



Air Outlets

External Louvers

EX-L & FAL & DL



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EXTERNAL LOUVERS EX-L & FAL & DL



TYPES

- EX-L : EXHAUST LOUVER.
- F.A.L : FRESH AIR INTAKE LOUVER .
- LR : LOUVER WITH DAMPER .
- DL : DOOR LOUVER.



FEATURES

MATERIALS

- LOUVER ARE MADE FROM EXTRUDED ALUMINIUM PROFILES FOR FRAME AND BLADE .

FINISH

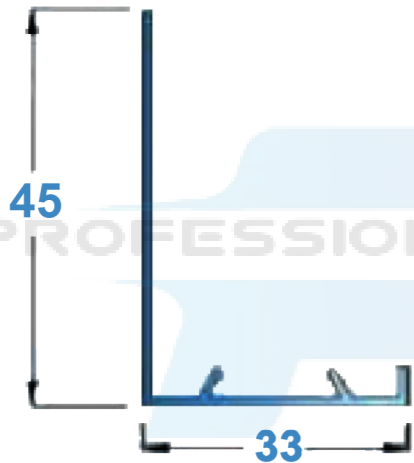
- STANDARD FINISH OF LOUVER IS SATIN ANODIZED OR POWDER COATED.



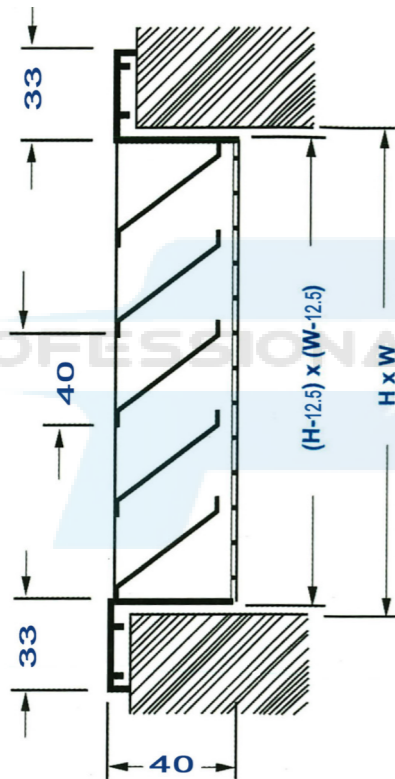
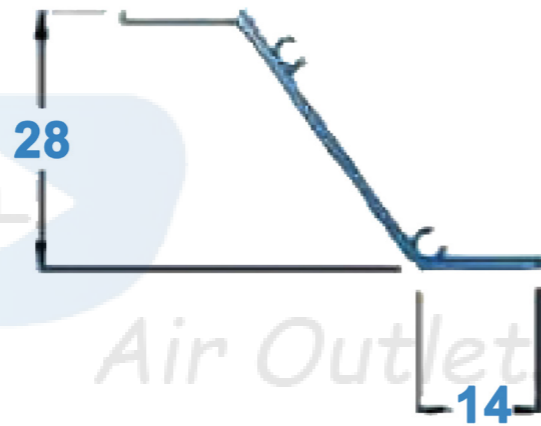
- THE EXTERNAL LOUVERS GIVES GOOD PROTECTION AGAINST THE DIRECT INGRESS OF RAIN WATER, LEAVES AND BIRDS. CAN ALSO BE USED DIRECTLY INSTALLED ON WALLS FOR THE VENTILATION OF INDUSTRIAL AREAS.
- THE EXTERNAL LOUVERS CAN BE USED FOR HEATING , VENTILATION OR AIR CONDITIONING PLANTS
- WEATHER PROOF LOUVERS WITH FIXED BLADES THE SPECIALLY DESIGNED FROM RENDER THEM AESTHETICALLY PLEASING AND HENCE IDEAL FOR INSTALLATION IN FLATS OR OFFICES .
- THE FRAME IS ASSEMBLED BY PRESSING IN THE FOUR ANGLES WHICH TOGETHER CREATE VERY ROBUST PRODUCTS .
- IT IS APPLIED FOR IMPROVING THE AESTHETIC IMPRESSION OF THE EXTERIOR , WHICH IS INCREASED BY THE SURFACE FINISHING AND THE SHAPE OF BLADES .
- IT PREVENTS DIRECT VIEWS INTO THE PROTECTED AREA.
- BLADE SPACING 1 3/4”
- EXHAUST AIR LOUVERS ARE AVAILABLE WITH DIFFERENT TYPE OF ATTACHMENTS SUCH AS :
 - OPPOSED BLADE DAMPER
 - ALUMINIUM FILTER
 - BOTH THE DAMPER AND FILTER
 - BIRD WIRE MESH IS FITTED TO THE REAR OF THE LOUVER .
 - PROVIDED WITH SUB FRAME TO BE DOOR LOUVER .

DIMENSIONAL DETAILS

FRAME



BLADES



W : Normal Width

H : Normal Height

PERFORMANCE DATA

PRESSURE REQUIREMENTS

| Velocity FPM | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| EXHUAUST Pt | .005 | .011 | .019 | .031 | .044 | .063 | .081 | .101 | .123 | .153 | .180 | .210 | .249 | .283 |
| INTAKE Pt | -.007 | -.017 | -.029 | -.047 | -.065 | -.094 | -.121 | -.150 | -.184 | -.228 | -.269 | -.312 | -.371 | -.422 |

Note: Pt - Total Pressure in inches of Water.
Velocity, fpm - Velocity corresponding to effective pressure area.
CFM = Velocity x Effective pressure Area

EFFECTIVE PRESSURE AREA FT²

| HEIGHT Inches | WIDTH - Inches | | | | | | | | | | | | |
|---------------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 |
| 12 | .300 | .346 | .400 | .452 | .505 | .557 | .610 | .663 | .716 | .769 | .821 | .874 | .927 |
| 14 | .355 | .419 | .483 | .547 | .611 | .675 | .739 | .803 | .866 | .930 | .994 | 1.06 | 1.12 |
| 16 | .417 | .492 | .567 | .642 | .717 | .792 | .867 | .942 | 1.02 | 1.09 | 1.17 | 1.24 | 1.32 |
| 18 | .479 | .565 | .651 | .737 | .823 | .910 | 1.00 | 1.08 | 1.17 | 1.25 | 1.34 | 1.43 | 1.51 |
| 20 | .541 | .638 | .735 | .832 | .930 | 1.03 | 1.12 | 1.22 | 1.32 | 1.42 | 1.51 | 1.61 | 1.71 |
| 22 | .603 | .711 | .819 | .928 | 1.04 | 1.14 | 1.25 | 1.36 | 1.47 | 1.58 | 1.69 | 1.79 | 1.90 |
| 24 | .664 | .784 | .903 | 1.02 | 1.14 | 1.26 | 1.38 | 1.50 | 1.62 | 1.74 | 1.86 | 1.98 | 2.10 |
| 26 | .726 | .857 | .987 | 1.12 | 1.25 | 1.38 | 1.51 | 1.64 | 1.77 | 1.90 | 2.03 | 2.16 | 2.29 |
| 28 | .788 | .930 | 1.07 | 1.21 | 1.35 | 1.50 | 1.64 | 1.78 | 1.92 | 2.06 | 2.20 | 2.35 | 2.49 |
| 30 | .850 | 1.00 | 1.16 | 1.31 | 1.46 | 1.61 | 1.77 | 1.92 | 2.07 | 2.23 | 2.38 | 2.53 | 2.68 |
| 32 | .912 | 1.08 | 1.24 | 1.40 | 1.57 | 1.73 | 1.89 | 2.06 | 2.22 | 2.39 | 2.55 | 2.71 | 2.88 |
| 34 | .973 | 1.15 | 1.32 | 1.50 | 1.67 | 1.85 | 2.02 | 2.20 | 2.37 | 2.55 | 2.72 | 2.90 | 3.07 |
| 36 | 1.04 | 1.22 | 1.41 | 1.59 | 1.78 | 1.97 | 2.15 | 2.34 | 2.52 | 2.71 | 2.90 | 3.08 | 3.27 |

SELECTION PROCEDURE

Example : Exhaust requirements for 1500 CFM with a pressure of 0.123" H₂O.

- 1) From the pressure requirements table, it shows that a 1000 fpm velocity results an exhaust pressure of 0.123" of H₂O.
- 2) Determine the Effective Pressure Area = $\frac{\text{CFM}}{\text{Velocity}} = \frac{1500}{1000} = 1.5 \text{ ft}^2$.
- 3) From the table, the 1.5 ft² requirement is suitable for the following sizes: 32"x20" high, 26"x24" high, etc.

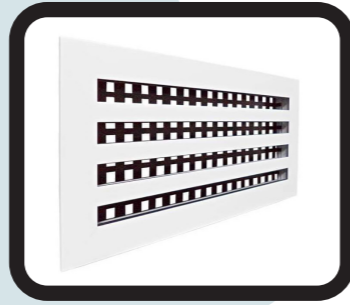
Note : For other sizes not shown in the table, the approximate Effective Pressure Area can be calculated by this equation :

$$\text{Effective Pressure Area} = (0.5H - 0.104) (W - 0.073) (0.8)$$

Where : H = Height, ft.
W = Width, ft.



Linear Slot Diffusers LSD



Linear Bar Grilles LBG

External Louvers EX-L



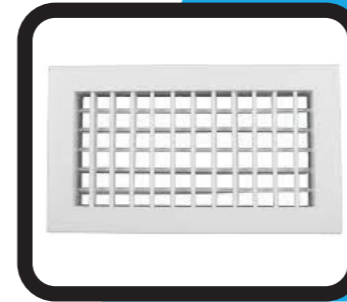
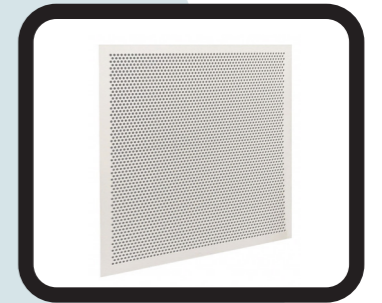
Square Ceiling Diffusers SCD



Jet Nozzles JN



Perforated Ceiling Diffusers PCD



Grilles And Registers SR

Swirl Diffusers SW-D

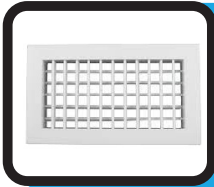


Volume Control Dampers VCD

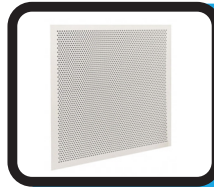


Curtain Fire Dampers FD-C





GRILLES AND REGISTERS



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DIFFUSERS**



**SQUARE & RECTANGULAR
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DIFFUSERS**



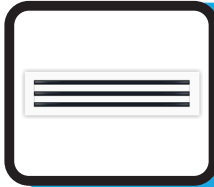
GRAVITY SHUTTERS



**LINEAR BAR
GRILLES®ISTERS**



TRANSFER GRILLES



**Linear Slot
Diffusers**



DISC VALVES



EXTERNAL LOUVERS



SWIRL DIFFUSERS



SAND TRAP LOUVERS



**VOLUME CONTROL
DAMPERS**



JET NOZZLES



**CURTAIN FIRE
DAMPERS**



JET DIFFUSERS



**SMOKE MOTORIZED
DAMPERS**

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