External Insulation Standard

## ▼ Model AVR

**The Carnes Model AVR** is designed to control either by-pass pressure or discharge pressure within a duct system. Such applications would be using a constant volume central fan with Variable Air Volume Units (VAV), multiple Carnes Remote Activated Diffusers (model SRAD), or multiple Carnes Thermal Diffusers (model SFPV). The result is limiting wasted air and reduced noise levels.

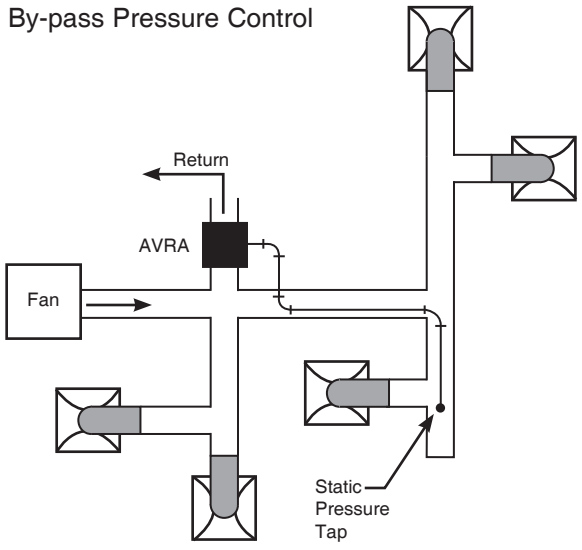
In a By-pass Pressure design, the damper will **open** relieving excess pressure to a return duct or simply into the ceiling plenum. The Model AVR should be sized for handling 80% of the total air flow and then subtracting the amount of air flow of the **smallest** zone. The pressure tap is installed upstream of unit.

In a Discharge Pressure design, the damper will **close** to increase the pressure drop to the duct branch. The model AVR should be sized to handle the **highest** CFM for that branch. The pressure tap is installed downstream of unit.

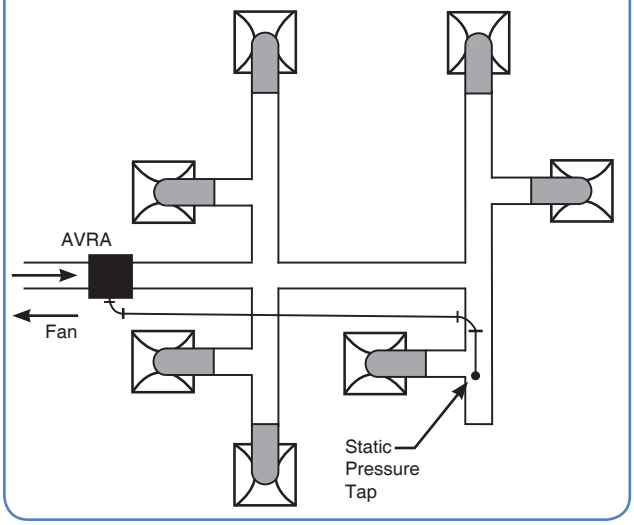
### *Features Include:*

- Air flow capacities from total shut-off to 4,200 CFM (0-3,000 FPM).
- Round inlet/outlet connections.
- Low leakage damper design.
- No insulation in the air stream.
- Unit externally wrapped with 1/2" foil faced insulation that meets UL and NFPA standards.
- Analog or contractor supplied digital controls.

By-pass Pressure Control




Discharge Pressure Control



| Inlet Size (Inches) | CFM | Minimum Pressure Drop (Damper Full Open) Basic Unit |
|---|---|---|
| 5 | 75 | .05 |
| | 100 | .06 |
| | 200 | .11 |
| | 300 | .15 |
| | 350 | .17 |
| 6 | 110 | .01 |
| | 200 | .04 |
| | 300 | .08 |
| | 400 | .14 |
| | 500 | .22 |
| 7 | 140 | .01 |
| | 200 | .02 |
| | 400 | .08 |
| | 600 | .18 |
| | 700 | .25 |
| 8 | 185 | .01 |
| | 400 | .04 |
| | 600 | .08 |
| | 800 | .14 |
| | 1000 | .21 |
| 10 | 300 | .01 |
| | 500 | .02 |
| | 800 | .04 |
| | 1200 | .09 |
| | 1500 | .14 |
| 12 | 430 | .01 |
| | 800 | .03 |
| | 1200 | .05 |
| | 1800 | .09 |
| | 2300 | .12 |
| 14 | 600 | .00 |
| | 1000 | .01 |
| | 1600 | .02 |
| | 2400 | .08 |
| | 3100 | .13 |
| 16 | 780 | .00 |
| | 1600 | .02 |
| | 2400 | .04 |
| | 3600 | .08 |
| | 4200 | .10 |

## AVR

Discharge and Radiated (NC) Noise Criteria

| Min. Δ $P_S$ (Damper Full Open) | | 1.0" Δ $P_S$ | | 1.5" Δ $P_S$ | | 3.0" Δ $P_S$ | |
|---|---|---|---|---|---|---|---|
| Discharge NC | Rad. NC | Discharge NC | Rad. NC | Discharge NC | Rad. NC | Discharge NC | Rad. NC |
| Unit | Unit | Unit | Unit | Unit | Unit | Unit | Unit |
| — | — | — | 11 | 11 | 13 | 19 | 16 |
| — | — | — | 13 | 12 | 15 | 20 | 19 |
| — | — | 15 | 19 | 18 | 21 | 23 | 24 |
| — | — | 19 | 24 | 22 | 24 | 27 | 27 |
| — | 10 | 22 | 27 | 24 | 28 | 29 | 30 |
| — | — | — | — | — | — | 16 | 12 |
| — | — | 12 | 12 | 15 | 13 | 20 | 18 |
| — | — | 17 | 18 | 19 | 19 | 25 | 22 |
| — | — | 21 | 23 | 24 | 24 | 29 | 27 |
| — | 11 | 24 | 27 | 27 | 28 | 33 | 32 |
| — | — | — | — | — | 10 | 16 | 14 |
| — | — | 10 | 10 | 12 | 13 | 19 | 16 |
| — | — | 18 | 19 | 22 | 22 | 28 | 24 |
| — | 12 | 24 | 27 | 28 | 30 | 34 | 32 |
| — | 15 | 27 | 31 | 30 | 32 | 35 | 36 |
| — | — | — | — | — | — | 14 | 12 |
| — | — | 11 | 11 | 15 | 14 | 21 | 19 |
| — | — | 17 | 20 | 19 | 22 | 24 | 26 |
| — | 11 | 19 | 27 | 22 | 28 | 27 | 31 |
| — | 15 | 22 | 31 | 25 | 33 | 30 | 36 |
| — | — | — | — | 13 | 10 | 20 | 14 |
| — | — | 12 | 12 | 16 | 14 | 23 | 19 |
| — | — | 15 | 15 | 19 | 19 | 26 | 22 |
| — | 13 | 19 | 23 | 23 | 24 | 28 | 28 |
| — | 18 | 22 | 27 | 25 | 30 | 30 | 32 |
| — | — | — | 14 | 13 | 16 | 19 | 22 |
| — | — | 13 | 18 | 16 | 21 | 23 | 25 |
| — | 11 | 15 | 20 | 19 | 23 | 25 | 28 |
| — | 21 | 18 | 26 | 21 | 27 | 28 | 31 |
| — | 26 | 20 | 30 | 23 | 31 | 29 | 35 |
| — | — | 11 | 12 | 16 | 14 | 23 | 19 |
| — | — | 14 | 15 | 18 | 19 | 25 | 23 |
| — | 10 | 17 | 20 | 21 | 22 | 28 | 26 |
| — | 20 | 21 | 23 | 23 | 26 | 30 | 30 |
| — | 26 | 23 | 27 | 27 | 30 | 31 | 33 |
| — | — | — | 16 | 13 | 19 | 19 | 24 |
| — | — | 15 | 21 | 17 | 23 | 24 | 28 |
| — | 15 | 19 | 23 | 22 | 25 | 28 | 31 |
| 10 | 26 | 23 | 26 | 27 | 28 | 33 | 33 |
| 15 | 31 | 25 | 28 | 29 | 30 | 34 | 35 |

**NOTES:**
1. *Δ $P_S$ static pressure difference from inlet to discharge.*
2. *Δ $P_S$ is the minimum pressure required to deliver CFM shown with the primary damper in wide open position.*
3. *Δ $P_t$ is the total pressure difference from inlet to discharge.*
4. *Dash (—) indicates NC level less than 10.*

NC levels are derived from tests conducted in accordance with AHRI Standard 880-2008 and are calculated in accordance with AHRI Standard 885-2008 as application data based on the following:

Discharge NC levels are based on —
- a) 5 foot rectangular duct lined with 1" fiberglass insulation.
- b) 5 foot lined flex duct (8" diameter).
- c) Flow division.
- d) Space effect factor (2400 $ft^3$) at 5 feet from outlet.
- e) End reflection.
- f) Environmental adjustment factor.

Radiated NC levels are based on—
- a) Plenum / ceiling effect - 5/8" mineral fiber tile, 35 lb / $ft^3$ - 3 foot plenum.
- b) Environmental adjustment factor.

NC is not part of the AHRI 880 Certification Program.

## *Sound Data (Sound Power by Octave Band)*

### Discharge Sound Power

| Inlet Size (Inches) | CFM | Minimum Δ $P_S$ | | | | | | | 1.0" Δ $P_S$ | | | | | | | 1.5" Δ $P_S$ | | | | | | | 3.0" Δ $P_S$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sound Power (db) by Octave Band | | | | | | | Sound Power (db) by Octave Band | | | | | | | Sound Power (db) by Octave Band | | | | | | | Sound Power (db) by Octave Band | | | | | | |
| | | Δ $P_S$ | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 |
| 5 | 75 | .05 | 37 | 23 | 19 | 19 | 18 | 18 | 46 | 46 | 47 | 49 | 45 | 43 | 48 | 48 | 49 | 52 | 49 | 48 | 51 | 52 | 53 | 58 | 56 | 56 | | | | | | |
| | 100 | .06 | 38 | 28 | 24 | 23 | 22 | 20 | 50 | 50 | 49 | 50 | 47 | 44 | 52 | 52 | 51 | 53 | 51 | 49 | 55 | 55 | 55 | 59 | 58 | 57 | | | | | | |
| | 200 | .11 | 43 | 38 | 35 | 32 | 32 | 26 | 60 | 57 | 54 | 54 | 50 | 47 | 61 | 60 | 57 | 57 | 54 | 52 | 64 | 63 | 61 | 63 | 61 | 60 | | | | | | |
| | 300 | .20 | 45 | 44 | 42 | 37 | 38 | 30 | 65 | 62 | 57 | 56 | 52 | 49 | 67 | 64 | 60 | 60 | 56 | 54 | 70 | 68 | 64 | 65 | 63 | 62 | | | | | | |
| | 350 | .26 | 46 | 46 | 45 | 39 | 40 | 31 | 67 | 64 | 59 | 57 | 53 | 49 | 69 | 66 | 61 | 60 | 57 | 54 | 72 | 70 | 65 | 66 | 64 | 63 | | | | | | |
| 6 | 110 | .02 | 35 | 22 | 15 | 13 | 12 | 14 | 48 | 48 | 48 | 49 | 45 | 41 | 50 | 50 | 51 | 53 | 49 | 45 | 54 | 54 | 56 | 58 | 56 | 53 | | | | | | |
| | 200 | .06 | 39 | 33 | 28 | 25 | 25 | 22 | 56 | 55 | 53 | 53 | 50 | 46 | 58 | 57 | 56 | 56 | 54 | 50 | 62 | 61 | 60 | 62 | 60 | 57 | | | | | | |
| | 300 | .10 | 43 | 40 | 36 | 33 | 34 | 28 | 61 | 60 | 56 | 56 | 53 | 49 | 63 | 62 | 59 | 59 | 57 | 53 | 67 | 66 | 63 | 65 | 63 | 61 | | | | | | |
| | 400 | .16 | 45 | 45 | 43 | 38 | 40 | 32 | 65 | 63 | 58 | 58 | 55 | 51 | 67 | 66 | 61 | 61 | 59 | 55 | 71 | 70 | 65 | 67 | 65 | 63 | | | | | | |
| | 500 | .23 | 47 | 49 | 47 | 43 | 45 | 35 | 68 | 66 | 60 | 59 | 57 | 53 | 70 | 68 | 62 | 62 | 60 | 57 | 74 | 73 | 67 | 68 | 67 | 65 | | | | | | |
| 7 | 140 | .01 | 36 | 20 | 13 | 13 | — | 12 | 48 | 48 | 48 | 49 | 46 | 42 | 50 | 51 | 51 | 52 | 50 | 46 | 55 | 56 | 57 | 57 | 56 | 53 | | | | | | |
| | 200 | .02 | 39 | 26 | 20 | 20 | 17 | 17 | 53 | 53 | 51 | 52 | 49 | 45 | 55 | 55 | 54 | 55 | 52 | 49 | 60 | 60 | 59 | 60 | 58 | 56 | | | | | | |
| | 400 | .08 | 43 | 39 | 36 | 34 | 33 | 29 | 62 | 61 | 57 | 57 | 53 | 49 | 65 | 64 | 60 | 60 | 57 | 53 | 69 | 69 | 65 | 65 | 63 | 60 | | | | | | |
| | 600 | .18 | 46 | 47 | 45 | 42 | 42 | 36 | 68 | 66 | 60 | 60 | 56 | 52 | 70 | 69 | 63 | 62 | 60 | 56 | 75 | 74 | 68 | 67 | 66 | 63 | | | | | | |
| | 700 | .25 | 47 | 50 | 48 | 45 | 46 | 38 | 70 | 68 | 61 | 61 | 57 | 53 | 72 | 71 | 64 | 64 | 61 | 57 | 77 | 75 | 70 | 68 | 67 | 64 | | | | | | |
| 8 | 185 | .01 | 34 | 17 | 11 | 11 | — | 12 | 45 | 47 | 48 | 47 | 44 | 40 | 46 | 49 | 51 | 50 | 47 | 44 | 49 | 53 | 56 | 55 | 53 | 51 | | | | | | |
| | 400 | .04 | 42 | 33 | 29 | 28 | 27 | 25 | 57 | 55 | 53 | 53 | 50 | 46 | 59 | 58 | 56 | 56 | 54 | 50 | 62 | 62 | 61 | 61 | 59 | 57 | | | | | | |
| | 600 | .08 | 46 | 42 | 38 | 37 | 36 | 31 | 63 | 60 | 56 | 56 | 53 | 50 | 65 | 62 | 59 | 59 | 57 | 54 | 68 | 66 | 64 | 64 | 63 | 60 | | | | | | |
| | 800 | .14 | 49 | 48 | 45 | 43 | 43 | 36 | 68 | 63 | 58 | 59 | 56 | 52 | 70 | 65 | 61 | 62 | 59 | 56 | 73 | 69 | 66 | 67 | 65 | 63 | | | | | | |
| | 1000 | .21 | 52 | 52 | 50 | 48 | 48 | 39 | 71 | 65 | 60 | 60 | 58 | 54 | 73 | 68 | 63 | 63 | 61 | 58 | 76 | 72 | 68 | 68 | 67 | 65 | | | | | | |
| 10 | 300 | .01 | 37 | 21 | 13 | 13 | 11 | 13 | 47 | 50 | 49 | 48 | 48 | 45 | 49 | 52 | 52 | 51 | 51 | 49 | 53 | 56 | 57 | 57 | 57 | 56 | | | | | | |
| | 500 | .02 | 40 | 29 | 24 | 24 | 22 | 20 | 55 | 55 | 54 | 51 | 51 | 48 | 57 | 57 | 56 | 54 | 55 | 52 | 60 | 61 | 61 | 60 | 60 | 59 | | | | | | |
| | 800 | .04 | 43 | 37 | 34 | 35 | 32 | 28 | 61 | 59 | 57 | 54 | 54 | 50 | 63 | 62 | 60 | 57 | 58 | 55 | 67 | 66 | 65 | 63 | 63 | 62 | | | | | | |
| | 1200 | .09 | 45 | 44 | 43 | 44 | 41 | 34 | 67 | 63 | 61 | 57 | 57 | 53 | 69 | 66 | 64 | 60 | 60 | 57 | 72 | 70 | 68 | 66 | 66 | 64 | | | | | | |
| | 1500 | .14 | 47 | 48 | 48 | 49 | 46 | 37 | 70 | 65 | 63 | 58 | 58 | 54 | 72 | 68 | 65 | 62 | 62 | 58 | 76 | 72 | 70 | 67 | 67 | 65 | | | | | | |
| 12 | 430 | .01 | 38 | 19 | 14 | 15 | 14 | 14 | 49 | 47 | 49 | 49 | 48 | 45 | 50 | 50 | 52 | 52 | 52 | 49 | 54 | 54 | 56 | 58 | 57 | 55 | | | | | | |
| | 800 | .03 | 42 | 29 | 27 | 29 | 25 | 22 | 57 | 53 | 54 | 53 | 52 | 49 | 59 | 56 | 57 | 56 | 56 | 52 | 62 | 60 | 61 | 62 | 61 | 59 | | | | | | |
| | 1200 | .05 | 45 | 36 | 36 | 38 | 33 | 26 | 62 | 57 | 57 | 55 | 55 | 51 | 64 | 60 | 60 | 58 | 58 | 55 | 67 | 64 | 65 | 64 | 64 | 61 | | | | | | |
| | 1800 | .09 | 48 | 43 | 45 | 47 | 40 | 31 | 67 | 61 | 61 | 57 | 58 | 54 | 69 | 64 | 63 | 61 | 61 | 57 | 73 | 68 | 68 | 67 | 67 | 64 | | | | | | |
| | 2300 | .12 | 49 | 47 | 50 | 53 | 45 | 34 | 70 | 63 | 63 | 58 | 59 | 55 | 72 | 66 | 65 | 62 | 63 | 59 | 76 | 70 | 70 | 68 | 68 | 65 | | | | | | |
| 14 | 600 | .01 | 32 | 21 | 14 | 16 | 12 | 13 | 49 | 50 | 48 | 45 | 49 | 47 | 51 | 53 | 51 | 49 | 53 | 52 | 55 | 58 | 56 | 55 | 59 | 59 | | | | | | |
| | 1000 | .02 | 38 | 30 | 27 | 27 | 24 | 21 | 55 | 55 | 53 | 50 | 52 | 50 | 57 | 58 | 56 | 54 | 56 | 54 | 61 | 63 | 61 | 60 | 62 | 61 | | | | | | |
| | 1600 | .04 | 44 | 39 | 39 | 38 | 34 | 29 | 60 | 60 | 57 | 55 | 55 | 53 | 63 | 62 | 60 | 59 | 58 | 57 | 67 | 67 | 65 | 65 | 65 | 64 | | | | | | |
| | 2400 | .08 | 48 | 46 | 49 | 47 | 43 | 36 | 65 | 64 | 61 | 59 | 57 | 55 | 67 | 66 | 64 | 63 | 61 | 59 | 71 | 71 | 69 | 69 | 67 | 66 | | | | | | |
| | 3100 | .13 | 51 | 50 | 55 | 53 | 49 | 40 | 68 | 66 | 63 | 61 | 59 | 56 | 70 | 69 | 66 | 65 | 62 | 60 | 74 | 73 | 71 | 72 | 68 | 67 | | | | | | |
| 16 | 780 | .00 | 35 | 24 | 16 | 17 | 16 | 14 | 50 | 52 | 48 | 50 | 50 | 45 | 53 | 55 | 51 | 53 | 53 | 49 | 57 | 59 | 55 | 59 | 60 | 55 | | | | | | |
| | 1600 | .02 | 44 | 38 | 36 | 33 | 31 | 25 | 59 | 59 | 55 | 55 | 54 | 50 | 61 | 61 | 57 | 58 | 58 | 53 | 65 | 66 | 62 | 63 | 64 | 60 | | | | | | |
| | 2400 | .04 | 50 | 45 | 47 | 43 | 39 | 32 | 63 | 63 | 59 | 58 | 56 | 52 | 66 | 65 | 61 | 61 | 60 | 56 | 70 | 70 | 66 | 66 | 66 | 63 | | | | | | |
| | 3600 | .08 | 55 | 53 | 58 | 52 | 47 | 38 | 68 | 66 | 63 | 61 | 59 | 55 | 70 | 69 | 65 | 64 | 63 | 59 | 75 | 74 | 70 | 69 | 69 | 65 | | | | | | |
| | 4200 | .10 | 57 | 56 | 63 | 55 | 50 | 41 | 70 | 68 | 64 | 62 | 60 | 56 | 72 | 71 | 67 | 65 | 64 | 60 | 76 | 75 | 71 | 70 | 70 | 66 | | | | | | |

**NOTES:**
1. *Based on tests conducted in accordance with AHRI Standard 880-2008.*
2. *Δ $P_S$ static pressure difference from inlet to discharge.*
3. *Δ $P_S$ is the minimum pressure required to deliver CFM shown with primary damper in wide open position.*
4. *Dash (—) indicates db level less than 10.*

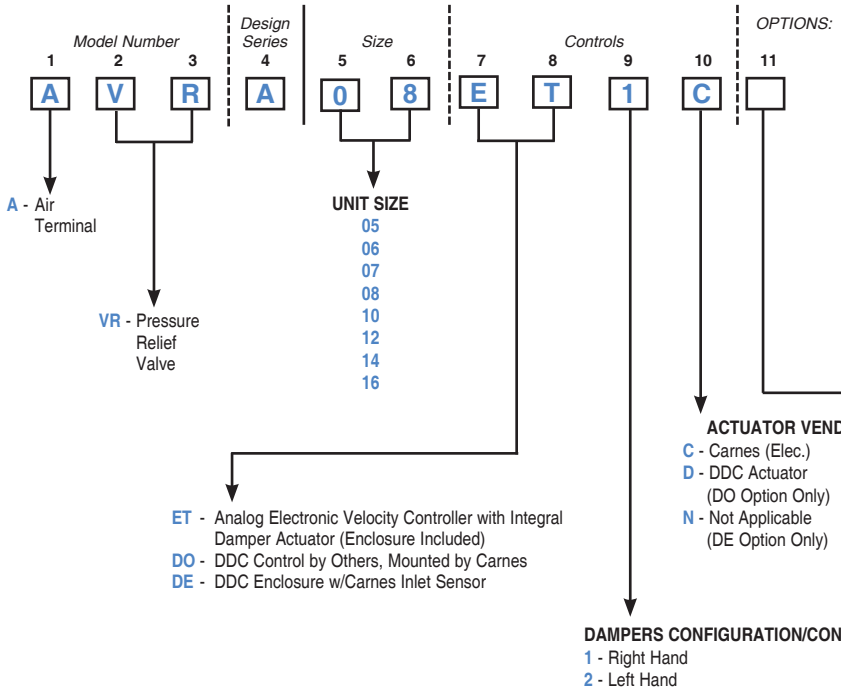
## *Sound Data (Sound Power by Octave Band)*

### Radiated Sound Power

| Inlet Size (Inches) | CFM | Minimum Δ $P_S$ | | | | | | | 1.0" Δ $P_S$ | | | | | | | 1.5" Δ $P_S$ | | | | | | | 3.0" Δ $P_S$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sound Power (db) by Octave Band | | | | | | | Sound Power (db) by Octave Band | | | | | | | Sound Power (db) by Octave Band | | | | | | | Sound Power (db) by Octave Band | | | | | | |
| | | Δ $P_S$ | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 | (2) 125 | (3) 250 | (4) 500 | (5) 1000 | (6) 2000 | (7) 4000 |
| 5 | 75 | .05 | 22 | 29 | 24 | 16 | 15 | 17 | 42 | 35 | 38 | 34 | 32 | 26 | 42 | 37 | 40 | 37 | 36 | 31 | 44 | 40 | 43 | 42 | 43 | 40 |
| | 100 | .06 | 27 | 31 | 26 | 19 | 16 | 17 | 46 | 39 | 40 | 36 | 33 | 27 | 47 | 40 | 42 | 39 | 37 | 32 | 48 | 43 | 45 | 44 | 44 | 41 |
| | 200 | .11 | 40 | 36 | 32 | 25 | 18 | 17 | 56 | 46 | 45 | 40 | 35 | 29 | 57 | 48 | 47 | 43 | 39 | 34 | 58 | 51 | 50 | 48 | 47 | 43 |
| | 300 | .20 | 48 | 40 | 35 | 28 | 20 | 18 | 62 | 51 | 48 | 43 | 36 | 30 | 62 | 52 | 50 | 46 | 41 | 35 | 64 | 55 | 52 | 51 | 48 | 44 |
| | 350 | .26 | 51 | 41 | 36 | 29 | 20 | 18 | 64 | 52 | 49 | 44 | 37 | 31 | 65 | 54 | 51 | 47 | 41 | 36 | 66 | 57 | 54 | 51 | 49 | 44 |
| 6 | 110 | .02 | 38 | 23 | 15 | 13 | 13 | 17 | 42 | 34 | 34 | 28 | 27 | 24 | 43 | 36 | 35 | 31 | 32 | 28 | 45 | 40 | 39 | 35 | 39 | 36 |
| | 200 | .06 | 39 | 31 | 24 | 21 | 17 | 17 | 51 | 42 | 39 | 33 | 31 | 26 | 52 | 44 | 40 | 36 | 35 | 31 | 54 | 48 | 44 | 40 | 42 | 39 |
| | 300 | .10 | 40 | 35 | 30 | 26 | 20 | 18 | 57 | 47 | 42 | 37 | 33 | 28 | 58 | 50 | 44 | 39 | 37 | 32 | 60 | 54 | 47 | 43 | 44 | 40 |
| | 400 | .16 | 41 | 39 | 34 | 30 | 22 | 18 | 61 | 51 | 44 | 39 | 34 | 29 | 62 | 54 | 46 | 42 | 38 | 34 | 64 | 57 | 50 | 46 | 46 | 42 |
| | 500 | .23 | 41 | 41 | 38 | 33 | 23 | 18 | 64 | 54 | 46 | 41 | 35 | 30 | 65 | 57 | 48 | 43 | 40 | 34 | 68 | 60 | 51 | 48 | 47 | 43 |
| 7 | 140 | .01 | 33 | 17 | 11 | — | 11 | 16 | 42 | 35 | 35 | 30 | 28 | 25 | 43 | 37 | 37 | 32 | 32 | 30 | 46 | 42 | 41 | 37 | 39 | 38 |
| | 200 | .02 | 36 | 22 | 18 | 15 | 14 | 17 | 48 | 40 | 37 | 32 | 30 | 26 | 49 | 42 | 40 | 35 | 34 | 31 | 51 | 47 | 43 | 39 | 41 | 39 |
| | 400 | .08 | 41 | 33 | 31 | 27 | 21 | 18 | 58 | 49 | 42 | 37 | 33 | 29 | 60 | 52 | 45 | 39 | 37 | 33 | 62 | 56 | 48 | 44 | 44 | 41 |
| | 600 | .18 | 44 | 39 | 39 | 33 | 24 | 19 | 64 | 54 | 45 | 39 | 35 | 30 | 66 | 57 | 48 | 42 | 39 | 35 | 68 | 62 | 51 | 46 | 46 | 42 |
| | 700 | .25 | 45 | 41 | 42 | 36 | 26 | 20 | 67 | 56 | 46 | 40 | 36 | 30 | 68 | 59 | 49 | 43 | 40 | 35 | 71 | 64 | 53 | 47 | 47 | 43 |
| 8 | 185 | .01 | 39 | 24 | 13 | 10 | 10 | 15 | 44 | 36 | 34 | 30 | 30 | 29 | 46 | 39 | 36 | 33 | 34 | 33 | 49 | 43 | 41 | 38 | 41 | 41 |
| | 400 | .04 | 44 | 33 | 26 | 22 | 19 | 19 | 53 | 43 | 38 | 34 | 33 | 30 | 54 | 45 | 41 | 37 | 37 | 35 | 57 | 49 | 45 | 42 | 44 | 43 |
| | 600 | .08 | 47 | 37 | 33 | 29 | 24 | 20 | 57 | 46 | 40 | 36 | 34 | 31 | 59 | 48 | 43 | 39 | 39 | 36 | 62 | 53 | 47 | 44 | 46 | 44 |
| | 800 | .14 | 48 | 40 | 38 | 33 | 27 | 22 | 60 | 48 | 42 | 37 | 35 | 32 | 62 | 51 | 44 | 40 | 40 | 36 | 65 | 55 | 49 | 45 | 47 | 45 |
| | 1000 | .21 | 50 | 43 | 42 | 37 | 30 | 23 | 63 | 50 | 43 | 39 | 36 | 32 | 64 | 52 | 45 | 41 | 40 | 37 | 67 | 57 | 50 | 47 | 47 | 45 |
| 10 | 300 | .01 | 33 | 21 | 13 | 12 | 11 | 15 | 41 | 36 | 35 | 33 | 31 | 29 | 43 | 38 | 37 | 36 | 35 | 33 | 46 | 41 | 41 | 41 | 41 | 40 |
| | 500 | .02 | 38 | 27 | 23 | 19 | 17 | 18 | 48 | 41 | 39 | 37 | 35 | 32 | 50 | 43 | 41 | 40 | 39 | 36 | 53 | 46 | 45 | 45 | 45 | 43 |
| | 800 | .04 | 42 | 32 | 32 | 26 | 22 | 20 | 55 | 46 | 42 | 39 | 38 | 34 | 57 | 48 | 45 | 42 | 42 | 38 | 60 | 51 | 48 | 48 | 48 | 46 |
| | 1200 | .09 | 46 | 37 | 40 | 33 | 26 | 22 | 61 | 50 | 46 | 42 | 41 | 36 | 62 | 52 | 48 | 45 | 45 | 40 | 65 | 55 | 51 | 50 | 51 | 48 |
| | 1500 | .14 | 48 | 40 | 44 | 36 | 29 | 23 | 64 | 52 | 47 | 43 | 43 | 37 | 66 | 54 | 49 | 46 | 47 | 42 | 68 | 58 | 53 | 51 | 53 | 49 |
| 12 | 430 | .01 | 38 | 21 | 15 | 12 | 12 | 15 | 44 | 39 | 41 | 38 | 34 | 31 | 46 | 42 | 43 | 42 | 39 | 35 | 49 | 47 | 48 | 47 | 46 | 43 |
| | 800 | .03 | 42 | 29 | 29 | 21 | 18 | 18 | 52 | 43 | 44 | 41 | 37 | 34 | 54 | 46 | 47 | 45 | 41 | 39 | 57 | 52 | 51 | 50 | 49 | 46 |
| | 1200 | .05 | 44 | 34 | 38 | 27 | 23 | 20 | 57 | 46 | 46 | 43 | 39 | 36 | 59 | 49 | 49 | 47 | 43 | 41 | 62 | 55 | 54 | 52 | 51 | 48 |
| | 1800 | .09 | 47 | 39 | 47 | 33 | 27 | 21 | 63 | 49 | 48 | 46 | 41 | 38 | 64 | 52 | 51 | 49 | 45 | 43 | 67 | 58 | 56 | 54 | 52 | 50 |
| | 2300 | .12 | 49 | 42 | 52 | 36 | 29 | 22 | 66 | 51 | 50 | 47 | 42 | 40 | 67 | 54 | 52 | 50 | 46 | 44 | 70 | 59 | 57 | 56 | 54 | 52 |
| 14 | 600 | .01 | 39 | 24 | 15 | 10 | 10 | 14 | 43 | 38 | 39 | 39 | 36 | 32 | 45 | 40 | 41 | 42 | 40 | 36 | 48 | 45 | 45 | 47 | 46 | 43 |
| | 1000 | .02 | 42 | 30 | 26 | 19 | 17 | 18 | 50 | 42 | 42 | 42 | 38 | 34 | 51 | 45 | 45 | 45 | 42 | 39 | 55 | 49 | 49 | 50 | 49 | 45 |
| | 1600 | .04 | 46 | 36 | 37 | 27 | 23 | 21 | 56 | 46 | 46 | 45 | 40 | 37 | 57 | 49 | 48 | 48 | 44 | 41 | 61 | 53 | 52 | 52 | 51 | 48 |
| | 2400 | .08 | 49 | 42 | 46 | 33 | 28 | 23 | 61 | 50 | 48 | 47 | 42 | 38 | 63 | 52 | 50 | 50 | 46 | 42 | 66 | 57 | 54 | 55 | 52 | 49 |
| | 3100 | .13 | 51 | 45 | 52 | 37 | 31 | 25 | 64 | 52 | 50 | 48 | 43 | 39 | 66 | 55 | 52 | 51 | 47 | 44 | 69 | 59 | 56 | 56 | 54 | 50 |
| 16 | 780 | .00 | 14 | 21 | 12 | 10 | — | 14 | 43 | 42 | 43 | 40 | 34 | 29 | 45 | 45 | 45 | 43 | 37 | 33 | 48 | 49 | 50 | 48 | 43 | 39 |
| | 1600 | .02 | 34 | 33 | 31 | 23 | 20 | 19 | 52 | 47 | 47 | 44 | 38 | 33 | 54 | 50 | 49 | 47 | 42 | 37 | 57 | 54 | 54 | 52 | 48 | 44 |
| | 2400 | .04 | 45 | 40 | 42 | 30 | 26 | 22 | 57 | 50 | 49 | 46 | 41 | 36 | 59 | 52 | 51 | 49 | 44 | 40 | 62 | 57 | 56 | 54 | 50 | 46 |
| | 3600 | .08 | 56 | 46 | 52 | 37 | 32 | 25 | 63 | 52 | 51 | 48 | 43 | 38 | 64 | 55 | 54 | 51 | 47 | 42 | 68 | 60 | 58 | 56 | 53 | 49 |
| | 4200 | .10 | 60 | 49 | 56 | 40 | 34 | 26 | 65 | 53 | 52 | 49 | 44 | 39 | 66 | 56 | 54 | 52 | 48 | 43 | 70 | 61 | 59 | 57 | 54 | 50 |

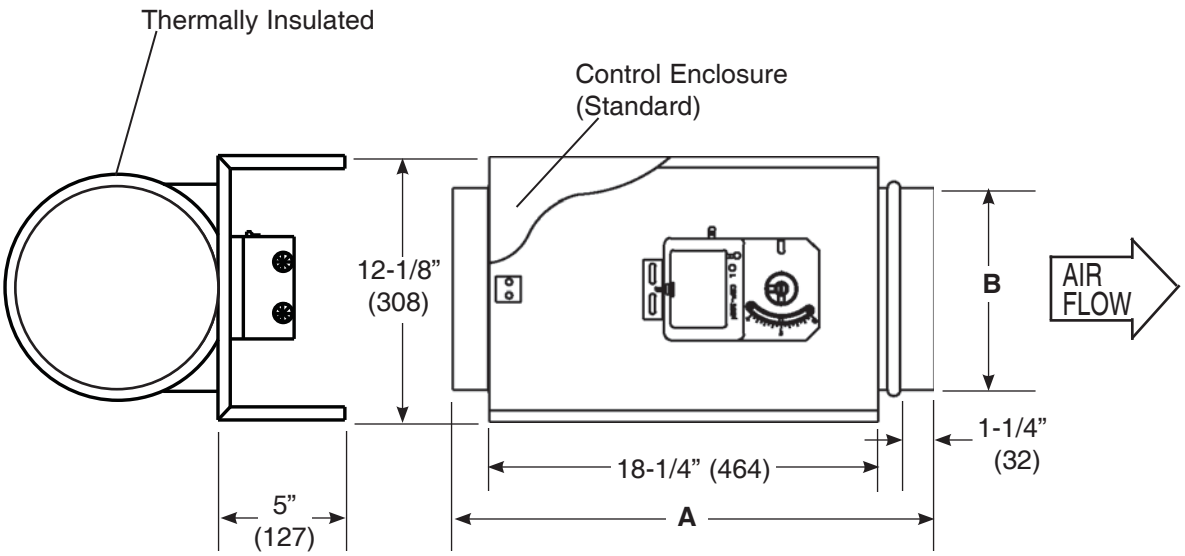
**NOTES:**
1. *Based on tests conducted in accordance with AHRI Standard 880-2008.*
2. *Δ $P_S$ static pressure difference from inlet to discharge.*
3. *Δ $P_S$ is the minimum pressure required to deliver CFM shown with primary damper in wide open position.*
4. *Dash (—) indicates db level less than 10.*

# MODEL NUMBERING SYSTEM | Model AVR




**NOTE**: *Hand of controls is determined by facing the averaging flow sensor (inlet of the unit) with the supply air hitting the back of your head.*

**RIGHT HAND UNIT SHOWN**
**LEFT HAND AVAILABLE**




| Dimensions Listed In Inches (Millimeters) | | |
|---|---|---|
| **Unit Size** | **A** | **B** |
| **05** | 19 (482) | 4-7/8 (124) |
| **06** | 19 (482) | 5-7/8 (149) |
| **07** | 19 (482) | 6-7/8 (175) |
| **08** | 19 (482) | 7-7/8 (200) |
| **10** | 19 (482) | 9-7/8 (251) |
| **12** | 21 (533) | 11-7/8 (302) |
| **14** | 22 (558) | 13-7/8 (352) |
| **16** | 23 (584) | 15-7/8 (403) |