27 | 15-21-30 | 17-23-32 | 20-24-34 | 22-27-38 | 24-30-42 | 26-32-45 |  |
|                      |                                   |                              | 45°                   | 4-7-12   | 6-9-14   | 7-11-16  | 9-12-17  | 10-13-19 | 11-14-20 | 13-16-22 | 14-17-24 | 15-19-26 |  |
|                      |                                   |                              | cfm                   | 231      | 308      | 385      | 462      | 539      | 616      | 770      | 924      | 1078     |  |
|                      |                                   |                              | NC                    | -        | -        | 16       | 21       | 26       | 30       | 37       | 42       | 47       |  |
|                      |                                   |                              | 0°                    | 9-15-28  | 13-20-32 | 17-25-36 | 20-28-40 | 23-30-43 | 26-32-46 | 29-36-51 | 32-40-56 | 35-43-60 |  |
|                      |                                   |                              | 22.5°                 | 7-12-22  | 10-16-25 | 13-19-28 | 16-22-31 | 18-23-33 | 20-25-35 | 23-28-40 | 25-31-43 | 27-33-47 |  |
|                      |                                   |                              | 45°                   | 4-7-13   | 6-9-15   | 8-11-16  | 9-13-18  | 11-14-19 | 12-15-21 | 13-16-23 | 15-18-25 | 16-19-27 |  |
|                      |                                   |                              | cfm                   | 264      | 352      | 440      | 528      | 616      | 704      | 880      | 1056     | 1232     |  |
|                      |                                   |                              | NC                    | -        | -        | 16       | 22       | 26       | 30       | 37       | 43       | 47       |  |
|                      |                                   |                              | 0°                    | 10-16-30 | 14-21-34 | 18-27-39 | 21-30-42 | 25-32-46 | 28-34-49 | 31-39-55 | 34-42-60 | 37-46-65 |  |
|                      |                                   |                              | 22.5°                 | 8-12-23  | 11-17-27 | 14-21-30 | 17-23-33 | 19-25-35 | 22-27-38 | 24-30-42 | 27-33-46 | 29-35-50 |  |
|                      |                                   |                              | 45°                   | 4-7-13   | 6-10-16  | 8-12-17  | 10-13-19 | 11-15-21 | 13-16-22 | 14-17-25 | 16-19-27 | 17-21-29 |  |
|                      |                                   |                              | cfm                   | 333      | 444      | 555      | 666      | 777      | 888      | 1110     | 1332     | 1554     |  |
|                      |                                   |                              | NC                    | -        | 11       | 17       | 23       | 27       | 31       | 38       | 44       | 48       |  |
|                      |                                   |                              | 0°                    | 11-18-34 | 16-24-39 | 20-30-43 | 24-34-47 | 28-36-51 | 32-39-55 | 35-43-61 | 39-47-67 | 42-51-72 |  |
|                      |                                   |                              | 22.5°                 | 9-14-26  | 12-19-30 | 16-23-34 | 19-26-37 | 22-28-40 | 25-30-42 | 27-34-47 | 30-37-52 | 32-40-56 |  |
|                      |                                   |                              | 45°                   | 5-8-15   | 7-11-17  | 9-14-19  | 11-15-21 | 13-16-23 | 14-17-25 | 16-19-28 | 17-21-30 | 19-23-33 |  |

Performance notes appear at end of table



**PERFORMANCE DATA—LIGHT COMMERCIAL**

**900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers**

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

| Nom. Duct Size (in.)           | Nom. Duct Area (ft <sup>2</sup> ) | Core Area (ft <sup>2</sup> ) | NC-20       |          |          |          | NC-30    |          |          | NC-40    |          | NC-50     |           |
|--------------------------------|-----------------------------------|------------------------------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|
|                                |                                   |                              | Core Vel.   | 300      | 400      | 500      | 600      | 700      | 800      | 1000     | 1200     | 1400      |           |
|                                |                                   |                              | Vel. Press. | 0.006    | 0.010    | 0.016    | 0.022    | 0.031    | 0.040    | 0.062    | 0.090    | 0.122     |           |
|                                |                                   |                              | 0°          | 0.016    | 0.029    | 0.046    | 0.066    | 0.090    | 0.117    | 0.183    | 0.263    | 0.358     |           |
|                                |                                   |                              | Total       | 22.5°    | 0.018    | 0.033    | 0.051    | 0.074    | 0.100    | 0.131    | 0.204    | 0.401     |           |
|                                |                                   |                              | Press.      | 45°      | 0.028    | 0.049    | 0.077    | 0.111    | 0.152    | 0.198    | 0.309    | 0.606     |           |
| 14x14                          | 1.36                              | 1.22                         | cfm         | 366      | 488      | 610      | 732      | 854      | 976      | 1220     | 1464     | 1708      |           |
|                                |                                   |                              | NC          | -        | 11       | 18       | 23       | 28       | 32       | 39       | 44       | 49        |           |
|                                |                                   |                              | Throw       | 0°       | 12-19-35 | 17-25-41 | 21-31-45 | 25-35-50 | 29-38-54 | 33-41-57 | 37-45-64 | 41-50-70  | 44-54-76  |
|                                |                                   |                              | 45°         | 9-15-27  | 13-20-31 | 16-24-35 | 20-27-39 | 23-29-42 | 26-31-45 | 29-35-50 | 31-39-55 | 34-42-59  |           |
| 36x6<br>27x8<br>18x12          | 1.50                              | 1.35                         | cfm         | 405      | 540      | 675      | 810      | 945      | 1080     | 1350     | 1620     | 1890      |           |
|                                |                                   |                              | NC          | -        | 12       | 18       | 24       | 28       | 32       | 39       | 44       | 49        |           |
|                                |                                   |                              | Throw       | 0°       | 12-20-37 | 18-26-43 | 22-33-48 | 26-37-52 | 31-40-57 | 35-43-60 | 39-48-68 | 43-52-74  | 46-57-80  |
|                                |                                   |                              | 45°         | 10-15-29 | 14-21-33 | 17-26-37 | 21-29-41 | 24-31-44 | 27-33-47 | 30-37-52 | 33-41-57 | 36-44-62  |           |
| 22x10                          | 1.53                              | 1.37                         | cfm         | 411      | 548      | 685      | 822      | 959      | 1096     | 1370     | 1644     | 1918      |           |
|                                |                                   |                              | NC          | -        | 12       | 18       | 24       | 28       | 32       | 39       | 44       | 49        |           |
|                                |                                   |                              | Throw       | 0°       | 12-20-37 | 18-27-43 | 22-33-48 | 27-37-53 | 31-40-57 | 35-43-61 | 39-48-68 | 43-53-75  | 46-57-81  |
|                                |                                   |                              | 45°         | 10-16-29 | 14-21-33 | 17-26-37 | 21-29-41 | 24-31-44 | 27-33-47 | 30-37-53 | 33-41-58 | 36-44-62  |           |
| 30x8<br>24x10                  | 1.67                              | 1.49                         | cfm         | 447      | 596      | 745      | 894      | 1043     | 1192     | 1490     | 1788     | 2086      |           |
|                                |                                   |                              | NC          | -        | 12       | 19       | 24       | 29       | 33       | 39       | 45       | 49        |           |
|                                |                                   |                              | Throw       | 0°       | 13-21-39 | 19-28-45 | 23-35-50 | 28-39-55 | 32-42-59 | 37-45-63 | 41-50-71 | 45-55-78  | 48-59-84  |
|                                |                                   |                              | 45°         | 10-16-30 | 14-22-35 | 18-27-39 | 22-30-43 | 25-33-46 | 28-35-49 | 32-39-55 | 35-43-60 | 38-46-65  |           |
| 42x6<br>18x14                  | 1.75                              | 1.59                         | cfm         | 477      | 636      | 795      | 954      | 1113     | 1272     | 1590     | 1908     | 2226      |           |
|                                |                                   |                              | NC          | -        | 12       | 19       | 24       | 29       | 33       | 40       | 45       | 50        |           |
|                                |                                   |                              | Throw       | 0°       | 13-22-40 | 19-29-46 | 24-36-52 | 29-40-57 | 34-43-61 | 38-46-66 | 42-52-73 | 46-57-80  | 50-61-87  |
|                                |                                   |                              | 45°         | 10-17-31 | 15-22-36 | 19-28-40 | 22-31-44 | 26-34-48 | 29-36-51 | 33-40-57 | 36-44-62 | 39-48-67  |           |
| 16x16                          | 1.78                              | 1.62                         | cfm         | 486      | 648      | 810      | 972      | 1134     | 1296     | 1620     | 1944     | 2268      |           |
|                                |                                   |                              | NC          | -        | 12       | 19       | 24       | 29       | 33       | 40       | 45       | 50        |           |
|                                |                                   |                              | Throw       | 0°       | 14-22-41 | 19-29-47 | 24-36-52 | 29-41-57 | 34-44-62 | 38-47-66 | 43-52-74 | 47-57-81  | 51-62-88  |
|                                |                                   |                              | 45°         | 11-17-31 | 15-22-36 | 19-28-41 | 22-31-44 | 26-34-48 | 30-36-51 | 33-41-57 | 36-44-63 | 39-48-68  |           |
| 48x6<br>36x8<br>24x12<br>18x16 | 2.00                              | 1.82                         | cfm         | 546      | 728      | 910      | 1092     | 1274     | 1456     | 1820     | 2184     | 2548      |           |
|                                |                                   |                              | NC          | -        | 13       | 19       | 25       | 30       | 34       | 40       | 46       | 50        |           |
|                                |                                   |                              | Throw       | 0°       | 14-23-43 | 20-31-50 | 26-38-55 | 31-43-61 | 36-46-66 | 41-50-70 | 45-55-78 | 50-61-86  | 54-66-93  |
|                                |                                   |                              | 45°         | 11-18-33 | 16-24-38 | 20-30-43 | 24-33-47 | 28-36-51 | 31-38-54 | 35-43-61 | 38-47-67 | 42-51-72  |           |
| 18x18                          | 2.25                              | 2.07                         | cfm         | 621      | 828      | 1035     | 1242     | 1449     | 1656     | 2070     | 2484     | 2898      |           |
|                                |                                   |                              | NC          | -        | 13       | 20       | 25       | 30       | 34       | 41       | 46       | 51        |           |
|                                |                                   |                              | Throw       | 0°       | 15-25-46 | 22-33-53 | 27-41-59 | 33-46-65 | 38-49-70 | 43-53-75 | 48-59-84 | 53-65-92  | 57-70-99  |
|                                |                                   |                              | 45°         | 12-19-36 | 17-25-41 | 21-32-46 | 25-36-50 | 30-38-54 | 33-41-58 | 37-46-65 | 41-50-71 | 44-54-77  |           |
| 42x8<br>24x14                  | 2.33                              | 2.14                         | cfm         | 642      | 856      | 1070     | 1284     | 1498     | 1712     | 2140     | 2568     | 2996      |           |
|                                |                                   |                              | NC          | -        | 13       | 20       | 26       | 30       | 34       | 41       | 46       | 51        |           |
|                                |                                   |                              | Throw       | 0°       | 16-25-47 | 22-33-54 | 28-42-60 | 33-47-66 | 39-50-71 | 44-54-76 | 49-60-85 | 54-66-93  | 58-71-101 |
|                                |                                   |                              | 45°         | 12-19-36 | 17-26-42 | 22-32-47 | 26-36-51 | 30-39-55 | 34-42-59 | 38-47-66 | 42-51-72 | 45-55-78  |           |
| 36x10<br>30x12                 | 2.50                              | 2.29                         | cfm         | 687      | 916      | 1145     | 1374     | 1603     | 1832     | 2290     | 2748     | 3206      |           |
|                                |                                   |                              | NC          | -        | 14       | 20       | 26       | 30       | 34       | 41       | 47       | 51        |           |
|                                |                                   |                              | Throw       | 0°       | 16-26-48 | 23-34-56 | 29-43-62 | 34-48-68 | 40-52-74 | 45-56-79 | 51-62-88 | 56-68-96  | 60-74-104 |
|                                |                                   |                              | 45°         | 12-20-37 | 18-27-43 | 22-33-48 | 27-37-53 | 31-40-57 | 35-43-61 | 39-48-68 | 43-53-75 | 47-57-81  |           |
| 48x8<br>24x16                  | 2.67                              | 2.46                         | cfm         | 738      | 984      | 1230     | 1476     | 1722     | 1968     | 2460     | 2952     | 3444      |           |
|                                |                                   |                              | NC          | -        | 14       | 21       | 26       | 31       | 35       | 41       | 47       | 51        |           |
|                                |                                   |                              | Throw       | 0°       | 17-27-50 | 24-36-58 | 30-45-64 | 36-50-71 | 42-54-76 | 47-58-82 | 53-64-91 | 58-71-100 | 62-76-108 |
|                                |                                   |                              | 45°         | 13-21-39 | 18-28-45 | 23-35-50 | 28-39-55 | 32-42-59 | 36-45-63 | 41-50-71 | 45-55-77 | 48-59-84  |           |
| 20x20                          | 2.78                              | 2.57                         | cfm         | 771      | 1028     | 1285     | 1542     | 1799     | 2056     | 2570     | 3084     | 3598      |           |
|                                |                                   |                              | NC          | -        | 14       | 21       | 26       | 31       | 35       | 42       | 47       | 52        |           |
|                                |                                   |                              | Throw       | 0°       | 17-27-51 | 24-37-59 | 30-46-66 | 37-51-72 | 43-55-78 | 48-59-83 | 54-66-93 | 59-72-102 | 64-78-110 |
|                                |                                   |                              | 45°         | 13-21-40 | 19-28-46 | 24-35-51 | 28-40-56 | 33-43-60 | 37-46-65 | 42-51-72 | 46-56-79 | 49-60-85  |           |
| 36x12<br>24x18                 | 3.00                              | 2.75                         | cfm         | 825      | 1100     | 1375     | 1650     | 1925     | 2200     | 2750     | 3300     | 3850      |           |
|                                |                                   |                              | NC          | -        | 15       | 21       | 27       | 31       | 35       | 42       | 47       | 52        |           |
|                                |                                   |                              | Throw       | 0°       | 18-28-53 | 25-38-61 | 31-47-68 | 38-53-75 | 44-57-81 | 50-61-86 | 56-68-96 | 61-75-106 | 66-81-114 |
|                                |                                   |                              | 45°         | 14-22-41 | 20-29-47 | 24-37-53 | 29-41-58 | 34-44-63 | 39-47-67 | 43-53-75 | 47-58-82 | 51-63-88  |           |

Performance notes appear at end of table

**Recommended Noise Criteria and Face Velocity Ranges are on page 19.**



900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

| Nom. Duct Size (in.)    | Nom. Duct Area (ft <sup>2</sup> ) | Core Area (ft <sup>2</sup> ) | Performance Data         |              |              |              |              |              |              |              |              |              |  |  |
|-------------------------|-----------------------------------|------------------------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|--|
|                         |                                   |                              | NC-20                    |              |              | NC-30        |              |              | NC-40        |              |              | NC-50        |  |  |
|                         |                                   |                              | Core Vel. Vel. Press. 0° | 300          | 400          | 500          | 600          | 700          | 800          | 1000         | 1200         | 1400         |  |  |
| 48x10<br>30x16<br>24x20 | 3.33                              | 3.11                         | Total Press. 22.5°       | <b>0.016</b> | <b>0.029</b> | <b>0.046</b> | <b>0.066</b> | <b>0.090</b> | <b>0.117</b> | <b>0.183</b> | <b>0.263</b> | <b>0.358</b> |  |  |
|                         |                                   |                              | Total Press. 45°         | <b>0.018</b> | <b>0.033</b> | <b>0.051</b> | <b>0.074</b> | <b>0.100</b> | <b>0.131</b> | <b>0.204</b> | <b>0.294</b> | <b>0.401</b> |  |  |
|                         |                                   |                              | cfm                      | 933          | 1244         | 1555         | 1866         | 2177         | 2488         | 3110         | 3732         | 4354         |  |  |
| 22x22                   | 3.36                              | 3.14                         | Throw (ft) 0°            | 19-30-56     | 27-40-65     | 33-50-72     | 40-56-79     | 47-61-86     | 53-65-92     | 59-72-103    | 65-79-112    | 70-86-121    |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 15-23-44     | 21-31-50     | 26-39-56     | 31-44-62     | 36-47-66     | 41-50-71     | 46-56-79     | 50-62-87     | 54-66-94     |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 8-14-25      | 12-18-29     | 15-23-33     | 18-25-36     | 21-27-39     | 24-29-41     | 27-33-46     | 29-36-51     | 32-39-55     |  |  |
| 42x12<br>36x14          | 3.50                              | 3.22                         | Throw (ft) 0°            | 19-31-57     | 27-41-66     | 34-51-74     | 41-57-81     | 48-62-87     | 54-66-93     | 60-74-104    | 66-81-114    | 71-87-123    |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 15-24-44     | 21-32-51     | 26-40-57     | 32-44-63     | 37-48-68     | 42-51-72     | 47-57-81     | 51-63-89     | 55-68-96     |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 9-14-26      | 12-18-30     | 15-23-33     | 18-26-36     | 21-28-39     | 24-30-42     | 27-33-47     | 30-36-51     | 32-39-56     |  |  |
| 24x22                   | 3.67                              | 3.43                         | Throw (ft) 0°            | 20-32-59     | 28-42-68     | 35-53-76     | 42-59-83     | 49-64-90     | 56-68-96     | 62-76-108    | 68-83-118    | 74-90-127    |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 15-25-46     | 22-33-53     | 27-41-59     | 33-46-65     | 38-49-70     | 43-53-75     | 48-59-83     | 53-65-91     | 57-70-99     |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 9-14-27      | 13-19-31     | 16-24-34     | 19-27-38     | 22-29-41     | 25-31-43     | 28-34-48     | 31-38-53     | 33-41-57     |  |  |
| 30x18                   | 3.75                              | 3.5                          | Throw (ft) 0°            | 20-32-60     | 28-43-69     | 36-53-77     | 43-60-84     | 50-64-91     | 56-69-97     | 63-77-109    | 69-84-119    | 74-91-129    |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 15-25-46     | 22-33-53     | 28-41-60     | 33-46-65     | 39-50-71     | 44-53-75     | 49-60-84     | 53-65-92     | 58-71-100    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 9-14-27      | 13-19-31     | 16-24-35     | 19-27-38     | 22-29-41     | 25-31-44     | 28-35-49     | 31-38-54     | 33-41-58     |  |  |
| 48x12<br>36x16<br>24x24 | 4.00                              | 3.75                         | Throw (ft) 0°            | 21-33-62     | 29-44-71     | 37-55-80     | 44-62-87     | 51-67-94     | 58-71-101    | 65-80-113    | 71-87-123    | 77-94-133    |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 16-26-48     | 23-34-55     | 29-43-62     | 34-48-68     | 40-52-73     | 45-55-78     | 50-62-87     | 55-68-96     | 60-73-103    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 9-15-28      | 13-20-32     | 17-25-36     | 20-28-39     | 23-30-42     | 26-32-45     | 29-36-51     | 32-39-55     | 35-42-60     |  |  |
| 36x18                   | 4.50                              | 4.22                         | Throw (ft) 0°            | 22-35-65     | 31-47-76     | 39-59-84     | 47-65-93     | 55-71-100    | 62-76-107    | 69-84-119    | 76-93-131    | 82-100-141   |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 17-27-51     | 24-36-59     | 30-45-65     | 36-51-72     | 42-55-77     | 48-59-83     | 53-65-93     | 59-72-101    | 63-77-110    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 10-16-29     | 14-21-34     | 18-26-38     | 21-29-42     | 25-32-45     | 28-34-48     | 31-38-54     | 34-42-59     | 37-45-64     |  |  |
| 36x20<br>30x24          | 5.00                              | 4.71                         | Throw (ft) 0°            | 23-37-69     | 33-49-80     | 41-62-89     | 49-69-98     | 58-75-106    | 65-80-113    | 73-89-126    | 80-98-138    | 86-106-149   |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 18-29-54     | 26-38-62     | 32-48-69     | 38-54-76     | 45-58-82     | 50-62-87     | 56-69-98     | 62-76-107    | 67-82-116    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 10-17-31     | 15-22-36     | 19-28-40     | 22-31-44     | 26-34-48     | 29-36-51     | 33-40-57     | 36-44-62     | 39-48-67     |  |  |
| 42x18                   | 5.25                              | 4.94                         | Throw (ft) 0°            | 24-38-71     | 34-51-82     | 42-63-91     | 51-71-100    | 59-76-108    | 67-82-116    | 75-91-129    | 82-100-142   | 88-108-153   |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 18-29-55     | 26-39-63     | 33-49-71     | 39-55-78     | 46-59-84     | 52-63-90     | 58-71-100    | 63-78-110    | 68-84-118    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 11-17-32     | 15-23-37     | 19-28-41     | 23-32-45     | 27-34-49     | 30-37-52     | 34-41-58     | 37-45-64     | 40-49-69     |  |  |
| 28x28                   | 5.44                              | 5.16                         | Throw (ft) 0°            | 24-39-72     | 35-52-84     | 43-65-93     | 52-72-102    | 60-78-110    | 68-84-118    | 76-93-132    | 84-102-145   | 90-110-156   |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 19-30-56     | 27-40-65     | 33-50-72     | 40-56-79     | 47-61-86     | 53-65-92     | 59-72-102    | 65-79-112    | 70-86-121    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 11-17-33     | 16-23-38     | 19-29-42     | 23-33-46     | 27-35-50     | 31-38-53     | 34-42-59     | 38-46-65     | 41-50-70     |  |  |
| 42x20<br>30x28          | 5.83                              | 5.51                         | Throw (ft) 0°            | 25-40-75     | 36-54-86     | 45-67-96     | 54-75-106    | 62-81-114    | 70-86-122    | 79-96-136    | 86-106-149   | 93-114-161   |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 19-31-58     | 28-41-67     | 35-52-75     | 41-58-82     | 48-63-88     | 55-67-95     | 61-75-106    | 67-82-116    | 72-88-125    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 11-18-34     | 16-24-39     | 20-30-43     | 24-34-48     | 28-36-51     | 32-39-55     | 35-43-61     | 39-48-67     | 42-51-73     |  |  |
| 48x18<br>36x24          | 6.00                              | 5.66                         | Throw (ft) 0°            | 25-41-76     | 36-54-87     | 45-68-98     | 54-76-107    | 63-82-116    | 71-87-124    | 80-98-138    | 87-107-152   | 94-116-164   |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 20-32-59     | 28-42-68     | 35-53-76     | 42-59-83     | 49-63-90     | 55-68-96     | 62-76-107    | 68-83-117    | 73-90-127    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 11-18-34     | 16-24-39     | 20-31-44     | 24-34-48     | 28-37-52     | 32-39-56     | 36-44-62     | 39-48-68     | 43-52-74     |  |  |
| 30x30                   | 6.25                              | 5.94                         | Throw (ft) 0°            | 26-42-78     | 37-56-90     | 46-69-100    | 56-78-110    | 65-84-119    | 73-90-127    | 82-100-142   | 90-110-155   | 97-119-168   |  |  |
|                         |                                   |                              | Throw (ft) 22.5°         | 20-32-60     | 29-43-69     | 36-54-78     | 43-60-85     | 50-65-92     | 57-69-98     | 63-78-110    | 69-85-120    | 75-92-130    |  |  |
|                         |                                   |                              | Throw (ft) 45°           | 12-19-35     | 17-25-40     | 21-31-45     | 25-35-49     | 29-38-53     | 33-40-57     | 37-45-64     | 40-49-70     | 44-53-75     |  |  |

Performance notes appear at end of table



# PERFORMANCE DATA—LIGHT COMMERCIAL

## 900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

| Nom. Duct Size (in.) | Nom. Duct Area (ft <sup>2</sup> ) | Core Area (ft <sup>2</sup> ) | NC-20       |           | NC-30     |           | NC-40      |            | NC-50      |             |             |             |
|----------------------|-----------------------------------|------------------------------|-------------|-----------|-----------|-----------|------------|------------|------------|-------------|-------------|-------------|
|                      |                                   |                              | Core Vel.   | 300       | 400       | 500       | 600        | 700        | 800        | 1000        | 1200        | 1400        |
|                      |                                   |                              | Vel. Press. | 0.006     | 0.010     | 0.016     | 0.022      | 0.031      | 0.040      | 0.062       | 0.090       | 0.122       |
| 42x24<br>36x28       | 7.00                              | 6.66                         | Total       | 0.016     | 0.029     | 0.046     | 0.066      | 0.090      | 0.117      | 0.183       | 0.263       | 0.358       |
|                      |                                   |                              | Throw 22.5° | 0.018     | 0.033     | 0.051     | 0.074      | 0.100      | 0.131      | 0.204       | 0.294       | 0.401       |
|                      |                                   |                              | Press. 45°  | 0.028     | 0.049     | 0.077     | 0.111      | 0.152      | 0.198      | 0.309       | 0.445       | 0.606       |
|                      |                                   |                              | cfm         | 1998      | 2664      | 3330      | 3996       | 4662       | 5328       | 6660        | 7992        | 9324        |
|                      |                                   |                              | NC          | -         | 18        | 25        | 30         | 35         | 39         | 46          | 51          | 56          |
|                      |                                   |                              | Throw 0°    | 28-44-82  | 39-59-95  | 49-74-106 | 59-82-116  | 69-89-126  | 77-95-134  | 87-106-150  | 95-116-164  | 102-126-178 |
|                      |                                   |                              | Throw 22.5° | 21-34-64  | 30-46-74  | 38-57-82  | 46-64-90   | 53-69-97   | 60-74-104  | 67-82-116   | 74-90-127   | 79-97-138   |
|                      |                                   |                              | Throw 45°   | 12-20-37  | 18-26-43  | 22-33-48  | 26-37-52   | 31-40-56   | 35-43-60   | 39-48-68    | 43-52-74    | 46-56-80    |
| 46x22                | 7.03                              | 6.68                         | cfm         | 2004      | 2672      | 3340      | 4008       | 4676       | 5344       | 6680        | 8016        | 9352        |
|                      |                                   |                              | NC          | -         | 18        | 25        | 30         | 35         | 39         | 46          | 51          | 56          |
|                      |                                   |                              | Throw 0°    | 28-44-82  | 39-59-95  | 49-74-106 | 59-82-116  | 69-89-126  | 78-95-134  | 87-106-150  | 95-116-165  | 103-126-178 |
|                      |                                   |                              | Throw 22.5° | 21-34-64  | 30-46-74  | 38-57-82  | 46-64-90   | 53-69-97   | 60-74-104  | 67-82-116   | 74-90-128   | 80-97-138   |
|                      |                                   |                              | Throw 45°   | 12-20-37  | 18-27-43  | 22-33-48  | 27-37-52   | 31-40-57   | 35-43-60   | 39-48-68    | 43-52-74    | 46-57-80    |
| 32x32                | 7.11                              | 6.78                         | cfm         | 2034      | 2712      | 3390      | 4068       | 4746       | 5424       | 6780        | 8136        | 9492        |
|                      |                                   |                              | NC          | -         | 18        | 25        | 30         | 35         | 39         | 46          | 51          | 56          |
|                      |                                   |                              | Throw 0°    | 28-45-83  | 40-59-96  | 49-74-107 | 59-83-117  | 69-90-127  | 78-96-135  | 87-107-151  | 96-117-166  | 103-127-179 |
|                      |                                   |                              | Throw 22.5° | 22-34-64  | 31-46-74  | 38-57-83  | 46-64-91   | 54-69-98   | 61-74-105  | 68-83-117   | 74-91-129   | 80-98-139   |
|                      |                                   |                              | Throw 45°   | 12-20-37  | 18-27-43  | 22-33-48  | 27-37-53   | 31-40-57   | 35-43-61   | 39-48-68    | 43-53-75    | 47-57-81    |
| 36x30                | 7.50                              | 7.16                         | cfm         | 2148      | 2864      | 3580      | 4296       | 5012       | 5728       | 7160        | 8592        | 10024       |
|                      |                                   |                              | NC          | -         | 19        | 25        | 31         | 35         | 39         | 46          | 51          | 56          |
|                      |                                   |                              | Throw 0°    | 29-46-85  | 41-61-98  | 51-76-110 | 61-85-121  | 71-92-130  | 80-98-139  | 90-110-156  | 98-121-170  | 106-130-184 |
|                      |                                   |                              | Throw 22.5° | 22-35-66  | 32-47-76  | 39-59-85  | 47-66-93   | 55-71-101  | 62-76-108  | 70-85-121   | 76-93-132   | 82-101-143  |
|                      |                                   |                              | Throw 45°   | 13-21-38  | 18-27-44  | 23-34-50  | 27-38-54   | 32-41-59   | 36-44-63   | 40-50-70    | 44-54-77    | 48-59-83    |
| 48x24<br>36x32       | 8.00                              | 7.63                         | cfm         | 2289      | 3052      | 3815      | 4578       | 5341       | 6104       | 7630        | 9156        | 10682       |
|                      |                                   |                              | NC          | -         | 19        | 25        | 31         | 35         | 39         | 46          | 52          | 56          |
|                      |                                   |                              | Throw 0°    | 29-47-88  | 42-63-102 | 52-79-114 | 63-88-124  | 73-95-134  | 83-102-144 | 93-114-161  | 102-124-176 | 110-134-190 |
|                      |                                   |                              | Throw 22.5° | 23-37-68  | 33-49-79  | 41-61-88  | 49-68-96   | 57-74-104  | 64-79-111  | 72-88-124   | 79-96-136   | 85-104-147  |
|                      |                                   |                              | Throw 45°   | 13-21-40  | 19-28-46  | 24-35-51  | 28-40-56   | 33-43-60   | 37-46-65   | 42-51-72    | 46-56-79    | 49-60-86    |
| 34x34                | 8.03                              | 7.68                         | cfm         | 2304      | 3072      | 3840      | 4608       | 5376       | 6144       | 7680        | 9216        | 10752       |
|                      |                                   |                              | NC          | -         | 19        | 25        | 31         | 36         | 40         | 46          | 52          | 56          |
|                      |                                   |                              | Throw 0°    | 30-47-88  | 42-63-102 | 53-79-114 | 63-88-125  | 74-95-135  | 83-102-144 | 93-114-161  | 102-125-176 | 110-135-191 |
|                      |                                   |                              | Throw 22.5° | 23-37-68  | 33-49-79  | 41-61-88  | 49-68-97   | 57-74-104  | 64-79-112  | 72-88-125   | 79-97-137   | 85-104-148  |
|                      |                                   |                              | Throw 45°   | 13-21-40  | 19-28-46  | 24-36-51  | 28-40-56   | 33-43-61   | 37-46-65   | 42-51-73    | 46-56-79    | 50-61-86    |
| 36x34                | 8.50                              | 8.14                         | cfm         | 2442      | 3256      | 4070      | 4884       | 5698       | 6512       | 8140        | 9768        | 11396       |
|                      |                                   |                              | NC          | -         | 19        | 26        | 31         | 36         | 40         | 46          | 52          | 56          |
|                      |                                   |                              | Throw 0°    | 30-49-91  | 43-65-105 | 54-81-117 | 65-91-128  | 76-98-139  | 86-105-148 | 96-117-166  | 105-128-182 | 113-139-196 |
|                      |                                   |                              | Throw 22.5° | 24-38-70  | 34-50-81  | 42-63-91  | 50-70-100  | 59-76-108  | 66-81-115  | 74-91-129   | 81-100-141  | 88-108-152  |
|                      |                                   |                              | Throw 45°   | 14-22-41  | 20-29-47  | 24-37-53  | 29-41-58   | 34-44-62   | 39-47-67   | 43-53-75    | 47-58-82    | 51-62-88    |
| 42x30                | 8.75                              | 8.38                         | cfm         | 2514      | 3352      | 4190      | 5028       | 5866       | 6704       | 8380        | 10056       | 11732       |
|                      |                                   |                              | NC          | 11        | 19        | 26        | 31         | 36         | 40         | 47          | 52          | 57          |
|                      |                                   |                              | Throw 0°    | 31-49-92  | 44-66-106 | 55-82-119 | 66-92-130  | 77-100-141 | 87-106-151 | 97-119-168  | 106-130-184 | 115-141-199 |
|                      |                                   |                              | Throw 22.5° | 24-38-71  | 34-51-82  | 43-64-92  | 51-71-101  | 60-77-109  | 67-82-117  | 75-92-130   | 82-101-143  | 89-109-154  |
|                      |                                   |                              | Throw 45°   | 14-22-41  | 20-30-48  | 25-37-54  | 30-41-59   | 35-45-63   | 39-48-68   | 44-54-76    | 48-59-83    | 52-63-90    |
| 36x36                | 9.00                              | 8.63                         | cfm         | 2589      | 3452      | 4315      | 5178       | 6041       | 6904       | 8630        | 10356       | 12082       |
|                      |                                   |                              | NC          | 11        | 19        | 26        | 31         | 36         | 40         | 47          | 52          | 57          |
|                      |                                   |                              | Throw 0°    | 31-50-94  | 45-67-108 | 56-84-121 | 67-94-132  | 78-101-143 | 88-108-153 | 99-121-171  | 108-132-187 | 117-143-202 |
|                      |                                   |                              | Throw 22.5° | 24-39-72  | 35-52-84  | 43-65-94  | 52-72-103  | 61-78-111  | 68-84-118  | 76-94-132   | 84-103-145  | 90-111-157  |
|                      |                                   |                              | Throw 45°   | 14-23-42  | 20-30-49  | 25-38-54  | 30-42-60   | 35-45-64   | 40-49-69   | 44-54-77    | 49-60-84    | 53-64-91    |
| 42x34<br>48x30       | 10.00                             | 9.6                          | cfm         | 2880      | 3840      | 4800      | 5760       | 6720       | 7680       | 9600        | 11520       | 13440       |
|                      |                                   |                              | NC          | 11        | 20        | 26        | 32         | 36         | 40         | 47          | 53          | 57          |
|                      |                                   |                              | Throw 0°    | 33-53-99  | 47-71-114 | 59-88-127 | 71-99-140  | 82-107-151 | 93-114-161 | 104-127-180 | 114-140-197 | 123-151-213 |
|                      |                                   |                              | Throw 22.5° | 26-41-76  | 36-55-88  | 46-68-99  | 55-76-108  | 64-83-117  | 72-88-125  | 81-99-140   | 88-108-153  | 95-117-165  |
|                      |                                   |                              | Throw 45°   | 15-24-44  | 21-32-51  | 26-40-57  | 32-44-63   | 37-48-68   | 42-51-73   | 47-57-81    | 51-63-89    | 55-68-96    |
| 38x38                | 10.03                             | 9.64                         | cfm         | 2892      | 3856      | 4820      | 5784       | 6748       | 7712       | 9640        | 11568       | 13496       |
|                      |                                   |                              | NC          | 11        | 20        | 26        | 32         | 36         | 40         | 47          | 53          | 57          |
|                      |                                   |                              | Throw 0°    | 33-53-99  | 47-71-114 | 59-88-128 | 71-99-140  | 83-107-151 | 93-114-161 | 104-128-181 | 114-140-198 | 123-151-214 |
|                      |                                   |                              | Throw 22.5° | 26-41-77  | 37-55-88  | 46-69-99  | 55-77-108  | 64-83-117  | 72-88-125  | 81-99-140   | 88-108-153  | 96-117-166  |
|                      |                                   |                              | Throw 45°   | 15-24-44  | 21-32-51  | 27-40-57  | 32-44-63   | 37-48-68   | 42-51-73   | 47-57-81    | 51-63-89    | 55-68-96    |
| 42x36                | 10.50                             | 10.1                         | cfm         | 3030      | 4040      | 5050      | 6060       | 7070       | 8080       | 10100       | 12120       | 14140       |
|                      |                                   |                              | NC          | 11        | 20        | 27        | 32         | 37         | 41         | 47          | 53          | 57          |
|                      |                                   |                              | Throw 0°    | 34-54-101 | 48-72-117 | 60-91-131 | 72-101-143 | 85-109-155 | 95-117-165 | 107-131-185 | 117-143-202 | 126-155-219 |
|                      |                                   |                              | Throw 22.5° | 26-42-78  | 37-56-91  | 47-70-101 | 56-78-111  | 65-85-120  | 74-91-128  | 83-101-143  | 91-111-157  | 98-120-169  |
|                      |                                   |                              | Throw 45°   | 15-24-46  | 22-33-53  | 27-41-59  | 33-46-64   | 38-49-70   | 43-53-74   | 48-59-83    | 53-64-91    | 57-70-98    |
| 46x34                | 10.86                             | 10.45                        | cfm         | 3135      | 4180      | 5225      | 6270       | 7315       | 8360       | 10450       | 12450       | 14530       |
|                      |                                   |                              | NC          | 11        | 20        | 27        | 32         | 37         | 41         | 47          | 53          | 58          |
|                      |                                   |                              | Throw 0°    | 34-55-103 | 49-74-119 | 61-92-133 | 74-103-146 | 86-111-157 | 97-119-168 | 109-133-188 | 119-146-206 | 128-157-222 |
|                      |                                   |                              | Throw 22.5° | 27-43-80  | 38-57-92  | 48-71-103 | 57-80-113  | 67-86-122  | 75-92-130  | 84-103-146  | 92-113-160  | 99-122-172  |
|                      |                                   |                              | Throw 45°   | 16-25-46  | 22-33-53  | 28-41-60  | 33-46-66   | 39-50-71   | 44-53-76   | 49-60-85    | 53-66-93    | 58-71-100   |

Performance notes appear at end of table



900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

| Nom. Duct Size (in.) | Nom. Duct Area (ft <sup>2</sup> ) | Core Area (ft <sup>2</sup> ) | NC-20       |                                | NC-30                 |                       |                       | NC-40                  |                        | NC-50                    |                          |                          |
|----------------------|-----------------------------------|------------------------------|-------------|--------------------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|
|                      |                                   |                              | Core Vel.   | 300                            | 400                   | 500                   | 600                   | 700                    | 800                    | 1000                     | 1200                     | 1400                     |
|                      |                                   |                              | Vel. Press. | 0.006                          | 0.010                 | 0.016                 | 0.022                 | 0.031                  | 0.040                  | 0.062                    | 0.090                    | 0.122                    |
|                      |                                   |                              | 0°          | 0.016                          | 0.029                 | 0.046                 | 0.066                 | 0.090                  | 0.117                  | 0.183                    | 0.263                    | 0.358                    |
|                      |                                   |                              | Total 22.5° | 0.018                          | 0.033                 | 0.051                 | 0.074                 | 0.100                  | 0.131                  | 0.204                    | 0.294                    | 0.401                    |
|                      |                                   |                              | Press. 45°  | 0.028                          | 0.049                 | 0.077                 | 0.111                 | 0.152                  | 0.198                  | 0.309                    | 0.445                    | 0.606                    |
| 42x38                | 11.08                             | 10.67                        | cfm         | 3201                           | 4268                  | 5335                  | 6402                  | 7469                   | 8536                   | 10670                    | 12804                    | 14938                    |
|                      |                                   |                              | NC          | 12                             | 20                    | 27                    | 32                    | 37                     | 41                     | 48                       | 53                       | 58                       |
|                      |                                   |                              | 0°          | 35-56-104                      | 50-74-120             | 62-93-134             | 74-104-147            | 87-112-159             | 98-120-170             | 110-134-190              | 120-147-208              | 130-159-225              |
|                      |                                   |                              | Throw (ft)  | 22.5° 27-43-81<br>45° 16-25-47 | 38-58-93<br>22-34-54  | 48-72-104<br>28-42-60 | 58-81-114<br>34-47-66 | 67-87-123<br>39-51-71  | 76-93-132<br>44-54-76  | 85-104-147<br>49-60-85   | 93-114-161<br>54-66-94   | 101-123-174<br>58-71-101 |
| 40x40                | 11.11                             | 10.7                         | cfm         | 3210                           | 4280                  | 5350                  | 6420                  | 7490                   | 8560                   | 10700                    | 12840                    | 14980                    |
|                      |                                   |                              | NC          | 12                             | 20                    | 27                    | 32                    | 37                     | 41                     | 48                       | 53                       | 58                       |
|                      |                                   |                              | 0°          | 35-56-104                      | 50-75-120             | 62-93-134             | 75-104-147            | 87-113-159             | 98-120-170             | 110-134-190              | 120-147-208              | 130-159-225              |
|                      |                                   |                              | Throw (ft)  | 22.5° 27-43-81<br>45° 16-25-47 | 39-58-93<br>22-34-54  | 48-72-104<br>28-42-61 | 58-81-114<br>34-47-66 | 67-87-123<br>39-51-72  | 76-93-132<br>44-54-77  | 85-104-147<br>49-61-86   | 93-114-161<br>54-66-94   | 101-123-174<br>58-72-101 |
| 48x36                | 12.00                             | 11.57                        | cfm         | 3471                           | 4628                  | 5785                  | 6942                  | 8099                   | 9256                   | 11570                    | 13884                    | 16198                    |
|                      |                                   |                              | NC          | 12                             | 21                    | 27                    | 33                    | 37                     | 41                     | 48                       | 53                       | 58                       |
|                      |                                   |                              | 0°          | 36-58-108                      | 52-78-125             | 65-97-140             | 78-108-153            | 90-117-165             | 102-125-177            | 114-140-198              | 125-153-217              | 135-165-234              |
|                      |                                   |                              | Throw (ft)  | 22.5° 28-45-84<br>45° 16-26-49 | 40-60-97<br>23-35-56  | 50-75-108<br>29-44-63 | 60-84-119<br>35-49-69 | 70-91-128<br>41-53-74  | 79-97-137<br>46-56-80  | 88-108-153<br>51-63-89   | 97-119-168<br>56-69-97   | 105-128-181<br>61-74-105 |
| 42x42                | 12.25                             | 11.82                        | cfm         | 3546                           | 4728                  | 5910                  | 7092                  | 8274                   | 9456                   | 11820                    | 14184                    | 16548                    |
|                      |                                   |                              | NC          | 12                             | 21                    | 27                    | 33                    | 37                     | 41                     | 48                       | 53                       | 58                       |
|                      |                                   |                              | 0°          | 37-59-109                      | 52-78-126             | 65-98-141             | 78-109-155            | 91-118-167             | 103-126-179            | 115-141-200              | 126-155-219              | 137-167-236              |
|                      |                                   |                              | Throw (ft)  | 22.5° 28-46-85<br>45° 16-26-49 | 40-61-98<br>24-35-57  | 51-76-110<br>29-44-64 | 61-85-120<br>35-49-70 | 71-92-130<br>41-53-75  | 80-98-139<br>46-57-80  | 89-110-155<br>52-64-90   | 98-120-170<br>57-70-99   | 106-130-183<br>61-75-106 |
| 44x44                | 13.44                             | 12.99                        | cfm         | 3897                           | 5196                  | 6495                  | 7794                  | 9093                   | 10392                  | 12990                    | 15588                    | 18186                    |
|                      |                                   |                              | NC          | 12                             | 21                    | 28                    | 33                    | 38                     | 42                     | 48                       | 54                       | 58                       |
|                      |                                   |                              | 0°          | 38-62-115                      | 55-82-133             | 68-103-148            | 82-115-162            | 96-124-175             | 108-133-187            | 121-148-210              | 133-162-230              | 143-175-248              |
|                      |                                   |                              | Throw (ft)  | 22.5° 30-48-89<br>45° 17-28-52 | 42-64-103<br>25-37-60 | 53-80-115<br>31-46-67 | 64-89-126<br>37-52-73 | 74-96-136<br>43-56-79  | 84-103-145<br>49-60-84 | 94-115-162<br>54-67-94   | 103-126-178<br>60-73-103 | 111-136-192<br>64-79-112 |
| 48x42                | 14.00                             | 13.54                        | cfm         | 4062                           | 5416                  | 6770                  | 8124                  | 9478                   | 10832                  | 13540                    | 16248                    | 18956                    |
|                      |                                   |                              | NC          | 13                             | 21                    | 28                    | 33                    | 38                     | 42                     | 49                       | 54                       | 59                       |
|                      |                                   |                              | 0°          | 39-63-117                      | 56-84-135             | 70-105-151            | 84-117-166            | 98-127-179             | 110-135-191            | 124-151-214              | 135-166-234              | 146-179-253              |
|                      |                                   |                              | Throw (ft)  | 22.5° 30-49-91<br>45° 18-28-53 | 43-65-105<br>25-38-61 | 54-81-117<br>31-47-68 | 65-91-128<br>38-53-75 | 76-98-139<br>44-57-81  | 86-105-148<br>50-61-86 | 96-117-166<br>56-68-96   | 105-128-182<br>61-75-105 | 113-139-196<br>66-81-114 |
| 46x46                | 14.69                             | 14.22                        | cfm         | 4266                           | 5688                  | 7110                  | 8532                  | 9954                   | 11376                  | 14220                    | 17064                    | 19908                    |
|                      |                                   |                              | NC          | 13                             | 21                    | 28                    | 33                    | 38                     | 42                     | 49                       | 54                       | 59                       |
|                      |                                   |                              | 0°          | 40-64-120                      | 57-86-139             | 72-107-155            | 86-120-170            | 100-130-183            | 113-139-196            | 127-155-219              | 139-170-240              | 150-183-259              |
|                      |                                   |                              | Throw (ft)  | 22.5° 31-50-93<br>45° 18-29-54 | 44-67-107<br>26-39-62 | 56-83-120<br>32-48-70 | 67-93-132<br>39-54-76 | 78-101-142<br>45-58-83 | 88-107-152<br>51-62-88 | 98-120-170<br>57-70-99   | 107-132-186<br>62-76-108 | 116-142-201<br>67-83-117 |
| 48x46                | 15.33                             | 14.85                        | cfm         | 4455                           | 5940                  | 7425                  | 8910                  | 10395                  | 11880                  | 14850                    | 17820                    | 20790                    |
|                      |                                   |                              | NC          | 13                             | 22                    | 28                    | 34                    | 38                     | 42                     | 49                       | 54                       | 59                       |
|                      |                                   |                              | 0°          | 41-66-123                      | 59-88-142             | 73-110-158            | 88-123-174            | 102-133-187            | 116-142-200            | 129-158-224              | 142-174-245              | 153-187-265              |
|                      |                                   |                              | Throw (ft)  | 22.5° 32-51-95<br>45° 18-30-55 | 45-68-110<br>26-40-64 | 57-85-123<br>33-49-71 | 68-95-134<br>40-55-78 | 79-103-145<br>46-60-84 | 90-110-155<br>52-64-90 | 100-123-174<br>58-71-101 | 110-134-190<br>64-78-110 | 119-145-205<br>69-84-119 |
| 48x48                | 16.00                             | 15.50                        | cfm         | 4650                           | 6200                  | 7750                  | 9300                  | 10850                  | 12400                  | 15000                    | 18600                    | 21700                    |
|                      |                                   |                              | NC          | 13                             | 22                    | 28                    | 34                    | 38                     | 42                     | 49                       | 55                       | 59                       |
|                      |                                   |                              | 0°          | 42-67-125                      | 60-90-145             | 75-112-162            | 90-125-177            | 105-135-192            | 118-145-205            | 132-162-229              | 145-177-251              | 156-192-271              |
|                      |                                   |                              | Throw (ft)  | 22.5° 33-52-97<br>45° 19-30-56 | 46-70-112<br>27-40-65 | 58-87-125<br>34-50-73 | 70-97-137<br>40-56-80 | 81-105-148<br>47-61-86 | 92-112-159<br>53-65-92 | 102-125-177<br>59-73-103 | 112-137-194<br>65-80-113 | 121-148-210<br>70-86-122 |

- 0°, 22.5° & 45° represent blade deflection angles
- Performance data is based on duct sizes in bold, the performance varies slightly for duct sizes not shown in bold
- See the section, Engineering Guidelines, for drop information when selecting larger supply grilles for cooling purposes
- See the "Performance Notes" portion in this section for notes and correction factors

- See the section, Engineering Guidelines, for catalog throw information
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10<sup>-12</sup> watts