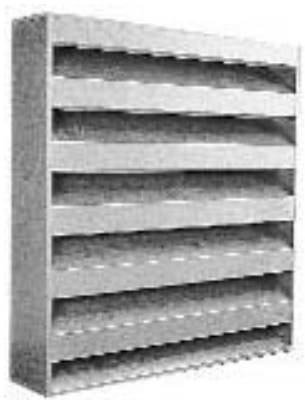
# SOUND BAR LOUVRES SBL SERIES



## Features

In modern buildings there is an increasing need to provide large air flow openings for plant and equipment, whilst minimising noise impact effects on the environment.

The Q-Tech range of aesthetically-designed acoustic weatherproof louvres not only acts as an efficient sound barrier, but also permits the accurate prediction of the corresponding resistance to air flow. This enables the designer to confidently match the louvre size precisely to the building plant's needs.

Two models are available in the range, designated SBL1 (300mm deep) for standard applications and SBL2 (600mm deep) for more demanding applications. These units are available in standard module height increments of 250mm, up to a single module size of 2400mm wide and 2250mm high. The design of the louvre profile ensures a high level of sight-proofness and an aesthetically-pleasing view from below.

Larger opening sizes are catered for by the use of a number of individual modules, site-assembled. This results in simpler site handling and a reduced risk of site damage. Should architectural form require special shapes or sizes please contact your Q-Tech distributor for assistance.

## Acoustic Performance

The acoustic performance of the SOUND BAR acoustic louvre range is based on tests conducted in Australia in accordance with AS1191:1985. The Standard requires the test louvre to be placed in a partition wall dividing two suitably sized reverberation rooms. This test Standard determines the 'Sound Transmission Loss' which is the ratio of the sound power incident onto the louvre, to the sound power transmitted through the louvre.

The 'transmission loss' is numerically equal to the 'Insertion Loss' and can be applied in a similar fashion.

It has become common practice to report the performance of acoustic louvres in terms of 'Noise Reduction'. This is the difference in sound pressure levels between a reverberant room and the free field. The numerical difference between 'Sound Transmission Loss' and 'Noise Reduction' is 6dB.

For convenience the performance data has been quoted as 'Noise Reduction' with 'Sound Transmission Loss' below (Figure 1).

The performance data is based on tests conducted in Australia using Australian-sourced and manufactured materials.

## Aerodynamic Performance

The aerodynamic performance of the SOUND BAR acoustic louvre range is based on tests conducted by the CSIRO. These test results were obtained by carrying out a Type A test (open inlet and open outlet) on their air flow test facility conforming to BS848:Part 1, 1980.

Figure 2. details the resistance to air flow for both SBL1 and SBL2 louvres. This data is based on an open inlet and open discharge situation as would be found in a typical plant room application. The pressure loss is not only affected by the area of the louvre, but also by the louvre height. A 500mm high louvre will have a much higher flow resistance than a 2250mm high louvre for the same face velocity.

When bird mesh is used the pressure loss increases by 2%.

## Construction

The standard SBL1 Sound Bar acoustic louvre construction consists of a 1.2mm thick galvabond case with a return fold all around to increase unit rigidity. The 300mm deep louvre is manufactured from galvabond and filled with acoustic infill.

The SBL2 unit is similar in construction, but also includes an additional 300mm deep module supplied separately. Each splitter is filled with sound-absorbing material.

The infill material is covered with gauze scrim to prevent erosion of the fibres and then encased in perforated metal to enhance the acoustic performance and to prevent mechanical damage.

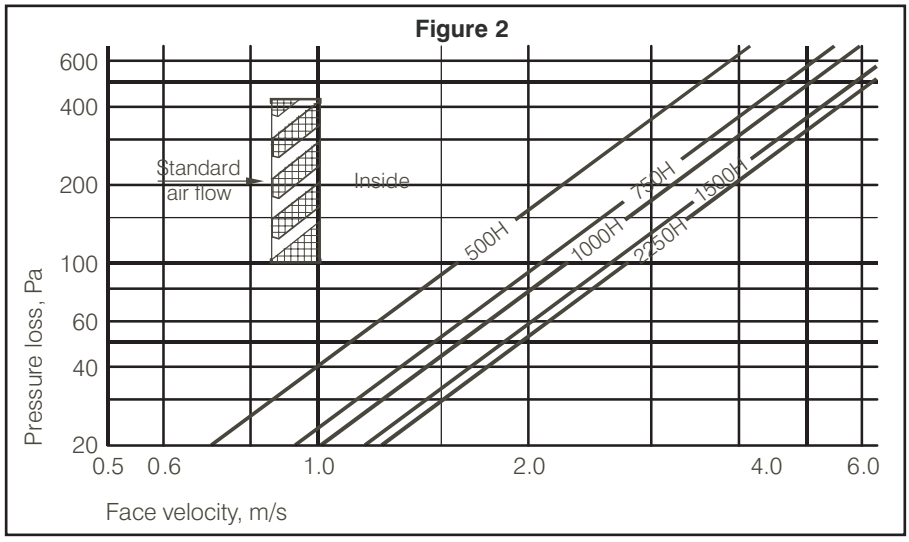
The Sound Bar louvre range can be manufactured from aluminium or anodised aluminium on request. It is important to consider whether full aluminium construction (including perforated metal) or partial aluminium (externally-visible sections only) is required.

Q Seal lining of the infill material can also be provided to suit applications where regular washing of the perforated metal surfaces may be necessary or where contaminants are present, such as oils, etc. Note, the use of an impervious lining will impact on the acoustic performance of the Sound Bar Louvres.

Other finishes such as stainless steel or aluminium are available on request.

## Pressure Drop Graph

Figure 2




Note: For reverse air flow multiply by 1.3
For SBL2 multiply by 1.03

## Selection Method

1. Calculate the required louvre noise reduction (NR) / sound transmission loss (STL) for your application.
2. Select the required louvre model from the acoustic performance table. (Figure 1.)

Note - Use noise reduction when calculating reverberant room to free field levels, and sound transmission losses when calculating reverberant room to reverberant room levels.

3. Determine the maximum allowable louvre airside pressure loss for your design.
4. For the selected pressure loss, read the corresponding face velocity from Figure 2.for the chosen louvre height. Note the pressure loss is affected considerably by the height.
5. Calculate the required louvre area to maintain the selected face velocity.
6. Calculate the resultant louvre width using the chosen height from Step 4.

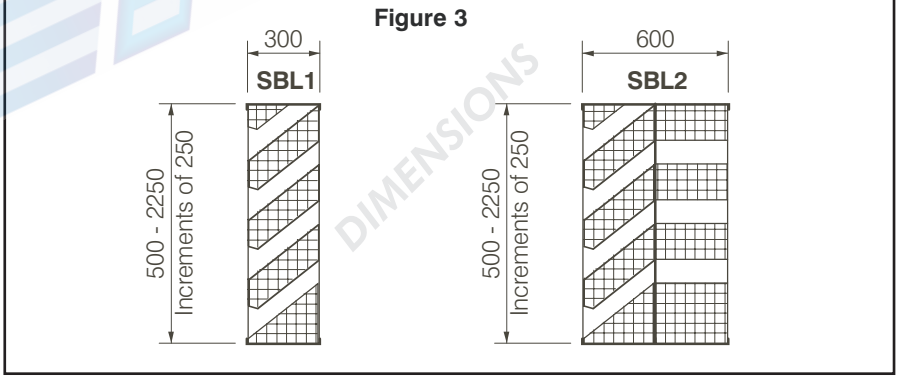
Note - Height dimensions range from 500mm in increments of 250mm to a maximum of 2250mm for a single module. The width dimension are unrestricted, with a maximum width of any single module being 2400mm. Any opening area can be accommodated using multiple modules for height or width.

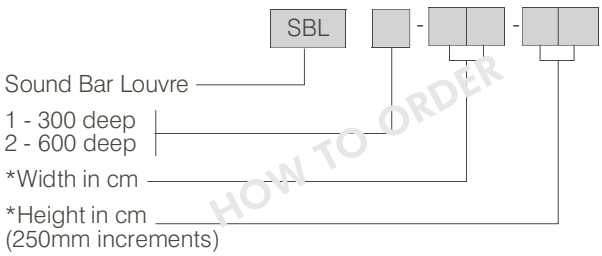
Figure 1

| Model.. | | Static Insertion Loss, dB Octave Band Centre Frequency (Hz) 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
|---|---|---|---|---|---|---|---|---|---|
| | NR | 10 | 13 | 15 | 19 | 20 | 18 | 18 | 14 |
| SBL1 | STL | 4 | 7 | 9 | 13 | 14 | 12 | 12 | 8 |
| | NR | 11 | 16 | 20 | 28 | 33 | 31 | 27 | 23 |
| SBL2 | STL | 5 | 10 | 14 | 22 | 27 | 25 | 21 | 17 |

NR - Noise reduction STL - Sound transmission loss

Figure 3




*When ordering, allow for 10mm all around the louvre to accommodate for site discrepancies.

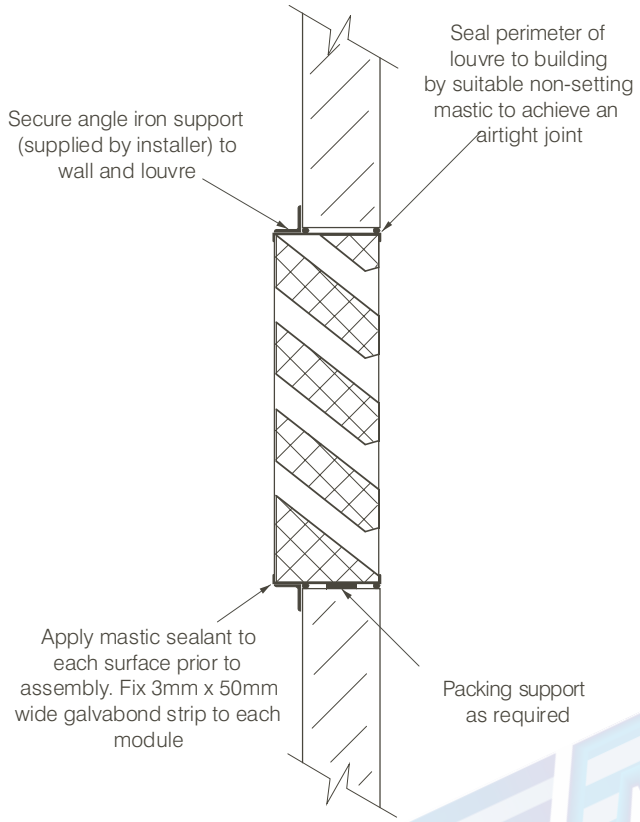
Special options eg. impervious lining, should be clearly nominated at the time of order.

| Height, mm | Width, mm 500 | 1000 | 1500 | 2000 | 2400 |
|---|---|---|---|---|---|
| 500 | 13 | 23 | 33 | 43 | 51 |
| 750 | 20 | 35 | 50 | 65 | 77 |
| 1000 | 27 | 47 | 67 | 87 | 103 |
| 1250 | 34 | 59 | 84 | 109 | 129 |
| 1500 | 41 | 71 | 101 | 131 | 155 |
| 1750 | 48 | 83 | 118 | 153 | 181 |
| 2000 | 55 | 95 | 135 | 175 | 207 |
| 2250 | 62 | 107 | 152 | 197 | 233 |

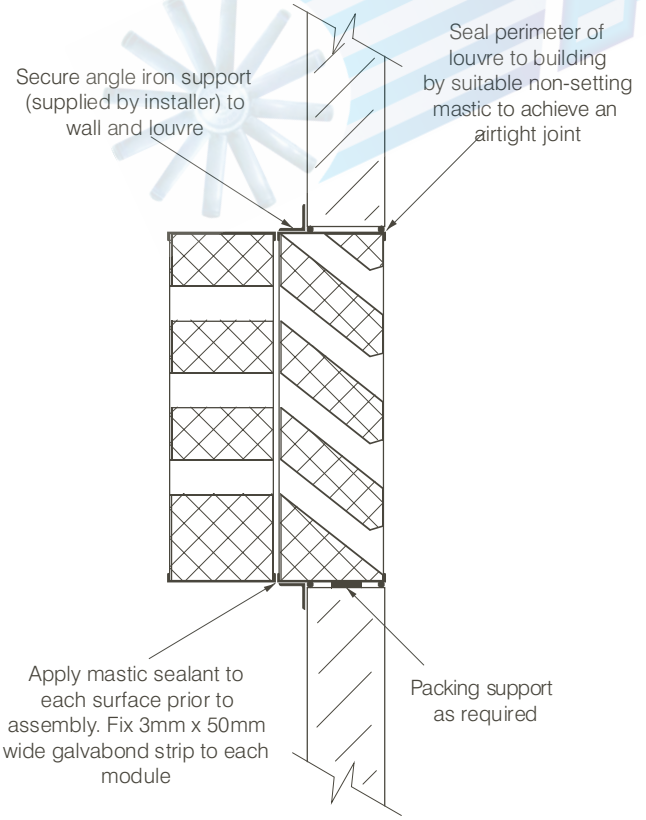
All weights are in kg
To obtain SBL2 weights multiply SBL1 × 1.85

## Mounting Arrangements

### SBL1




### SBL2




## Suggested Specifications

The Sound Bar Louvre(s) shall be as manufactured by Elta Fans and shall be supplied and installed where shown on the drawings.

The louvre(s) shall have a galvanised steel casing with acoustic elements that are equidistant.

The elements shall have an acoustic infill material which is covered in a gauze scrim to prevent erosion of the fibres and then encased in galvanised, perforated sheet steel.

Performance shall be certified to AS1191:1985 using Australian-sourced materials with tests for noise reduction and pressure drop being undertaken by independent Australian authorities.