

PERFORMANCE DATA:

Models RNS and ARNS • 12 x 12 (300 x 300) Face Size

| Nominal Neck Size | Neck Velocity, FPM | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|-------------------|--------------------|-------|--------|--------|--------|--------|---------|---------|---------|----------|----------|
| | Velocity Pressure | .010 | .016 | .023 | .031 | .040 | .051 | .063 | .090 | .122 | .160 |
| 4" Dia. | Total Pressure | .014 | .022 | .032 | .043 | .056 | .071 | .088 | .126 | .172 | .224 |
| | Airflow, CFM | 35 | 44 | 52 | 61 | 70 | 79 | 87 | 105 | 122 | 140 |
| | Throw | 1-2-4 | 2-2-5 | 2-3-5 | 2-3-6 | 2-4-7 | 3-4-7 | 3-5-7 | 4-5-8 | 4-6-9 | 5-7-9 |
| | Noise Criteria | — | — | — | — | — | 11 | 19 | 25 | 30 | 35 |
| 5" Dia. | Total Pressure | .017 | .026 | .038 | .051 | .067 | .085 | .105 | .151 | .206 | .269 |
| | Airflow, CFM | 55 | 68 | 82 | 95 | 109 | 123 | 136 | 164 | 191 | 218 |
| | Throw | 2-2-5 | 2-3-6 | 2-4-6 | 2-4-7 | 2-5-8 | 3-6-9 | 4-6-9 | 5-7-10 | 5-8-11 | 6-8-11 |
| | Noise Criteria | — | — | — | — | — | 14 | 22 | 28 | 33 | 38 |
| 6" Dia. | Total Pressure | .018 | .029 | .043 | .060 | .079 | .100 | .128 | .175 | .250 | .325 |
| | Airflow, CFM | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 235 | 275 | 315 |
| | Throw | 1-2-4 | 1-2-5 | 1-3-6 | 2-3-6 | 2-4-8 | 3-4-8 | 3-4-10 | 4-5-10 | 4-6-14 | 5-8-14 |
| | Noise Criteria | — | — | 11 | 16 | 20 | 22 | 24 | 31 | 38 | 41 |
| 7" Dia. | Total Pressure | .022 | .035 | .050 | .068 | .089 | .112 | .138 | .199 | .271 | .354 |
| | Airflow, CFM | 107 | 134 | 160 | 187 | 214 | 241 | 267 | 321 | 374 | 428 |
| | Throw | 2-4-8 | 3-5-9 | 4-6-10 | 4-7-11 | 5-8-12 | 5-9-13 | 6-10-14 | 7-10-14 | 9-11-15 | 10-12-16 |
| | Noise Criteria | — | — | 12 | 17 | 20 | 24 | 27 | 33 | 39 | 42 |
| 8" Dia. | Total Pressure | .031 | .047 | .065 | .087 | .110 | .140 | .168 | .235 | .310 | .395 |
| | Airflow, CFM | 140 | 175 | 210 | 245 | 280 | 315 | 350 | 420 | 490 | 560 |
| | Throw | 3-5-9 | 4-5-11 | 5-7-13 | 5-8-14 | 6-9-14 | 6-10-15 | 7-11-16 | 8-12-17 | 10-13-18 | 11-14-18 |
| | Noise Criteria | — | — | 13 | 18 | 22 | 26 | 29 | 35 | 40 | 44 |

Models RNS and ARNS • 20 x 20 (500 x 500) Face Size

| Nominal Neck Size | Neck Velocity, FPM | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|-------------------|--------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| | Velocity Pressure | .010 | .016 | .023 | .031 | .040 | .051 | .063 | .090 | .122 | .160 |
| 6" Dia. | Total Pressure | .015 | .023 | .033 | .045 | .058 | .074 | .091 | .130 | .176 | .230 |
| | Airflow, CFM | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 235 | 275 | 315 |
| | Throw | 1-1-3 | 1-2-4 | 1-2-4 | 1-3-5 | 2-3-6 | 2-3-6 | 2-4-7 | 3-5-8 | 3-5-8 | 4-6-9 |
| | Noise Criteria | — | — | 14 | 18 | 21 | 26 | 29 | 34 | 38 | 41 |
| 8" Dia. | Total Pressure | .018 | .028 | .041 | .055 | .072 | .091 | .112 | .161 | .219 | .286 |
| | Airflow, CFM | 140 | 175 | 210 | 245 | 280 | 315 | 350 | 420 | 490 | 560 |
| | Throw | 1-2-5 | 2-3-6 | 2-4-6 | 3-4-7 | 3-5-7 | 4-5-8 | 4-6-8 | 5-6-9 | 6-7-10 | 6-8-11 |
| | Noise Criteria | — | 11 | 16 | 20 | 23 | 28 | 31 | 36 | 40 | 43 |
| 10" Dia. | Total Pressure | .023 | .036 | .052 | .071 | .092 | .117 | .144 | .207 | .281 | .367 |
| | Airflow, CFM | 220 | 270 | 330 | 380 | 435 | 490 | 545 | 655 | 765 | 870 |
| | Throw | 2-4-6 | 3-4-7 | 4-5-8 | 4-6-9 | 5-6-9 | 5-7-10 | 6-7-10 | 6-8-11 | 7-9-12 | 8-9-13 |
| | Noise Criteria | — | 13 | 18 | 22 | 25 | 30 | 33 | 38 | 42 | 45 |

Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
- All pressures are in inches w.g..
- The addition of quadrant blanks reduces the effective area and for a given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and Noise Criteria, use correction factors as shown for 4-way blow values.

- Noise Criteria (NC) are based on a room absorption of 10 dB, re 10⁻¹² watts. Dash (—) in space denotes an Noise Criteria level less than 10.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

| Neck Size Diameter in Inches | Nominal Overall Face Size | Ak Factor |
|------------------------------|---------------------------|-----------|
| 6 | 12 x 12 | .131 |
| 8 | 12 x 12 | .202 |
| 6 | 24 x 24 | .180 |
| 8 | 24 x 24 | .227 |
| 10 | 24 x 24 | .331 |
| 12 | 24 x 24 | .450 |
| 14 | 24 x 24 | .511 |
| 15 | 24 x 24 | .625 |

| Quadrant Blanks (Blow) | % Increase in Air Volume for Throw Determination | % Increase in Static Pressure Drop | NC Sound Level Increase |
|------------------------|--|------------------------------------|-------------------------|
| 1 (3-way) | 35 | 125 | 8 |
| 2 (2-way) | 100 | 450 | 19 |

PERFORMANCE DATA:

Models RNS and ARNS • 24 x 24 (600 x 600) Face Size

| Nominal Neck Size | Neck Velocity, FPM | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|-------------------|--------------------|--------|--------|--------|---------|---------|----------|----------|----------|----------|----------|
| | Velocity Pressure | .010 | .016 | .023 | .031 | .040 | .051 | .063 | .090 | .122 | .160 |
| 6" Dia. | Total Pressure | .015 | .023 | .035 | .045 | .060 | .076 | .095 | .135 | .186 | .240 |
| | Airflow, CFM | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 235 | 275 | 315 |
| | Throw | 1-1-4 | 1-2-5 | 1-2-6 | 1-3-7 | 2-4-9 | 2-5-9 | 3-6-11 | 3-6-12 | 4-7-14 | 6-8-15 |
| | Noise Criteria | — | — | — | 13 | 17 | 21 | 24 | 27 | 32 | 36 |
| 8" Dia. | Total Pressure | .021 | .033 | .047 | .063 | .082 | .105 | .128 | .183 | .245 | .325 |
| | Airflow, CFM | 140 | 175 | 210 | 245 | 280 | 315 | 350 | 420 | 490 | 560 |
| | Throw | 1-1-5 | 1-2-6 | 1-3-8 | 2-4-8 | 3-5-10 | 3-6-10 | 4-6-13 | 5-8-13 | 6-8-16 | 7-10-17 |
| | Noise Criteria | — | — | 13 | 17 | 20 | 25 | 28 | 33 | 37 | 40 |
| 10" Dia. | Total Pressure | .024 | .037 | .047 | .074 | .097 | .123 | .150 | .215 | .293 | .372 |
| | Airflow, CFM | 220 | 270 | 330 | 380 | 435 | 490 | 545 | 655 | 765 | 870 |
| | Throw | 1-3-6 | 2-4-8 | 3-5-9 | 4-6-12 | 5-6-12 | 5-7-14 | 6-9-15 | 6-10-15 | 8-13-17 | 9-13-18 |
| | Noise Criteria | — | 11 | 16 | 20 | 23 | 28 | 31 | 36 | 40 | 43 |
| 12" Dia. | Total Pressure | .026 | .039 | .057 | .075 | .097 | .127 | .150 | .245 | .310 | .410 |
| | Airflow, CFM | 315 | 390 | 470 | 550 | 630 | 705 | 785 | 990 | 1100 | 1255 |
| | Throw | 2-3-7 | 3-4-9 | 3-5-10 | 4-6-13 | 5-7-13 | 5-8-15 | 5-8-16 | 7-9-18 | 9-11-18 | 10-12-19 |
| | Noise Criteria | — | 13 | 18 | 21 | 24 | 29 | 32 | 37 | 41 | 44 |
| 14" Dia. | Total Pressure | .030 | .050 | .070 | .100 | .110 | .160 | .200 | .240 | .390 | .490 |
| | Airflow, CFM | 425 | 530 | 635 | 745 | 850 | 955 | 1060 | 1270 | 1490 | 1695 |
| | Throw | 3-4-9 | 4-5-11 | 4-7-13 | 5-7-16 | 6-9-16 | 7-11-16 | 7-11-19 | 9-13-19 | 11-16-19 | 11-16-27 |
| | Noise Criteria | — | 14 | 19 | 22 | 25 | 29 | 32 | 37 | 42 | 45 |
| 15" Dia. | Total Pressure | .033 | .054 | .072 | .100 | .127 | .163 | .204 | .280 | .395 | .500 |
| | Airflow, CFM | 490 | 615 | 735 | 860 | 985 | 1110 | 1230 | 1470 | 1720 | 1970 |
| | Throw | 5-7-10 | 6-8-11 | 7-9-14 | 8-10-17 | 8-13-18 | 10-15-19 | 11-16-22 | 12-18-27 | 13-20-32 | 15-22-34 |
| | Noise Criteria | — | 15 | 20 | 23 | 26 | 30 | 33 | 38 | 43 | 46 |

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
2. All pressures are in inches w.g..
3. The addition of quadrant blanks reduces the effective area and for a given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and Noise Criteria, use correction factors as shown for 4-way blow values.

4. Noise Criteria (NC) are based on a room absorption of 10 dB, re 10⁻¹² watts. Dash (—) in space denotes an Noise Criteria level less than 10.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2023.

| Neck Size Diameter in Inches | Nominal Overall Face Size | Ak Factor |
|------------------------------|---------------------------|-----------|
| 6 | 12 x 12 | 0.131 |
| 8 | 12 x 12 | 0.202 |
| 6 | 24 x 24 | 0.180 |
| 8 | 24 x 24 | 0.227 |
| 10 | 24 x 24 | 0.331 |
| 12 | 24 x 24 | 0.450 |
| 14 | 24 x 24 | 0.511 |
| 15 | 24 x 24 | 0.625 |

| Quadrant Blanks (Blow) | % Increase in Air Volume for Throw Determination | % Increase in Static Pressure Drop | NC Sound Level Increase |
|------------------------|--|------------------------------------|-------------------------|
| 1 (3-way) | 35 | 125 | 8 |
| 2 (2-way) | 100 | 450 | 19 |