



Acoustic Louvres



Par has been at the forefront of acoustic louvre technology for over four decades.

Our Acoustic Louvres are recommended for the reduction of plant and machinery noise from buildings and ventilation systems. Especially suited to fresh air and process air intakes, air exhausts, cooling tower enclosures, and combating environmental noise for commercial or residential areas.

Manufactured from folded galvanised steel or aluminium, the louvre elements are aerodynamically designed providing clean air flow whilst maintaining a pleasing aesthetic appearance and retaining a high density acoustic medium. All external faces can be coated in polyester powder paint. Variable top and bottom blades allows the height of the louvres to be manufactured to suit the installation.

The standard and high performance louvres are available at 300mm deep, whilst the double bank louvre is 600mm thick. Dummy acoustic louvres and single or double door sets can be manufactured to suit the building requirements. The approximate weight of the standard 300mm acoustic louvre is 45kg/m².



Design Notes

1. The above table is a theoretical and the actual louvre height should be used to determine the number of airways.
2. The 'No. off Airways' gives the number of Active airways, where each airway is 110mm high.
3. Actual Free Area (m²) =

$$\frac{\text{No. off airways} \times 0.11 \times (\text{width mm} - 50)}{1000}$$
4. The Actual Free Area is the **Minimum Free Area** at the front face and will increase towards the rear of the louvre.
5. The Free Area range indicates the percentage free area for the smallest - greatest height louvre within the height limits.

Standard Acoustic Louvre - Als Calculated Free Area

Louvre Height (mm)	No. Off Airways	Free Area Range %
535 - 734	1	14% - 20%
735 - 934	2	13% - 29%
935 - 1134	3	28% - 34%
1135 - 1334	4	32% - 37%
1335 - 1534	5	33% - 39%
1535 - 1734	6	36% - 41%
1735 - 1934	7	38% - 42%
1935 - 2134	8	39% - 43%
2135 - 2334	9	40% - 44%
2335 - 2534	10	41% - 45%
2535 - 2734	11	42% - 45%
2735 - 2934	12	43% - 46%
2935 - 3134	13	43% - 46%

Sound reduction Index

The Acoustic Louvre performance is derived from independent laboratory tests carried out in accordance with BS2750 Part3-1980 (ISO 140 Part 111-1978), and indicated on the table below.

Standard Acoustic Louvre ALS

Frequency (Hz):	63	125	250	500	1k	2k	4k	8k
S.R.I (dB):	4	5	10	12	15	23	21	24

High Performance Acoustic Louvre HPALS

Frequency (Hz):	63	125	250	500	1k	2k	4k	8k
S.R.I (dB):	5	6	12	15	18	28	31	28

Double Bank Acoustic Louvre DBALS

Frequency (Hz):	63	125	250	500	1k	2k	4k	8k
S.R.I (dB):	6	8	12	18	24	26	20	18

Pressure Drop And Weather Protection

The optimum selection of any weather louvre is a balance of pressure drop and degree of weather protection or water rejection.

Normally the process of selection will follow these steps:

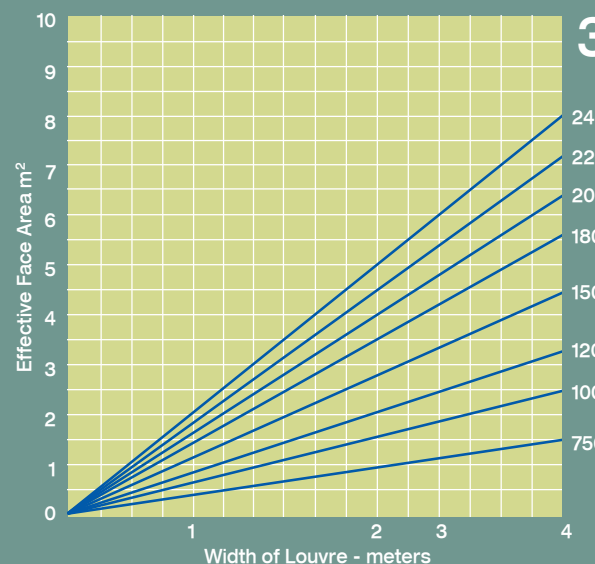
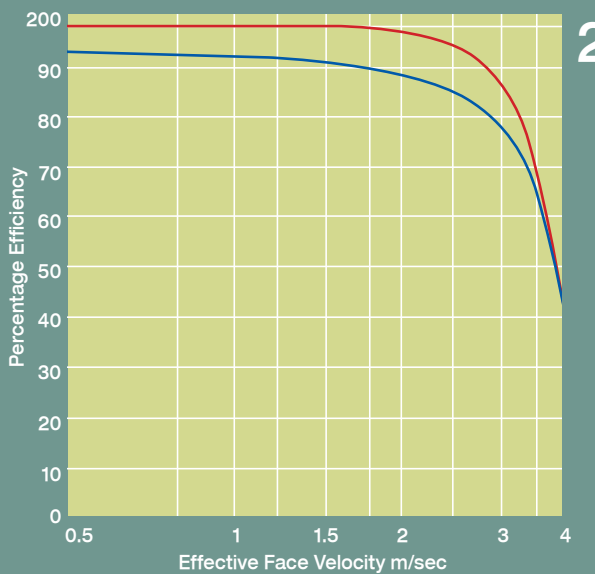
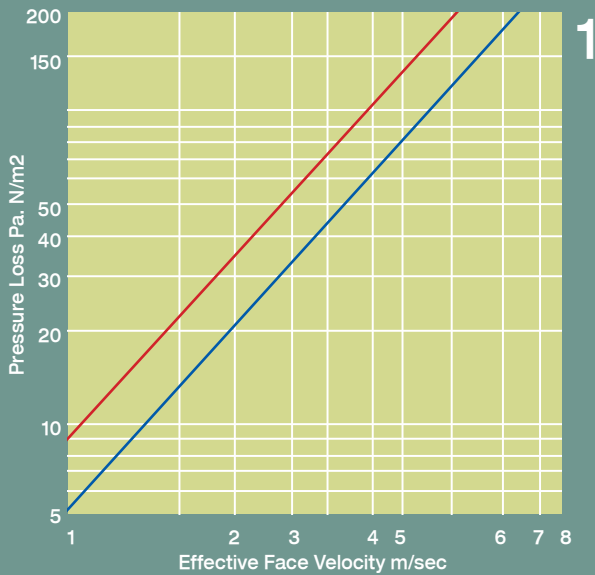
(i) Knowing the pressure loss acceptable, **Graph 1** gives the limiting face velocity required for a louvre with or without a Birdmesh screen.

(ii) The percentage effectiveness of water reflection can be checked from **Graph 2** at 0 and 30 mph (13 m/sec) wind speeds.

(iii) **Graph 3** will allow the dimensions of the louvre to be estimated when Effective Face Area has been calculated from :

$$\text{Eff. Face Area} = \frac{\text{Volume of air flow m}^3/\text{sec}}{\text{Eft. Face Velocity m/sec}}$$

Note that the normal height selection ceases at 500mm. Below this height Par engineers should be consulted for an optimum design.*



Effective Face Area is the area left if all active louvres were removed. This data is based upon tests carried out at BSRIA Laboratories in accordance with the HEVAC Standard and the Draft B.S.

