



ACOUSTIC ENCLOSURES



Introduction

Noise is often conveniently defined as a sound which is unwanted by the recipient. Unwanted noise is no longer something that has to be endured, it can and must be controlled.

In any surroundings, the primary cause of complaint due to noise is nearly always linked to excessive sound levels, either within or external to premises. Any problem involving the avoidance of unwanted noise may be tackled by a systematic approach.

Enclosing the sound source can sometimes be the most effective method of noise control. To be most effective the source must be totally enclosed. It is however, necessary with a lot of equipment to provide ventilation for cooling. Unless only small sound reduction is required, any openings for ventilation must not degrade the performance of the enclosure and should, therefore, either contain attenuators or acoustic louvers.

When only a small reduction is required a partial enclosure, which provides natural ventilation, may be sufficient.

Application

Acoustic Enclosures are designed and built for optimum noise control and may be used to enclose the noise, in the case of equipment operations. Complete mechanical isolation between source and enclosure is required. Preferably the machine itself should be vibration isolated from the floor and its services.

The pre-fabricated modular units, enables it to be constructed in a variety of sizes which is suitable for site assembly.



Description

Use

The Acoustic Enclosure, type LMV, is used where both simple and effective sound screening or noise encapsulation is desired. The flexible system makes the machine room walls particularly viable for the construction of separate rooms in production and storage locations as well as offices for shop foremen, controls room, crew's quarters, storage rooms, etc. and for noise encapsulation of machines and production systems by ventilators, compressors, generating systems, etc.

Benefits

The modular construction of Acoustic Enclosure leads to the system being:

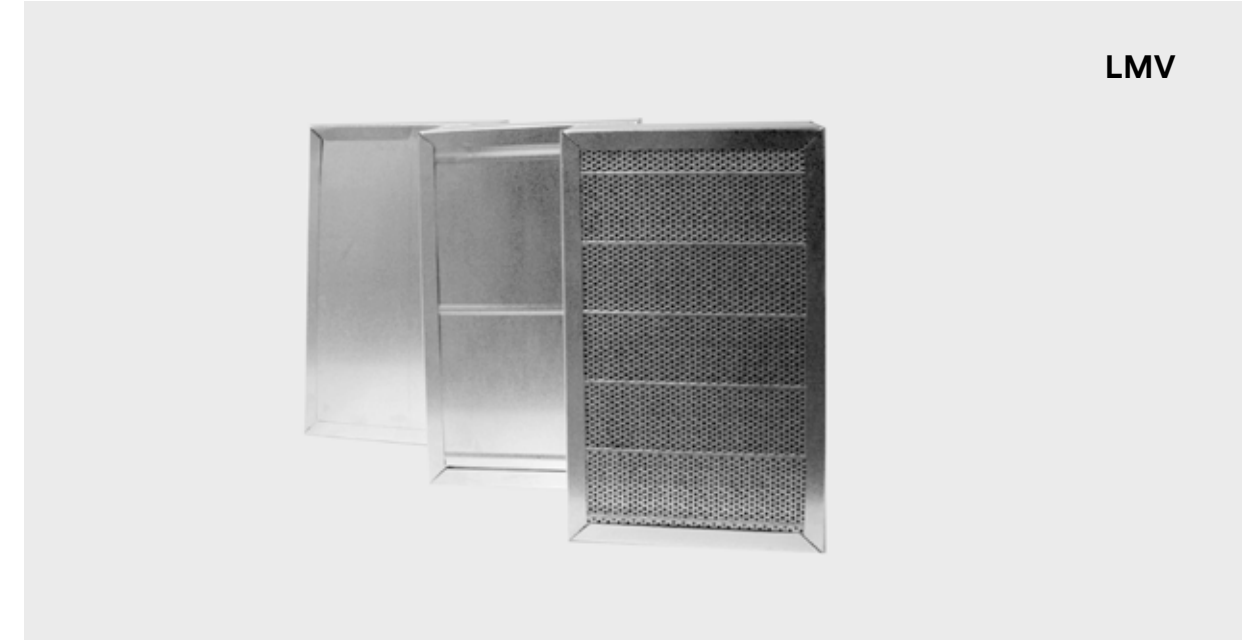
- able to be set up and installed on-site
- able to be part of both small as well as large encapsulations
- able to be expanded or changed in step with production expansions, etc.
- able to be set up as an extension of other elements
- able to be delivered either as parts or as a complete job

All in all, it gives great flexibility, which makes the system ideal for countless purposes.

Design

Acoustic Enclosures are modularly designed. The exterior sides of the modules consist of a galvanized steel plate, which is glued onto mineral wool. The modules are also available in perforated steel plates. Assembly is performed via a supplied channel, and the elements can moreover be mounted both vertically (as in the picture) and horizontally.

The elements are supplied in a standard width of 500mm to 1080mm. The elements can be supplied as needed in lengths of up to 3000mm. Adjustments to the elements can easily be performed during installation using an electric saw. LMV can be supplied with protective sheeting.



Description

The acoustic panels consist of outer and inner walls with acoustic infill in between are modularly designed and built to reduce noise or enclose the noise.

Construction

The standard acoustic panels used for both walls and roof are 500mm to 1080mm wide (for 50mm thickness) constructed of an outer wall of galvanized steel sheet metal Ga.16. Acoustic infill is retained behind an inner wall of either perforated or solid galvanized steel sheet metal Ga.22.

The assembly of panels is on site, by others. Safid will provide full details of panel configuration and assembly.

Technical Data

Standard Width (W): 500 mm to 1080 mm (for 50 mm thick)

Standard Thickness (T): 50 / 100 / 150 / 200

Length (L): Up to 2500 mm

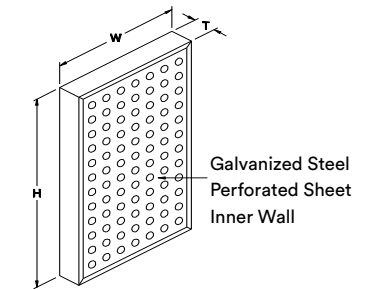
Weight: Approx. 18 kg/m² (for 50 mm thick)

Color: Supplied in galvanized steel finish and epoxy paint in various colors.

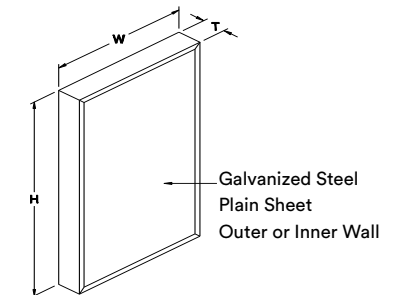
Accessories: Acoustic doors in standard thickness. Assembly rails windows.

Dimensions

LMV-50...200-G-P



LMV-50...200-G-G



Ordering

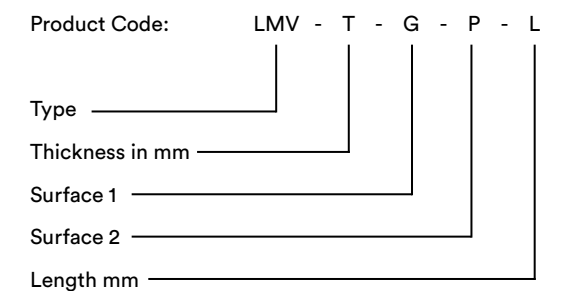


Table 1: Sound Transmission Loss in dB

Type	Octave Centre Frequency, fm in Hz						
	63	125	250	500	1000	2000	4000
LMV - 50 - G - P	17	20	20	24	25	27	32
LMV - 50 - G - G	21	25	29	32	36	38	42
LMV - 100 - G - P	23	22	22	29	29	32	39
LMV - 100 - G - G	28	30	32	39	39	44	49
LMV - 150 - G - P	26	24	31	36	36	42	47
LMV - 150 - G - G	33	37	41	48	48	50	50
LMV - 200 - G - P	28	25	32	34	34	44	49
LMV - 200 - G - G	35	39	42	49	49	50	50

Noise Reduction

The Table shows the sound transmission loss figures ± 3dB for the different types of elements. For elements with epoxy paint, the values for galvanized steel or perforated galvanized steel can be used.

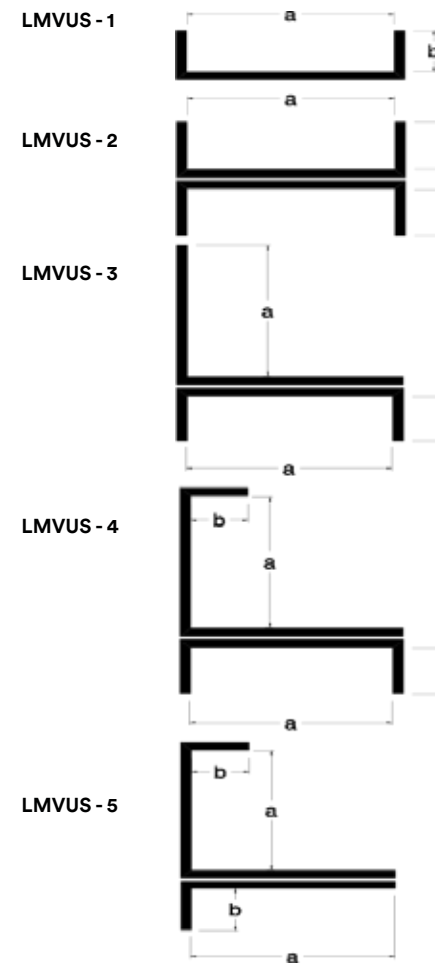
For example. LMV-50-G-P: Plain galvanized steel sheet on one side, and perforated steel sheet on the other side.

Table 2: Selection of Combination

Thickness in mm	Surface 1		Surface 2		
	G	PL	G	P	PL
50	x		x	x	x
50		x		x	x
100	x		x	x	x
100		x		x	x
150	x		x	x	x
150		x		x	x
200	x		x	x	x
200		x		x	x

G = Galvanized Steel
 PL = Epoxy Coated Finish
 P = Perforated Galvanized Steel

LMVUS



Construction Variants

LMVUS - 1 : railing to be mounted horizontally on the floor.

LMVUS - 2 : railing to be mounted on horizontal or vertical position between walls or ceiling panels.

LMVUS - 3 : railing to be mounted on top of the wall panels.

LMVUS - 4 : vertical railing typical of 3 pieces to be mounted in dequence on 3 corners of the wall.

LMVUS - 5 : vertical railing to be mounted on the last corner of the walls during assembly.

Dimensions

Standard Dimensions

a (mm)	b (mm)
55	35
105	35
155	35
205	35

LMVUD



LMVUD : angle railing for exterior edging around on corners of wall and ceiling panels.

Dimensions

Standard Dimensions

a (mm)	b (mm)
85	45
135	45
185	45
235	45



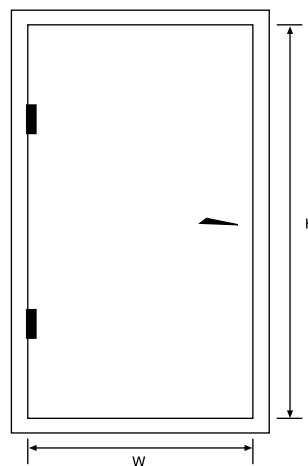
Description

Machine room doors are double walled door panel with mineral wool insulation. Designed to provide access for machine rooms and enclosure.

Construction

Machine room doors are supplied in standard 50 mm thicknesses, and can be installed as needed with 2-layers made-to-measure double glazing. Outer and inner walls are manufactured from galvanized steel sheet metal 3mm thick. Closure by double lever locking devices which can be operated from both sides. Can be supplied with double glass as option.

Dimensions



Standard Sizes

	Doorway Size	
	W (mm)	H (mm)
Standard	605	805
Single Leaf	605	1205
	605	1605
	605	1805
Spec. Single Leaf	800	1961
Double Leaf	1595	1961

