



# "The ART of Noise Control"

For your local ArtUSA Representative

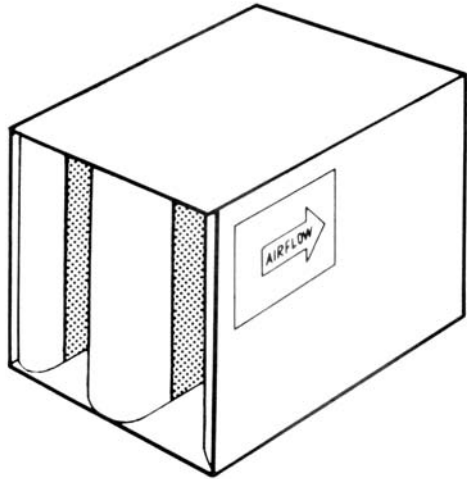
Call: 1-888-454-6973

Internet: [www.artusaindustries.us](http://www.artusaindustries.us)

## Sound Attenuator

NO. 780-95

ENGINEERING DATA SHEET



## MODEL SP-MD

RECTANGULAR

### NOMENCLATURE EXAMPLE:

| WIDTH     | HEIGHT    | LENGTH    | MODEL        |
|-----------|-----------|-----------|--------------|
| <b>24</b> | <b>24</b> | <b>36</b> | <b>SP-MD</b> |

ArtUSA Acoustics Model "MD" style sound attenuators are designed and engineered to eliminate acoustical fill entrainment by the airstream and reduce to a minimum the absorption of gases and particles by the acoustical fill. Reliability and performance are guaranteed since the basic configuration and materials are utilized. This non-erosive, non-pregnant silencer is excellent for hospital and clean room systems. Standard construction is galvanized steel. Mylar sheeting, acoustical fill and special dampening layer. Also available in stainless steel.

| MODEL NO. | OCTAVE BANDS          | (1)                                | (2) | (3) | (4) | (5)  | (6)  | (7)  | (8)  |
|-----------|-----------------------|------------------------------------|-----|-----|-----|------|------|------|------|
|           | CENTER FREQUENCY (Hz) | 63                                 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|           | FACE VELOCITY FPM     | DYNAMIC INSERTION LOSS IN DECIBELS |     |     |     |      |      |      |      |
| 3SP-MD    | -2000                 | 3                                  | 5   | 8   | 11  | 25   | 16   | 11   | 11   |
|           | -1000                 | 3                                  | 5   | 8   | 13  | 19   | 18   | 11   | 9    |
|           | 0                     | 4                                  | 4   | 7   | 12  | 18   | 18   | 13   | 11   |
|           | +1000                 | 3                                  | 4   | 8   | 11  | 17   | 17   | 14   | 12   |
|           | +2000                 | 3                                  | 3   | 6   | 9   | 16   | 17   | 13   | 10   |
| 5SP-MD    | -2000                 | 7                                  | 10  | 11  | 19  | 35   | 43   | 18   | 12   |
|           | -1000                 | 5                                  | 8   | 12  | 21  | 38   | 43   | 17   | 13   |
|           | 0                     | 9                                  | 8   | 13  | 19  | 32   | 34   | 18   | 13   |
|           | +1000                 | 6                                  | 8   | 12  | 18  | 29   | 34   | 19   | 15   |
|           | +2000                 | 7                                  | 8   | 8   | 15  | 26   | 36   | 20   | 15   |
| 7SP-MD    | -2000                 | 12                                 | 14  | 20  | 34  | 42   | 46   | 22   | 13   |
|           | -1000                 | 10                                 | 13  | 18  | 31  | 45   | 50   | 23   | 14   |
|           | 0                     | 8                                  | 12  | 18  | 28  | 43   | 48   | 22   | 16   |
|           | +1000                 | 8                                  | 10  | 15  | 27  | 41   | 46   | 26   | 20   |
|           | +2000                 | 7                                  | 10  | 13  | 23  | 37   | 43   | 31   | 21   |
| 10SP-MD   | -2000                 | 12                                 | 18  | 22  | 28  | 39   | 47   | 25   | 16   |
|           | -1000                 | 11                                 | 16  | 21  | 30  | 42   | 48   | 28   | 18   |
|           | 0                     | 10                                 | 17  | 21  | 29  | 44   | 49   | 32   | 26   |
|           | +1000                 | 10                                 | 16  | 20  | 29  | 44   | 49   | 33   | 31   |
|           | +2000                 | 9                                  | 15  | 19  | 27  | 40   | 44   | 35   | 30   |

THIS TABLE CONTAINS BOTH FORWARD (+) AND BACKWARD (-) FLOW ACOUSTIC AND AERODYNAMIC RATINGS BASED ON TEST RESULTS MEASURED IN ACCORDANCE WITH ASTM E477. COPIES OF THESE TEST REPORTS CAN BE FURNISHED UPON REQUEST.



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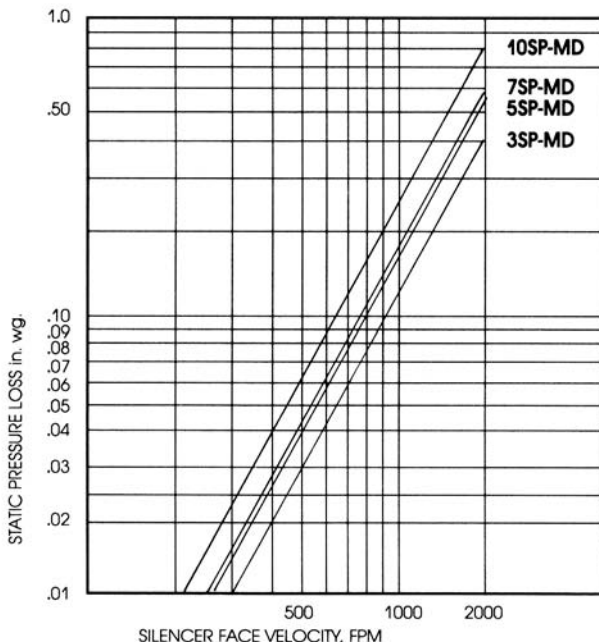
## Sound Attenuator

RECTANGULAR  
MODEL SP-MD

ENGINEERING DATA SHEET

AIR FLOW RATING FOR THE 12 X 12 SIZE, SHADED, REPRESENTS BOTH CFM AND FACE VELOCITY IN FPM.  
USE THIS TO GET THE RATING FOR MULTIPLE MODULE SILENCERS.

| MODEL         | 3SP-MD       | 0.05            | 0.10  | 0.16  | 0.21  | 0.31  | 0.41  | 0.51  | 0.60  | 0.75  | 0.89  | 1.00  | 1.08  |
|---------------|--------------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|               | 5SP-MD       | 0.06            | 0.11  | 0.18  | 0.25  | 0.38  | 0.51  | 0.64  | 0.75  | 0.94  | 1.12  | 1.26  | 1.36  |
|               | 7SP-MD       | 0.07            | 0.12  | 0.18  | 0.26  | 0.39  | 0.53  | 0.66  | 0.78  | 0.97  | 1.16  | 1.30  | 1.40  |
|               | 10SP-MD      | 0.09            | 0.17  | 0.27  | 0.39  | 0.58  | 0.77  | 0.96  | 1.14  | 1.42  | 1.70  | 1.90  | 2.06  |
| SIZE<br>W x H | FACE<br>AREA | AIR FLOW IN CFM |       |       |       |       |       |       |       |       |       |       |       |
| 6 x 12        | 0.50         | 345             | 477   | 600   | 713   | 875   | 1012  | 1130  | 1230  | 1371  | 1500  | 1588  | 1650  |
| 6 x 24        | 1.00         | 707             | 953   | 1200  | 1425  | 1750  | 2023  | 2260  | 2459  | 2742  | 2999  | 3175  | 3300  |
| 6 x 36        | 1.50         | 1061            | 1430  | 1800  | 2183  | 2625  | 3035  | 3390  | 3689  | 4113  | 4499  | 4763  | 4950  |
| 12 x 12       | 1.00         | 707             | 953   | 1200  | 1425  | 1750  | 2023  | 2260  | 2459  | 2742  | 2999  | 3175  | 3300  |
| 12 x 24       | 2.00         | 1414            | 1906  | 2400  | 2850  | 3500  | 4046  | 4520  | 4918  | 5484  | 5998  | 6350  | 6600  |
| 12 x 36       | 3.00         | 2121            | 2859  | 3600  | 4275  | 5250  | 6069  | 6780  | 7377  | 8226  | 8997  | 9525  | 9900  |
| 18 x 12       | 1.50         | 1061            | 1430  | 1800  | 2138  | 2625  | 3035  | 3390  | 3689  | 4113  | 4499  | 4763  | 4950  |
| 18 x 18       | 2.25         | 1591            | 2144  | 2700  | 3206  | 3938  | 4552  | 5085  | 5533  | 6170  | 6748  | 7144  | 7425  |
| 18 x 30       | 3.75         | 2651            | 3574  | 4500  | 5344  | 6563  | 7586  | 8475  | 9221  | 10283 | 11246 | 11906 | 12375 |
| 18 x 36       | 4.50         | 3182            | 4289  | 5400  | 6413  | 7875  | 9104  | 10170 | 11066 | 12339 | 13496 | 14288 | 14850 |
| 18 x 48       | 6.00         | 4242            | 5718  | 7200  | 8550  | 10500 | 12138 | 13560 | 14754 | 16452 | 17994 | 19050 | 19800 |
| 24 x 24       | 4.00         | 2828            | 3812  | 4800  | 5700  | 7000  | 8092  | 9040  | 9836  | 10968 | 11996 | 12700 | 13200 |
| 24 x 36       | 6.00         | 4242            | 5718  | 7200  | 8550  | 10500 | 12138 | 13560 | 14754 | 16452 | 17994 | 19050 | 19800 |
| 24 x 48       | 8.00         | 5656            | 7624  | 9600  | 11400 | 14000 | 16184 | 18080 | 19672 | 21963 | 23992 | 25400 | 26400 |
| 30 x 24       | 5.00         | 3535            | 4765  | 6000  | 7125  | 8750  | 10115 | 11300 | 12295 | 13710 | 14995 | 15875 | 16500 |
| 30 x 36       | 7.50         | 5303            | 7148  | 9000  | 10638 | 13125 | 15173 | 16950 | 18443 | 20565 | 22493 | 23813 | 24750 |
| 30 x 48       | 10.00        | 7070            | 9530  | 12000 | 14250 | 17500 | 20230 | 22600 | 24590 | 27420 | 29990 | 31750 | 33000 |
| 36 x 36       | 9.00         | 6363            | 8577  | 10800 | 12825 | 15750 | 18207 | 20340 | 22131 | 24678 | 26991 | 28575 | 29700 |
| 36 x 42       | 10.50        | 7424            | 10007 | 12600 | 14963 | 18375 | 21242 | 23730 | 25820 | 28791 | 31490 | 33338 | 34650 |
| 36 x 48       | 12.00        | 8484            | 11436 | 14400 | 17100 | 21000 | 24276 | 27120 | 29508 | 32904 | 35988 | 38100 | 39600 |



Air flow ratings shown include static regain. Therefore if silencers are installed immediately before or after elbows, transitions, at the intake or discharge of the system, or without duct, allowance to compensate for such conditions must be included when calculating the operating pressure loss thru the silencer. Failure to make allowance for these conditions can add several velocity heads to the pressure loss of the system. All acoustic and aerodynamic performance obtained on 24" x 24" cross section production units.

### SELF-GENERATED SOUND POWER RATINGS (PWL) dB re 10<sup>-12</sup> WATTS

| OCTAVE BAND |               | 1  | 2   | 3   | 4   | 5    | 6    | 7    | 8    |
|-------------|---------------|----|-----|-----|-----|------|------|------|------|
| HZ          |               | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| MODEL       | FACE VELOCITY |    |     |     |     |      |      |      |      |
| 3SP-MD      | +2000         | 62 | 57  | 52  | 48  | 47   | 51   | 51   | 48   |
| 5SP-MD      | +1000         | 51 | 42  | 34  | 31  | 33   | 28   | 24   | 29   |
| 7SP-MD      | -1000         | 53 | 46  | 44  | 47  | 51   | 52   | 43   | 34   |
| 10SP-MD     | -2000         | 63 | 57  | 55  | 56  | 58   | 64   | 66   | 59   |

### SELF-GENERATED SOUND RATINGS/FACE AREA ADJUSTMENT FACTORS

| FACE AREA                 | .50 | 1  | 2  | 4 | 8  | 10 | 32 | 64  | 128 |
|---------------------------|-----|----|----|---|----|----|----|-----|-----|
| PWL ADJUSTMENT FACTOR, dB | -9  | -6 | -3 | 0 | +3 | +6 | +9 | +12 | +15 |