

noishield/slimshield architectural noise control ventilation

ventilation louvers
decorative facades
equipment screens
weather shields
noise barriers
silencers
housings

LOUVERS



THE STANDARD OF SILENCE

INDUSTRIAL ACOUSTICS COMPANY

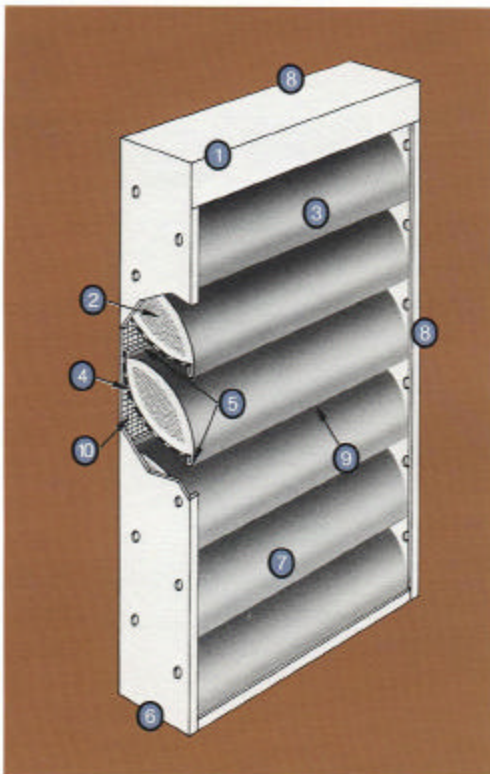
iac acoustical noishield

LOUVERS control noise...permit airflow



Noishield® Louver cooling tower inlet screen/noise barrier. Note how "clean" lines, color, and mitered corners provide attractive, uncluttered appearance architecturally compatible with the surroundings.

certified acoustic and aerodynamic performance with an unmatched array of important features:



- 1 RUGGED ALL-STEEL GALVANIZED CONSTRUCTION. STAINLESS STEEL, ALUMINUM -OTHER MATERIALS ALSO AVAILABLE.
- 2 INERT, VERMINPROOF, WEATHER-RATED NONCOMBUSTIBLE ACOUSTIC FILL.
- 3 AIRFOIL SHAPED SPLITTER-BLADE FOR MAXIMUM NOISE REDUCTION WITH MINIMUM PRESSURE DROP.
- 4 PERFORATED SPLITTER UNDERSIDE FOR SOUND ABSORPTION.
- 5 WEATHER STOP INHIBITS RAIN/SNOW ENTRY.
- 6 ONLY 12 IN. (305 mm) DEEP.
- 7 AVAILABLE IN A VARIETY OF DURABLE, ATTRACTIVE FINISHES.
- 8 MODULAR SIZES (SEE PAGE 5) ENABLE ASSEMBLY OF RECTILINEAR LOUVER "WALLS" OF ALMOST ANY SIZE.
- 9 SPLITTER-BLADE ORIENTATION BLOCKS HORIZONTAL LINE OF SIGHT, THEREBY ENHANCING BOTH AESTHETICS AND ACOUSTIC PERFORMANCE.
- 10 1/2 IN. (13 mm) DETACHABLE GALVANIZED BIRD SCREEN FURNISHED AS STANDARD ON BACK SIDE OF LOUVER.

..available for any application...in any size

The IAC Noishield® louver is a multi-purpose louver used to permit the flow of air while shielding the environment from noise. Noishield louvers are available in two models and standard modular sizes to meet a wide range of performance requirements where space is limited and architectural standards of appearance must be met.

typical uses include

- FRESH AIR INTAKES FOR VENTILATION SYSTEMS
- MECHANICAL EQUIPMENT SCREENS OR PENTHOUSES
- CORRIDOR RETURN AIR INTAKES
- NOISE BARRIERS
- PROCESS AIR INTAKES
- CROSS TALK SILENCERS
- COOLING TOWER INLET SILENCERS OR SCREENS

...in a variety of colors and finishes

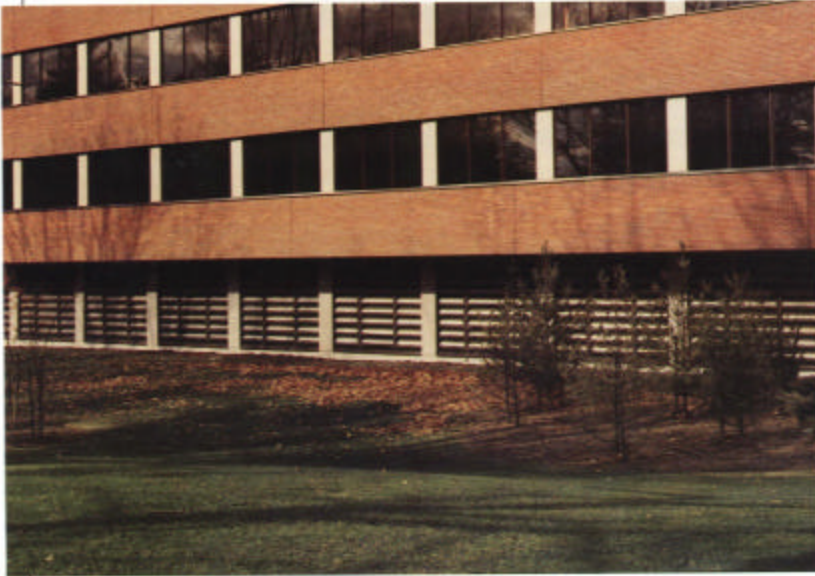
Noishield louvers can be provided in primed or unprimed galvanized steel or mill finish aluminum for field painting. In addition, they can be furnished in a range of architectural colors and gloss levels in any of the following finishes. IAC engineers can provide you with details on any of these options.

- AUTOMOTIVE QUALITY PHENOLIC PAINT
- ANODIZED ALUMINUM
- VINYL COATED STEEL
- STAINLESS STEEL IN A RANGE OF SURFACE FINISHES
- FLUOROPOLYMER, VINYL, POLYURETHANE AND OTHER PAINTS WITH SUPERIOR WEATHERABILITY

Noishield louvers provide decorative protection against weather and forced entry for air intakes and discharges.

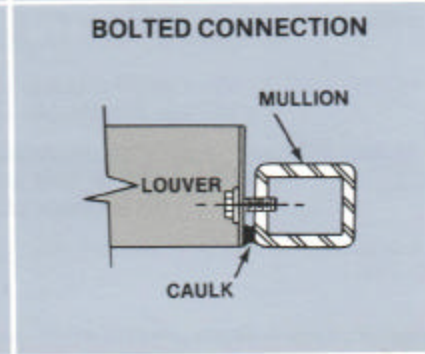
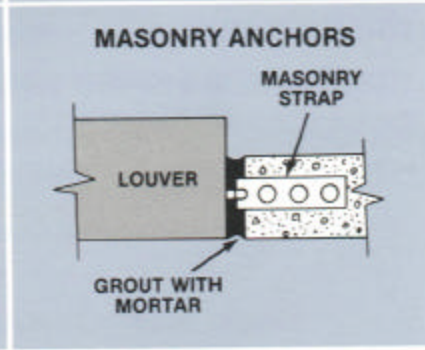
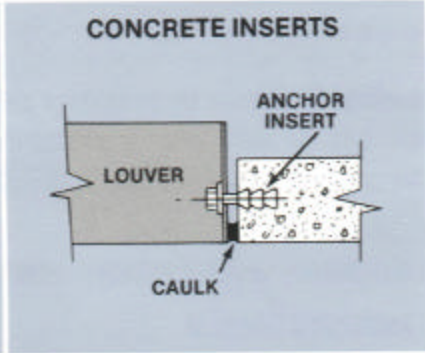
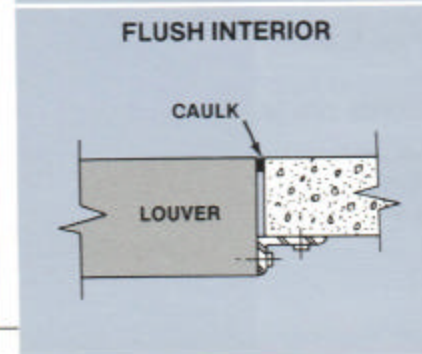
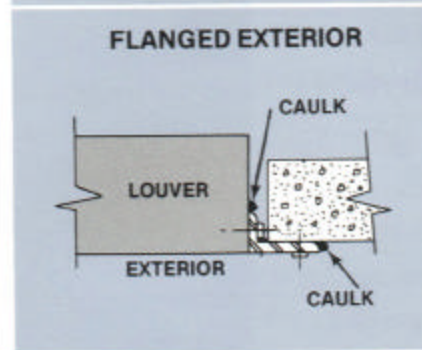
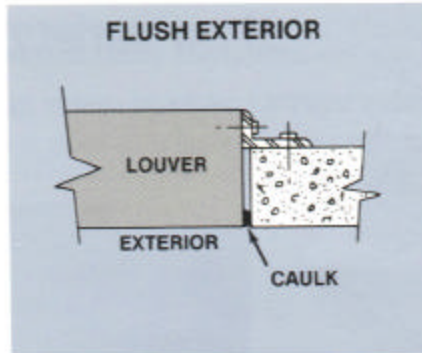
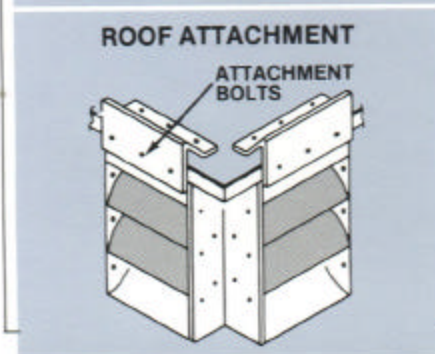
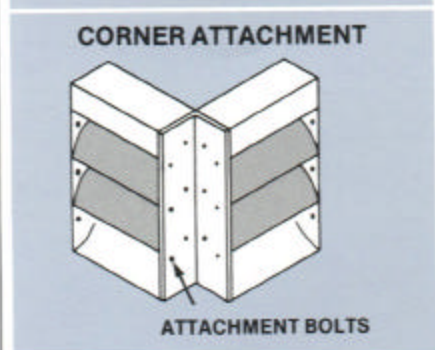
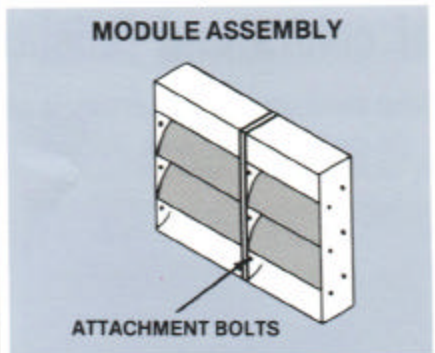


noishield louvers can be installed flush-mounted to fit into masonry or other building structures or as free-standing barriers or screens



field assembly

methods of installation



How To Specify Noishield Louvers

Furnish and install Noishield Louver(s) as manufactured by Industrial Acoustics Company. Outer casings shall be of 16 gauge (1.613 mm) galvanized steel. Louver baffles shall be of airfoil configuration and be made of 22 gauge (0.8534 mm) galvanized steel. They shall be packed with inert, vermin and moisture proof mineral fiber, and provide the acoustical performance as indicated in Table II. Louvers shall have _____ finish with _____ color.

Static pressure drop of louvers shall not exceed _____ i.w.g. (_____ Pa) at a face velocity of _____ fpm (_____ m/s) for Model R and _____ fpm (_____ m/s) for Model LP. *Fill in appropriate values.* Manufacturer shall submit certified data from one laboratory substantiating both the specified acoustic and aerodynamic performance.

Simplified Selection Procedure

Louvers are rated in the IAC aeroacoustic laboratory in accordance with ASTM Standard E90-75 and other applicable test standards.

To analyze specific louver applications, ask for IAC SNAP II (Bulletin 1.0503). This Systemic Noise Analysis Procedure enables you to evaluate the effects of the acoustical environment in which the source is located and to determine louver model and size selection.

Module Sizes

Noishield Louver Model	Model Width in. (mm)	Module Height in. (mm)
Model R —Optimum acoustical performance with normal pressure drop	24, 36, or 48 (610, 914 or 1219)	12 to 144 in 12 in. increments (305 to 3658 in 305 mm increments)
Model LP —Normal acoustical performance with minimum pressure drop	24, 36, or 48 (610, 914 or 1219)	14 to 140 in 14 in. increments (356 to 3556 in 356 mm increments)

NOTE: Width and height dimensions are nominal. Final assemblies will be 1/4 in. (6.4mm) less than nominal. Noishield Louver average weight — 10 lb/ft² (48.8 kg/m²) of face area.

certified performance data

Noishield Louver Model	Static Pressure Drop, i.w.g. (Pa)											
	0.05 (12.4)	0.10 (24.9)	0.15 (37.4)	0.20 (49.8)	0.25 (62.3)	0.30 (74.7)	0.40 (99.6)	0.50 (124.5)	0.60 (149.5)	0.75 (186.8)	1.0 (249.1)	1.25 (311.4)
Model R	Face Velocity, fpm (m/s)											
	215 (1.09)	305 (1.55)	375 (1.91)	430 (2.18)	480 (2.44)	525 (2.67)	610 (3.10)	675 (3.43)	745 (3.78)	830 (4.22)	960 (4.88)	1070 (5.44)
Model LP	270 (1.37)	380 (1.93)	465 (2.36)	540 (2.74)	600 (3.05)	660 (3.35)	760 (3.86)	850 (4.32)	925 (4.70)	1040 (5.28)	1200 (6.10)	1340 (6.81)

Table I
Aerodynamic
Performance

Table II—Transmission Loss (T.L.) — Defined as the ratio, in decibels, of acoustic energy transmitted through the louver to that incident upon it.

Octave Band Center Frequency, Hz.	1	2	3	4	5	6	7	8
	63	125	250	500	1K	2K	4K	8K
Model R	5	7	11	12	13	14	12	9
Model LP	4	5	8	9	12	9	7	6

Table III—Noise Reduction (N.R.) — The free-field noise reduction of a louver is the difference, in decibels, between the sound pressure level on the noise source side of the louver and that measured outdoors on the side of louver away from the noise source.

Octave Band Center Frequency, Hz.	1	2	3	4	5	6	7	8
	63	125	250	500	1K	2K	4K	8K
Model R	11	13	17	18	19	20	18	15
Model LP	10	11	14	15	18	15	13	12

Distance from Noishield Louver		Octave Band Center Frequency, Hz							
		1	2	3	4	5	6	7	8
ft	m	63	125	250	500	1K	2K	4K	8K
10	3.05	23	25	29	30	31	32	30	27
50	15.24	37	39	43	44	45	46	44	41
100	30.48	43	45	49	50	51	52	50	47
200	60.96	49	51	55	56	57	58	56	53
500	152.40	57	59	63	64	65	66	64	61
1000	304.80	63	65	69	70	71	72	70	67

*For MODEL LP Attenuation: SUBTRACT the following from above decibel values in each octave band.

DEDUCT.....	1	2	3	3	1	5	5	3
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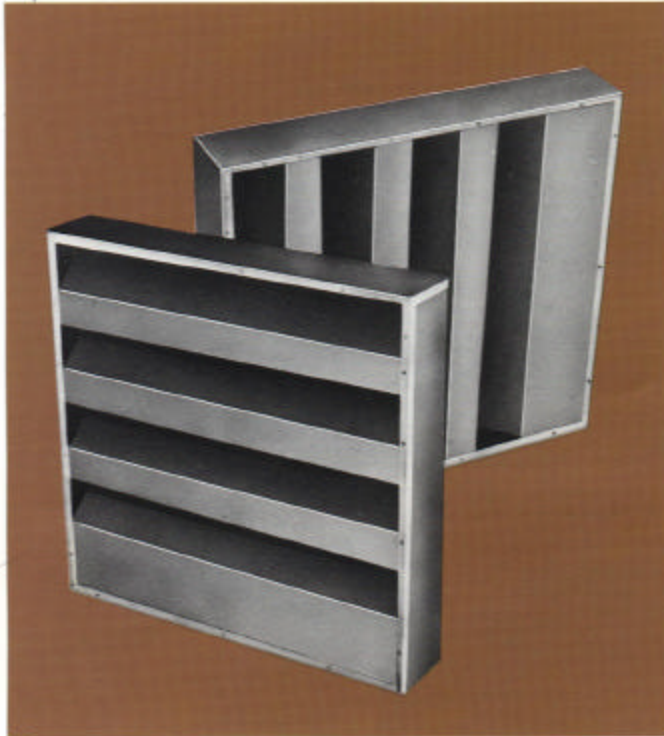
Table IV
Attenuation

(Source PWL re: 10-12 Watts)

Combines the Noishield Louver's transmission with the reduction of sound energy as a function of distance from the noise source. (Type R attenuation tabulated; correct for Type LP as noted). NOTE: Additional attenuation can be realized from room or plenum absorption characteristics. For detailed method of calculation, refer to IAC Bulletin 1.0503.

Slimshield QUIET-VENT® LOUVER

...a compact silencer/louver that's only 4 or 6 inches (102 or 152mm) deep



features

- EASY TO INSTALL
- LOW PRESSURE DROP
- COMBINATION SILENCER AND LOUVER
- RUGGED GALVANIZED STEEL CONSTRUCTION
- STAINLESS STEEL AND OTHER MATERIALS AVAILABLE
- GOOD NOISE REDUCTION CHARACTERISTICS IN ALL OCTAVE BANDS
— 9 dB REDUCTION IN SPEECH FREQUENCIES
- MODULAR SIZES CAN BE READILY ASSEMBLED INTO RECTILINEAR LOUVER "BANKS" OF VIRTUALLY ANY SIZE
- CHOICE OF SEVERAL DURABLE FINISHES IN A VARIETY OF ATTRACTIVE COLORS (see page 3)
- IAC's AEROACOUSTIC LABORATORY WILL DEVELOP SLIMSHIELD TO YOUR SPECIFIC REQUIREMENTS

typical uses

AIR CONDITIONING SYSTEMS AND EQUIPMENT

- | | | |
|---|---|--|
| <input type="checkbox"/> RETURN AIR AND SUPPLY SYSTEMS | <input type="checkbox"/> VENTILATION OPENINGS | <input type="checkbox"/> FANS |
| <input type="checkbox"/> CROSS-TALK SILENCERS | <input type="checkbox"/> COOLING TOWERS | <input type="checkbox"/> HOSPITALS |
| <input type="checkbox"/> KITCHEN AND BATHROOM VENT SHAFTS | <input type="checkbox"/> LIBRARIES | <input type="checkbox"/> HOTELS AND MOTELS |
| <input type="checkbox"/> RECORDING AND BROADCASTING STUDIOS | <input type="checkbox"/> COMPUTERS | <input type="checkbox"/> BOILER ROOMS |
| <input type="checkbox"/> AIR CONDITIONING AND REFRIGERATION EQUIPMENT | <input type="checkbox"/> EQUIPMENT ROOMS | <input type="checkbox"/> CONFERENCE ROOMS |

INDUSTRIAL, TRANSPORTATION AND CONSTRUCTION EQUIPMENT

- | | | |
|--|--|--|
| <input type="checkbox"/> DIESEL GENERATOR SETS | <input type="checkbox"/> NOISE BARRIERS | <input type="checkbox"/> TRACTORS |
| <input type="checkbox"/> MARINE OR PROPULSION FANS | <input type="checkbox"/> ELECTRIC MOTORS | <input type="checkbox"/> AIR COOLERS |
| <input type="checkbox"/> MACHINERY ENCLOSURES | <input type="checkbox"/> TRUCKS AND BUSES | <input type="checkbox"/> PUMPS |
| <input type="checkbox"/> GAS TURBINES | <input type="checkbox"/> LOCOMOTIVES | <input type="checkbox"/> BULLDOZERS |
| <input type="checkbox"/> OIL COOLERS | <input type="checkbox"/> TRANSFORMER BARRIERS | <input type="checkbox"/> AIR COMPRESSORS |
| <input type="checkbox"/> DIESEL POWERED VEHICLES AND EQUIPMENT | <input type="checkbox"/> INDUSTRIAL COOLING TOWERS | |

How to Specify Slimshield Quiet-Vent Louvers

Furnish and install Slimshield Louvers (s) as manufactured by Industrial Acoustics Company.

Outer casings and splitter blades shall be of 22 gauge (0.8534 mm) galvanized steel, louvers shall be packed with inert, vermin and moisture proof mineral fiber and provide the acoustical performance as indicated in Table VI. Louvers shall have _____ finish with _____ color.

Static pressure drop shall not exceed _____ i.w.g. (_____ Pa) at a face velocity of _____ fpm (_____ m/s). (Fill in appropriate values). Manufacturer shall submit data from one laboratory substantiating both the specified acoustic and aerodynamic performance.

Simplified Selection Procedure

Ask for SNAP II (IAC Bulletin 1.0503) for Systemic Noise Analysis Procedure which can be used in sizing and selecting slimshield louvers.

Note: For applications with high face velocities consult factory to check that Slimshield Louver self-noise is not excessive.

Standard Slimshield Module Sizes

Width in. (mm)	4 in. (102mm) Deep Height		6 in. (152mm) Deep Height	
	in.	mm	in.	mm
12 (305)	16	406	12	305
24 (610)	24	610	24	610
36 (914)	32	813	36	914
48 (1219)	40	1016	48	1219
	48	1219		

NOTES: 1. Larger module sizes available on request. 2. Consult factory for structural requirements of module banks. 3. 4 in. (102mm) thick Slimshield Louver weight – 4 lb/ft² (19.5 kg/m²) of face area. 4. 6 in. (152mm) thick Slimshield Louver weight – 6 lb/ft² (29.3 kg/m²) of face area.

certified performance data

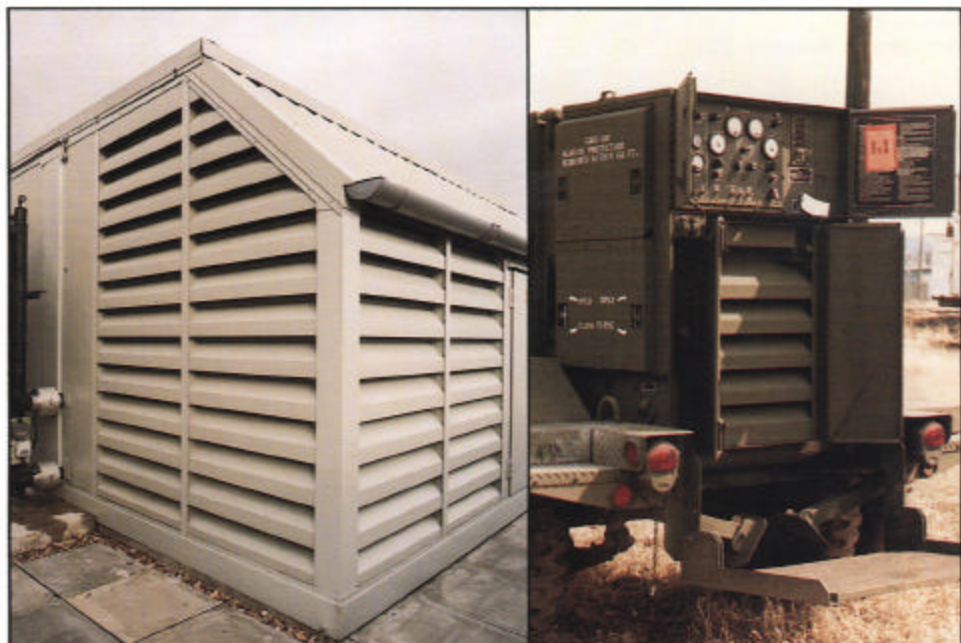
Static Pressure Drop i.w.g. (Pa)	0.05 (12.4)	0.10 (24.9)	0.15 (37.4)	0.20 (49.8)	0.25 (62.3)	0.30 (74.7)	0.40 (99.6)	0.50 (124.5)	0.60 (149.5)	0.75 (186.8)	1.0 (249.1)
	Face Velocity, fpm (m/s)										
4 in. (102mm) Deep	202 (1.03)	285 (1.45)	350 (1.78)	404 (2.05)	452 (2.30)	495 (2.51)	571 (2.90)	639 (3.25)	700 (3.56)	785 (3.99)	904 (4.59)
6 in. (152mm) Deep	115 (0.59)	160 (0.81)	197 (1.00)	228 (1.16)	255 (1.30)	280 (1.43)	322 (1.64)	360 (1.84)	395 (2.01)	440 (2.24)	510 (2.60)

TABLE V
Aerodynamic
Performance

	Octave Band Center Frequency, Hz	1	2	3	4	5	6	7	8
			63	125	250	500	1K	2K	4K
4 in. (102mm) Deep	Transmission Loss, dB	5	4	5	6	9	13	14	13
	Free Field Noise Reduction, dB	11	10	11	12	15	19	20	19
6 in. (152mm) Deep	Transmission Loss, dB	6	6	8	10	14	18	18	15
	Free Field Noise Reduction, dB	12	12	14	17	20	24	25	23

TABLE VI
Acoustic
Performance

Slimshield Quiet-Vent® Louvers can be installed in walls and doors for air transfer or cross-talk silencers. Also, in plenum or machinery enclosures, or as an integral intake silencer and weather louver on mechanical equipment.



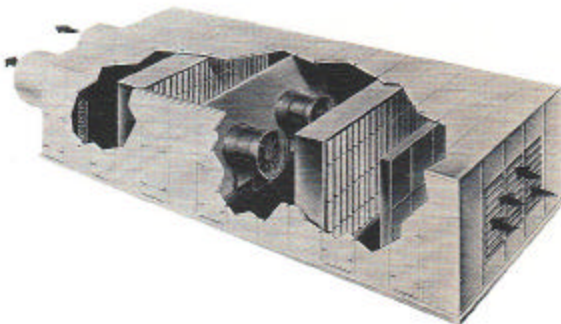
IAC HVAC Noise Control Products & Systems



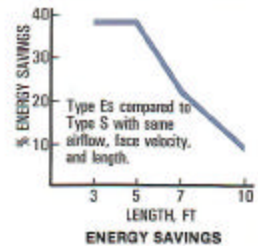
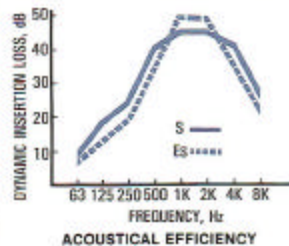
Special Air Handling Systems — Custom engineered 24,000 cfm air-handling system including silencers, filters, coils, vaneaxial fan and acoustic plenum under test in IAC's 10,000 ft³ reverberation room. System is designed to meet consultant's NC 35 criterion for each floor of a fifty-story building. The reverberation room is part of IAC's Aero-Acoustic Laboratory which includes closed loop wind tunnel for establishing DIL, self-noise, and pressure drop ratings of full-scale silencers and other HVAC system components. **Bulletin 1.0004**

SNAP Form — IAC's Systemic Noise Analysis Procedure for determining acoustical requirements of HVAC systems. **Bulletin 1.0110**

SNAP II Form — IAC's Systemic Noise Analysis Procedure for determining acoustical requirements and applications involving Noishield® Acoustic Louvers. **Bulletin 1.0503**



Quiet-Flow® Fan Plenums of acoustically designed panels isolate fan noise from adjacent areas and control fan noise in the air stream. In addition they provide excellent thermal insulation. **Bulletin 1.0201**



Type Es 'Energy Saver' Silencer — For many years, IAC Type S Quiet-Duct Silencers have been the industry standard for maximum noise reduction with minimum length. The Es 'Energy Saver' Rectangular Silencers provide the same high level of acoustic performance combined with a marked decrease in energy consumption. **Bulletin SDS 12**

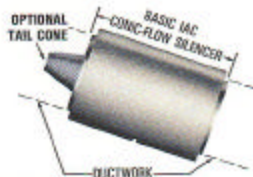
Quiet-Duct® Silencers are engineered units with proven acoustical efficiency in attenuating fan noise. Easily fitted into existing systems. Sizes for practically every application. **Bulletin 1.0301**



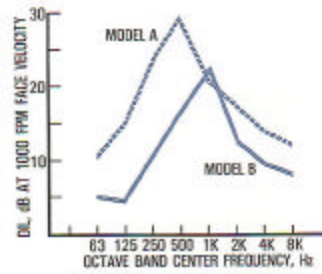
Conic-Flow® Silencers control noise of axial-flow-fans in 1/10th the duct length required for lined duct. Allow efficient air flow in both high-pressure and low-velocity systems. 18 standard sizes. **Bulletin 1.0301**

Energy Saver Conic-Flow® Silencer Tail Cones —

For any size IAC Conic-Flow Silencer. Decreases silencer pressure drop and cuts silencer energy consumption operating costs by as much as 33% with no change in acoustic characteristics and no increase in duct length requirements. **Bulletin SDS 14**



Ultra-Pals™ Packless Silencers —



IAC's all-steel reactive silencers use no acoustic fill of any kind. Readily cleaned with steam, hot water, chemical solutions and/or vacuumed. Ideal for electronic equipment assembly, pharmaceutical, food and dairy manufacturing, clean room or process applications, hospital operating rooms, and research facilities. **Bulletins SDS 21,24,25 and 28**

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INDUSTRIAL ACOUSTICS COMPANY

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TECHNICAL REPRESENTATION IN PRINCIPAL CITIES THROUGHOUT THE WORLD

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