

BLACKWATCH

Security Ventilation Louvre

Independently tested and certificated to LPS 1175 Security Rating 4

Typical Applications:

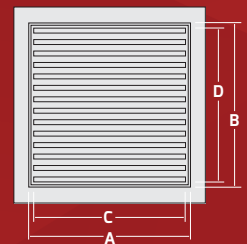
- Server Rooms
- Generator Rooms
- Air Conditioning Systems
- Sub Stations
- Chemical Storage
- Nuclear Power Stations

Technical information:

- Construction - Heavy duty steel.
- Tested Size - 1,000mm x 1,000mm.
- Finish - as standard powder coated Grey/White leatherette or alternatively in a colour of your choice.

Panel sizes:

Width (mm) 'A'	Height (mm) 'B'	Louvre Width (mm) 'C'	Louvre Height (mm) 'D'	Air Flow %
300	300	244	220	30%
600	600	544	540	31%
1000	1000	944	900	32%



Air flow percentages are rounded down to the nearest whole number.
Airflow calculations should be considered as a guide only.

600mm x 600mm (0.6m x 0.6m) unit:

Louvre area: 544mm x 540mm = 0.544m x 0.540m = 0.29376m²

Gaps between blades: 13 of 0.544 x 0.01326 = 13 of 0.0072134 = 0.0937742m²

Free air flow percentage: $\frac{0.0937742}{0.2937600} \times 100 = 31\%$ (rounded down to nearest whole number)

Note: The value on the examples is based on air figure constant and does not include any type of mesh.

Pressure drop across louvre as a function of approaching flow velocity (high flow velocities).

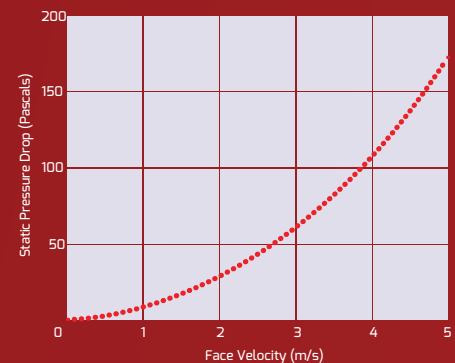
Using Bernoulli's equation, it can be shown that for a parallel duct system that exhausts into, or takes air from the atmosphere, $\Delta p/q = 1 + \Delta P/q$.

Total non-dimensional static pressure drop for 0.2m/s flow rate, $\Delta p/q = 1 + \Delta P/q = 1 + 6.71 + 3.02 = 10.73$

Louvre | Slotted plate

Hence the static pressure drop $\Delta p = 10.73 \times (\frac{1}{2} \times 1.2 \times 0.2^2) = 0.26 \text{ Pa}$.

**AIR FLOW DYNAMIC CALCULATIONS
AVAILABLE ON REQUEST**



Optional enhancements:

- Accelerant Protection - Internal stainless steel mesh shield with bevelled run out.
- Vibration Alarm - sensor connected to louvre blade.

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