# Model KSTL
## Sand Trap Louvers

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### Introduction

KMC sand trap louvers are specifically designed to allow air flow into buildings and at the same time restrict the entry of dust and sand particles where these elements are natural hazards.

Manufactured from Galvanized steel material, the units are designed and tested to withstand the most severe weather conditions for many years.

Installed vertically in buildings these units provide a unique feature visually but perform an important element in ventilation design.

### Application

The Sand Trap Louvers Model KSTL are designed for usage in serving as a Pre - Filter element in dusty conditions. It has a degree of separation of sand and large dust particles, even in cases of high dust concentrations. The vertically arranged sections and holes for sand drainage ensure the sand trap louver is self- cleaning and maintenance free. The sand trap louver is designed to separate large particles at low air velocities, thus avoiding excessive dust loading on conventional plant filters. It is not intended as a substitute for conventional supply air filtration plant.

The sand trap Louver blades are formed in U Profiles placed alternately in vertical configuration.

### STANDARD CONSTRUCTION

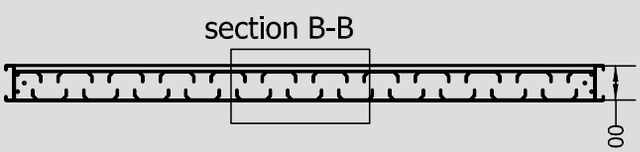
- Frame: 1.2mm thick extruded Aluminum
- Blades: 1.2mm thick extruded Aluminum
- Finish: Natural Aluminum
- Extruded construction from 2.0mm thick frame & blade thickness
- Formed Aluminum Construction
- Formed Galvanised sheeet steeel (GI) Construction
- Formed SS304 / SS316 construction (consult factory)
- Variety of Bird & Insect screens
- Variety of finishes – powder coated to standard RAL colors

### Selection Procedure

The proper selection of Louver depends on following two basic criteria:

- Louver Free Area
- Resistance to Air flow

Please refer the selection example shown in the catalogue.




### Dimensions

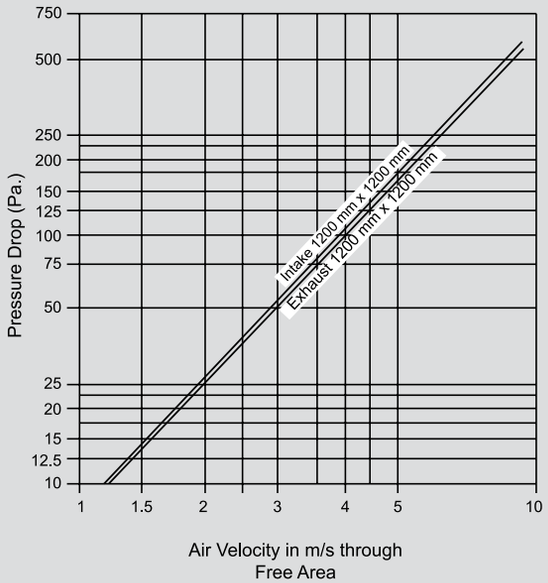
| KSTL Dimensions | Minimum Single Panel | Maximum Single Panel |
|---|---|---|
| | mm | mm |
| Width (W) in mm | 300 | 2400 |
| Height (H) in mm | 300 | 2400 |

**Product Selection Check List**
- Select Unit size based on desired performance characteristics.
- Select Finish.

## Sand Trap Louvers

**Graph - 1**

Rating do not include the effect of birdscreen
Pressure Drop




| Particle Removal Efficiency | |
|---|---|
| Particle Size | Efficiency (%) |
| 0-70 microns | 50 |
| 71-200 microns | 80 |
| 201-700 microns | 90 |

**Pressure Drop**

For normal operation conditions

**Sand Trap Louver selection:**

Selection basis : The sand Trap louvers should be rated for a face velocity of approx. 1.0 m/s (200 fpm)

Example : Volume Flow rate = 1$m^3$/s (3600 $m^3$/h)
Allowable Pr. Drop = 25 Pa (0.1 " w.g).

Selection : Free Area velocity from Graph – I @ 25 Pa = 2.0 m/s.
Free Area Required = Volume Flow rate / Free Area Velocity = 0.5 $m^2$.
The size selected from the free area Table, 1200 (W) x 1200 (H).
Free Area = 0.51 $m^2$.
Face Area = 1.44 $m^2$.

$$\text{Face Velocity} = \frac{\text{Volume flow rate}}{\text{Face Area}} = \frac{1(m^3/s)}{1.44\ (m^2)} = 0.69 m/s$$

Since the actual Face velocity (0.69m/s) is not exceeding the recommended (1.0 m/s) value, the above selection is "OK"

**Free Area (Sq. Mt.)**

| | | WIDTH (mm) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 | 2100 | 2250 | 2400 |
| HEIGHT (mm) | 600 | 0.10 | 0.12 | 0.15 | 0.17 | 0.20 | 0.23 | 0.25 | 0.28 | 0.31 | 0.37 | 0.40 | 0.42 |
| | 750 | 0.12 | 0.16 | 0.19 | 0.23 | 0.27 | 0.31 | 0.35 | 0.39 | 0.43 | 0.50 | 0.54 | 0.58 |
| | 900 | 0.15 | 0.20 | 0.25 | 0.30 | 0.34 | 0.39 | 0.44 | 0.49 | 0.54 | 0.64 | 0.69 | 0.74 |
| | 1050 | 0.18 | 0.24 | 0.30 | 0.36 | 0.42 | 0.48 | 0.54 | 0.60 | 0.66 | 0.78 | 0.84 | 0.91 |
| | 1200 | 0.21 | 0.28 | 0.35 | 0.42 | 0.51 | 0.56 | 0.63 | 0.70 | 0.77 | 0.91 | 0.98 | 1.05 |
| | 1350 | 0.24 | 0.32 | 0.40 | 0.48 | 0.56 | 0.64 | 0.72 | 0.81 | 0.89 | 1.05 | 1.13 | 1.21 |
| | 1500 | 0.27 | 0.36 | 0.46 | 0.55 | 0.64 | 0.73 | 0.82 | 0.91 | 1.00 | 1.18 | 1.27 | 1.37 |
| | 1650 | 0.30 | 0.41 | 0.51 | 0.61 | 0.71 | 0.81 | 0.91 | 1.01 | 1.12 | 1.32 | 1.42 | 1.52 |
| | 1800 | 0.34 | 0.45 | 0.56 | 0.67 | 0.78 | 0.89 | 1.01 | 1.12 | 1.23 | 1.45 | 1.57 | 1.68 |
| | 1950 | 0.37 | 0.49 | 0.61 | 0.73 | 0.86 | 0.98 | 1.10 | 1.22 | 1.35 | 1.59 | 1.71 | 1.83 |
| | 2100 | 0.40 | 0.53 | 0.66 | 0.80 | 0.93 | 1.06 | 1.20 | 1.33 | 1.46 | 1.73 | 1.88 | 1.99 |
| | 2250 | 0.43 | 0.57 | 0.72 | 0.86 | 1.00 | 1.15 | 1.29 | 1.43 | 1.58 | 1.86 | 2.00 | 2.15 |
| | 2400 | 0.46 | 0.61 | 0.77 | 0.92 | 1.08 | 1.23 | 1.38 | 1.54 | 1.69 | 2.00 | 2.15 | 2.30 |

Designs should provide a reasonable safety factor for louver performance by selecting at some point below pressure drop or sand removal requirements