ACOUSTIC PRODUCT—OS-ALD

Improving your environment

OS-ALD ACOUSTIC LOUVERS

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OPTIMA Acoustic Louvers Overview

OPTIMA Acoustic Louvers are designed to provide optimal acoustic performance (noise reduction) with minimal airflow restrictions. OS-ALD acoustic Louvers are typically manufactured from galvanized steel sheet or aluminum to suit any opening size. Where required, the acoustic Louvers can be assembled in a modular fashion.

OPTIMA Louvers can be supplied in multiple finishes including plain galvanized, powder coated or painted.

OPTIMA Acoustic Louvers can be also manufactured as a hinged or sliding door. The doors are fitted to stiffened galvanized iron frames and fitted with hardware as required for the individual applications.

The Louvers are tested to International Standards . As with all OPTIMA products, we employ our own installation staff familiar with the installation methods required to ensure acoustic integrity. Where required or preferred we can easily assemble a complete turnkey solution.

OS-ALD is available in two models, single (type 1) and double (type 2). The aerodynamically designed splitters are filled with the sound absorber material. The louver can be treated with anti-corrosion finish if necessary.

Typical Acoustic Louver Applications

- Plant room ventilation
- Relief air from factories and workshops
- Ventilation to acoustic equipment enclosures
- Air conditioning installations and cooling towers
- Power generation equipment
- Outdoor air ventilation systems
- Refrigeration plant

Benefits of an Acoustic Louver

- Guaranteed performance - tested to International Standards
- Choice of finishes & built materials
- Cost effective with long life and low maintenance
- Simple installation

Accessories

- Flanges
- Bird Screen
- Powder-Coat Finish
- Structural Design of Large Louver Banks

Optima International LLC PO Box 115858
Deira, Dubai, UAE
Phone: +971 42949607
Fax: +971 42949608
Web: www.optimain.ae—E-Mail: sales@optimain.ae

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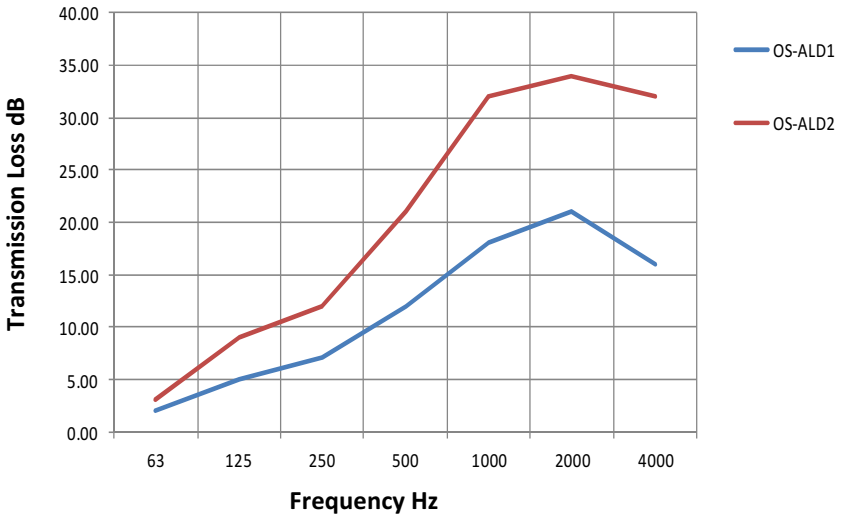
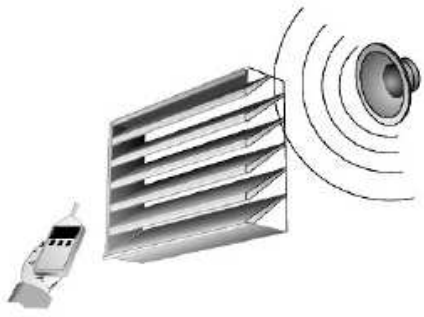
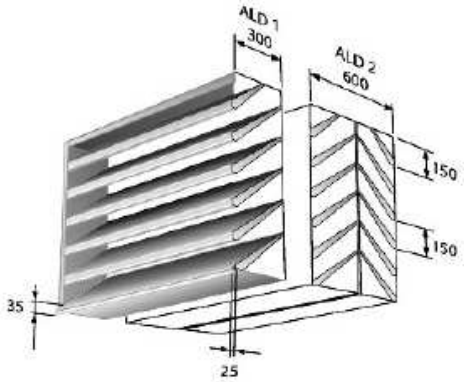
Acoustic Performance (Table 1)

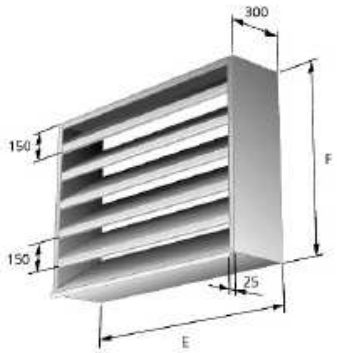
Transmission Loss (TL) dB	Type	Frequency Hz						
		63	125	250	500	1000	2000	4000
	OS-ALD1	2.00	5.00	7.00	12.00	18.00	21.00	16.00
	OS-ALD2	3.00	9.00	12.00	21.00	32.00	34.00	32.00



Integral attenuation has been determined in accordance with the following method: An OS-ALD louver is mounted in the outer wall of a standard solid room. A diffused sound field is created in the room. Measurements are made on the other side of the wall, with and without the acoustic louver. The difference is equal to the attenuation of the louver. For normal plant rooms the noise reduction to the surroundings for OSALD 1 is approx. 12 dB (A), and for OSALD 2 approx. 17 dB (A) compared to a conventional external louver.







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Louver Selection

The acoustic performance needed to meet a particular design noise requirement can be calculated from other technical sources. Table 1 indicates the acoustic performance available from standard and high performance acoustic louvers.

From Chart 1, select a louver size at a face velocity that gives an acceptable pressure loss. Check that louver self noise will not infringe upon the design noise criterion by reference to the Self Noise Index, SNI. The SNI gives an approximation of regenerated noise from the louver due to air velocity. This is expressed as an NC value at 1 meter, 3 meters and 10 meters from the louver face. The louver selected should have an SNI at least 5 NC below the design noise criterion.

Chart 1 : Type OS-ALD1

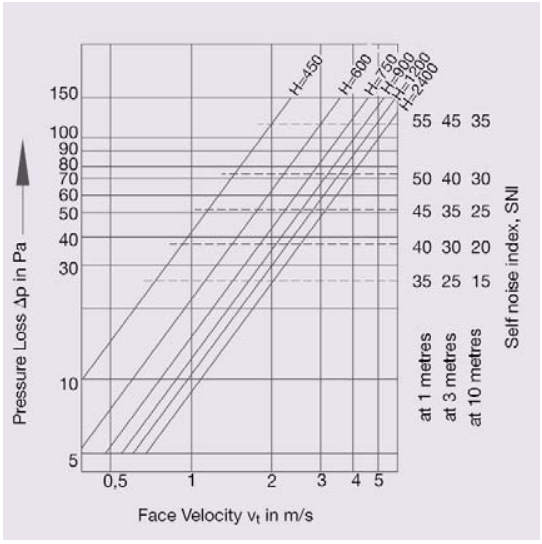
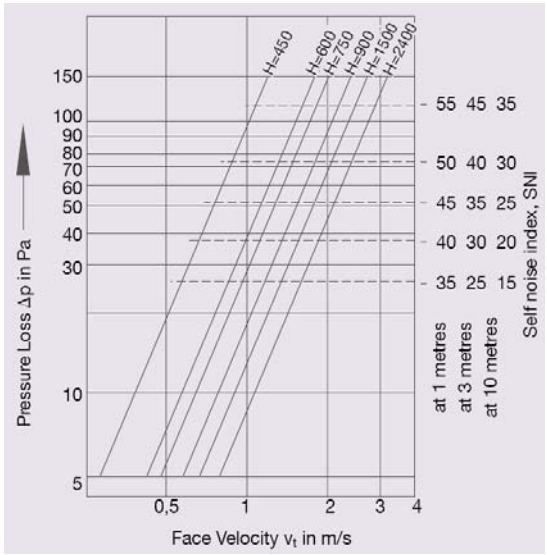


Chart 1: Type OS-ALD2



Example

a) SRI required @ f_m =

63	125	250	500	1k	2k	4k	8k	Hz
2	5	7	11	14	16	10	8	dB

b) Design noise criterion = NC50 at 3 meters from opening.

c) Volume floe rate, V = 12000 l/s.

d) Maximum required pressure loss, Δp=50Pa

e) Maximum required height, H = 1200mm.

1) From Table 1, a standard performance Type **OS-ALD1** louver would meet the required acoustic performance.

2) From Table 2, the maximum permissible face velocity, for Δp = 50 Pa, is 2.8 m/s.

3) From Table 2, the maximum permissible face velocity, vt for an SNI of 50 minus 5 at 3m, is 4.9 m/s.

4) Size the louver at the limiting velocity of 2.8 m/s.

Required louver area, m^2 = $V \div (v_t \times 1000)$
= $12000 \div (2.8 \times 1000)$
= 4.290

Width, W required = $4.290 \div H$(in meters)
= $4.290 \div 1.2$
= 3.575 meters
= 3575 mm

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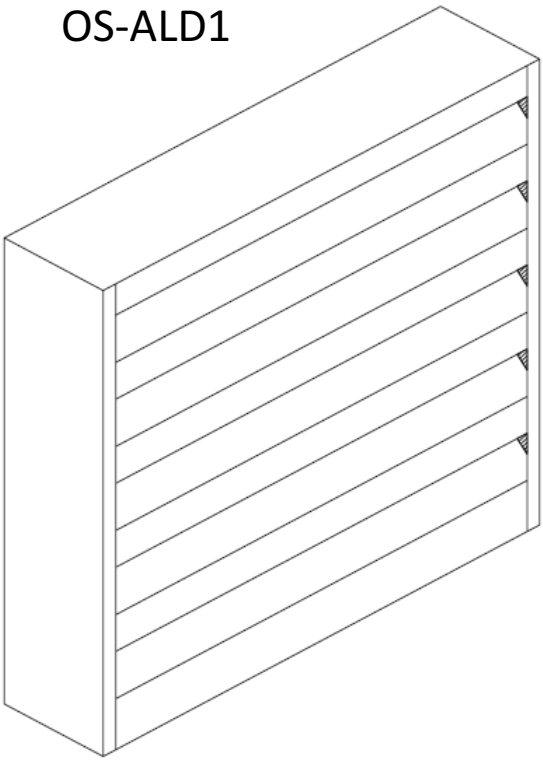
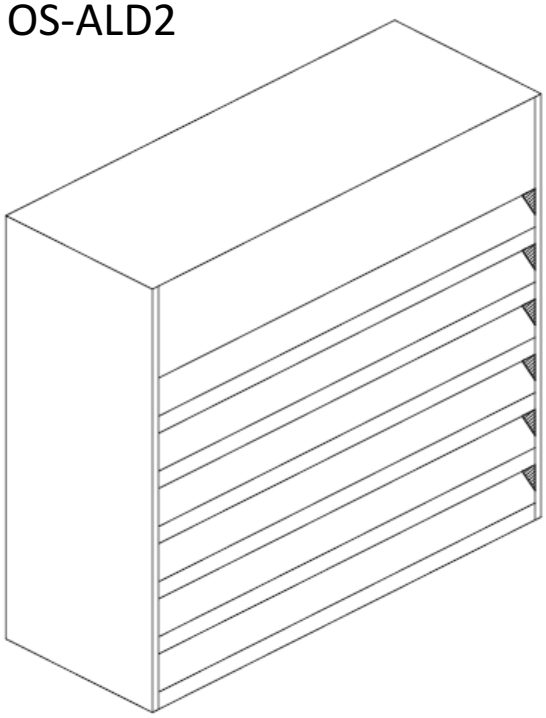
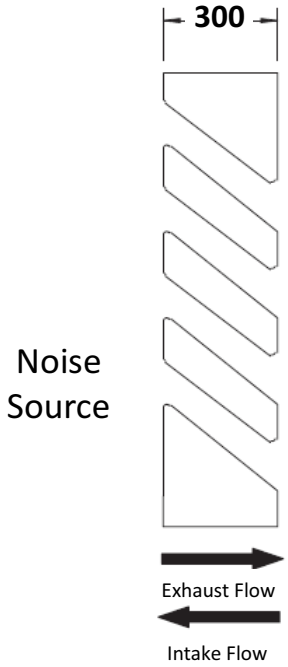
Typical sectional Elevation

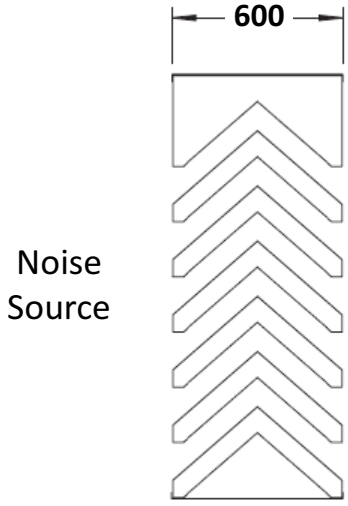
OS-ALD1



OS-ALD2







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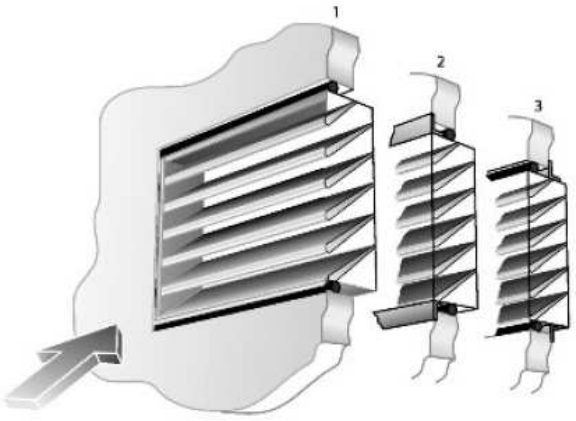
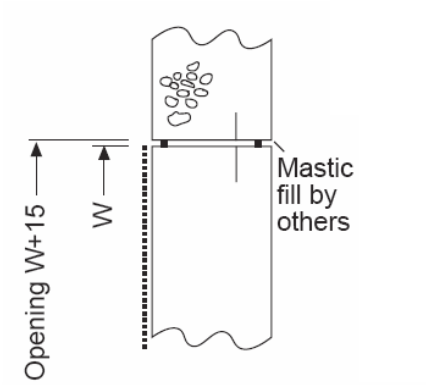
Installation Details

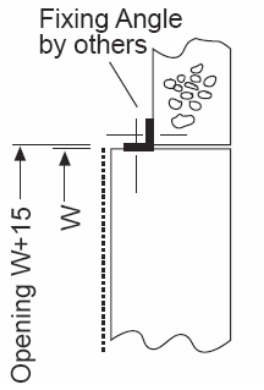
The louver is supplied as standard without mounting accessories.
The louver can be mounted as follows:

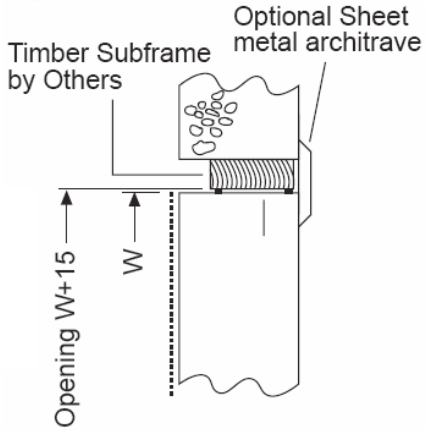
1. Using bolts through the louver's sides.
2. Using an external flange.
3. Using an internal flange.

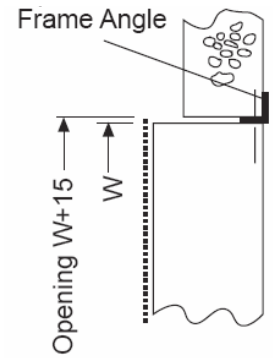
OSALD in double design is supplied as two single louvers for assembly on site.
The vertical casing sides of the acoustic louvers are pre slotted to facilitate fixing using a variety of acceptable methods.
On multi section units, the casings are supplied drilled for easier site assembly. During fixing, the louvers should be set square and true in opening then wedged before fixing. Air gaps should be filled with flexible mastic.











Order Code

OS-ALD	/	1	/	S	/	4000	X	1800	/	S1	/	RAL 9010
Louver Type		1 = Single-300 mm 2 = Double-600 mm		S= GI A= Al.		Width, W		Height, H		Finish: 0 = GI finish 01 = Mill Finish S1 = Painted RAL P1= Powder Coated RAL		Color Code

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OPERATION AND MAINTENANCE GUIDELINES

Optima acoustic louvers are designed to provide an aesthetic appearance while controlling noise and allowing passage of air. Once installed it is important to ensure the louvers are not damaged as this may affect both their acoustic and airflow performance. In the event that a louver is damaged, Optima should be consulted to ensure the louver is repaired in an appropriate manner and without compromising the properties of the louver. Optima Acoustic Louvers are manufactured from both GI OR Aluminium. The louvers are filled with inert non-combustible acoustic grade absorber. The products can be supplied with a variety of finishes however the cleaning process for all finishes is identical.
The louvers may, over time begin to collect dust and grime due to their location and exposure to varying weather conditions resulting in clogging of metal perforations which will affect the louver acoustic performance therefore, The louvers should be cleaned to refresh their visual appearance as well as performance at six monthly intervals. In coastal or industrial environments cleaning should be carried out more frequently paying particular attention to areas that are not normally washed by rain.

GI louvers are not designed to be used in areas where they may be exposed to contaminants such as water treatment or cleaning chemicals. If the louvers are exposed to such contaminants they should be cleaned immediately to reduce the detrimental impact of the chemicals. Cleaning of the louvers should be completed using a soft, clean cloth and Soft Wash Gel cleaner. The cleaning process and quantities must be in accordance with the manufacturer's instructions. Surfaces should be thoroughly rinsed with fresh water after cleaning.

DO NOT use harsh cleaning fluids, strong solvents or abrasive cleaning materials, as these will damage the surface finish on the acoustic louvers. Once the louver surface finish is damaged it cannot be repaired and in many cases may lead to deterioration of the base metal. Care should be taken to ensure that water not to seep into metal perforations and destroy the acoustic infill.

If the acoustic louver has been structurally damaged, contact Optima factory for assistance.

Call us to discuss your requirements for noise control, and know how to employ the Model OS-ALD Acoustic Louvers to control your noise problems.

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