

Packless Silencer for Round Ductwork

Model ARPL

Model	Flow	Velocity fpm	Press Drop	Dynamic Insertion Loss (dB) Octave Band/Center Frequency (Hz)							
				1 63	2 125	3 250	4 500	5 1K	6 2K	7 4K	8 8K
ARPL-8	Reverse	-2000	0.04	14	16	25	16	8	7	6	4
	Flow	-1000	0.01	14	15	24	17	8	6	6	4
		0		14	15	24	17	9	6	6	4
	Forward	1000	0.01	14	15	24	18	8	6	6	3
	Flow	2000	0.04	13	15	24	18	8	6	4	2
ARPL-12	Reverse	-2000	0.04	7	9	16	19	7	7	5	4
	Flow	-1000	0.01	7	8	15	19	8	6	5	4
		0		7	8	15	19	8	6	5	4
	Forward	1000	0.01	7	8	15	20	7	6	4	3
	Flow	2000	0.04	6	8	15	20	7	6	4	2
ARPL-14	Reverse	-2000	0.04	7	9	16	19	7	7	5	4
	Flow	-1000	0.01	7	8	16	19	8	6	5	4
		0		6	8	15	19	8	6	5	4
	Forward	1000	0.01	6	7	15	20	7	6	4	3
	Flow	2000	0.04	6	7	15	20	7	6	4	2
ARPL-16	Reverse	-2000	0.04	6	9	17	18	7	7	6	6
	Flow	-1000	0.01	5	8	17	18	8	8	6	5
		0		5	7	16	19	9	8	6	5
	Forward	1000	0.01	5	7	16	19	8	7	5	4
	Flow	2000	0.04	5	6	16	20	8	7	4	3

Forward Flow - characteristic of supply or discharge fan systems.
Reverse Flow - typical of return or intake fan systems.

Pressure Drop Calculation for Specific Velocity

$$\text{Actual Velocity (fpm)} = \text{CFM} \times 144 \text{ " } [3.14 \times r^2 \text{ (in.)}] \quad r = \text{radius}$$

$$\text{Pressure Drop} = \left(\frac{\text{Actual Velocity}}{2000} \right)^2 \times \text{Catalog Pressure Drop @ 2000 fpm}$$

Standard Construction

22 gauge galvanized casings
24 gauge perforated baffles
No acoustic fill or absorptive material
Casing: 8" & 12" = 21" x 21"
16" = 30" x 30"
Length = 36"

Optional Features

Stainless Steel Construction

Computer program available that provides attenuator performance at actual job conditions.

Tubular Attenuators

Self-noise Power Levels

Self-Noise Power Levels, dB re 10 ⁻¹² Watts Octave Band/Center Frequency (Hz)									
Model	Velocity fpm	1 63	2 125	3 250	4 500	5 1K	6 2K	7 4K	8 8K
ARA	2000	59	57	51	47	47	45	42	33
	4000	69	68	70	71	64	66	61	57
ARB	2000	62	59	51	47	47	44	39	36
	4000	68	67	59	55	57	55	49	52
ADRA	2000	57	55	49	44	42	41	39	34
	4000	72	69	67	69	57	61	64	60
ADRB	2000	55	53	46	43	41	40	37	32
	4000	69	65	64	65	52	57	59	56
ADRC	2000	52	49	44	41	40	38	35	30
	4000	65	62	62	63	49	51	53	51
ALRA	2000	57	55	49	44	42	41	39	34
	4000	72	69	67	69	57	61	64	60
ALRB	2000	55	53	46	43	41	40	37	32
	4000	69	65	64	65	52	57	59	56
ALRC	2000	52	49	44	41	40	38	35	30
	4000	65	62	62	63	49	51	53	51
ARPS	2000	56	52	51	52	55	60	59	49
	4000	59	61	60	58	60	64	68	66
ARPL	2000	45	44	40	39	41	36	26	20
	4000	57	57	55	54	55	58	57	48
AREPL	2000	56	52	49	43	50	52	49	35
	4000	68	67	63	60	62	65	68	64

Area Correction Factors - Listed self-noise power levels are for silencers with a face area of 3.1 square feet. For silencers with different face areas, the following values must be added to those in the table. Area correction values do not apply to models RPS, RPL, or REPL.

Face area (sq. ft.)	0.75	1.5	2.5	3.1	4	6	8	15
PWL Correction Factors, dB	-6	-3	-1	0	1	3	4	7