

Air Louvers

Intake/Exhaust Air Louver

Application & Features

- Intake/Exhaust air louvers are designed to pass air through the openings in the buildings exterior walls while keeping out unwanted elements such as water , dirt, debris and other elements.
- It is used in industrial, commercial and domestic applications.
- Rugged assembly provides long term durability.
- Suitable for installation in inlet of fresh air intake ducts, exhaust ducts and external wall openings.
- Rear mounted volume control damper, filters are available as optional.
- Tested by AMCA as per ANSI/AMCA-500L-12 " Laboratory Methods of Testing Louvers for Rating" for the air performance.

Construction Details

- **Frame** : 1.5mm thickness extruded aluminium frame.
- **Blades** : 1.5mm thickness extruded aluminium. Blades are fixed horizontally at 45 degree downward. Downward deflection prevents rain water ingress.
- **Screen** : 7 x 12mm Galvanized steel bird screen (standard)/ Stainless Steel Bird screen (optional).
- **Installation** : Vertically on external wall or direct to duct
- **Shape** : Square or Rectangular
- **Size** : Minimum size - 300 x 300mm
Maximum size - 2000 x 2000mm (single section)
- **Filter** : 25mm and 50mm thickness Aluminium washable filter (optional).
- **Damper** : Galvanized steel volume control damper (optional).
- **Finish** : Electrostatic polyester powder coated RAL9010 finish (standard). Other colors are available as option

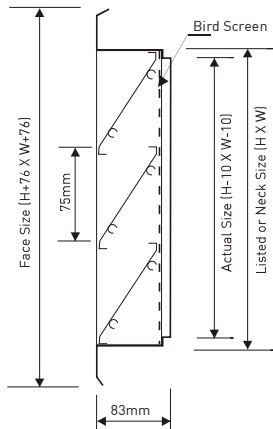


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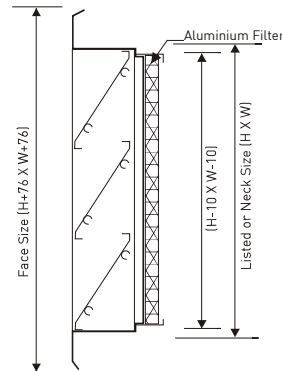
Air Louvers

Intake/Exhaust Air Louver

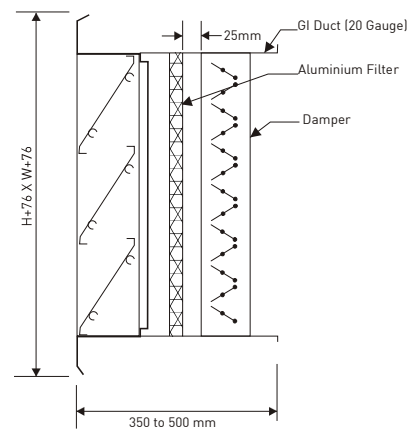
Model: FAL-A
[Standard] Intake/Exhaust
Air Louver



Model: FAL-A+F
Intake/Exhaust Air Louver
with Aluminium Filter

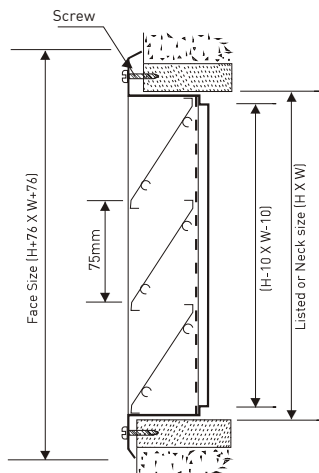


Model: FAL-A+F+D
Intake/Exhaust Air Louver
with Filter and Volume Control Damper

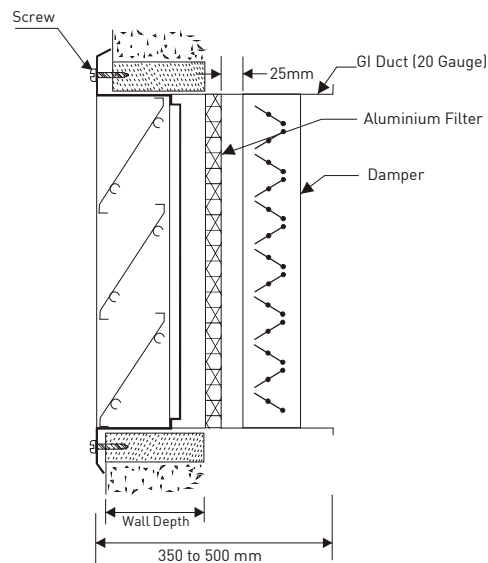


INSTALLATION DETAILS

Intake/Exhaust Air Louver
[FAL-A]



Intake/Exhaust Air Louver
with Filter and Volume Control
Damper [FAL-A+F+D]



*Contact CMS for the details of multi section installation.



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Air Louvers

Intake/Exhaust Air Louver

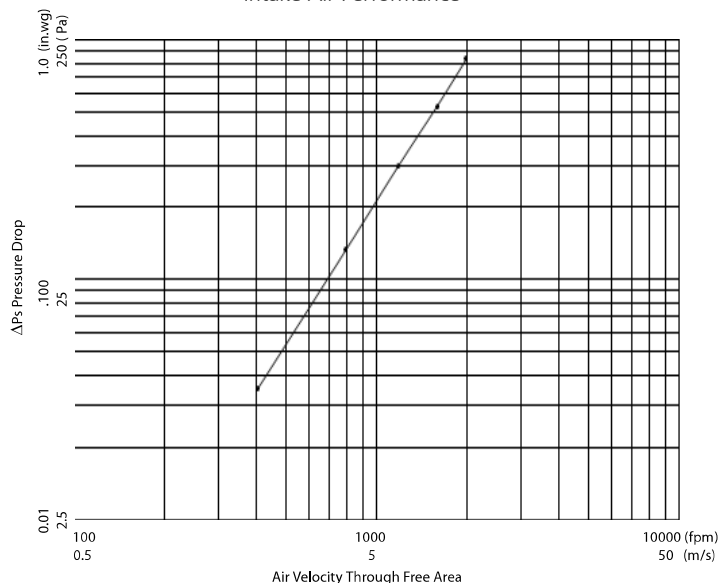
Free Area Chart - Intake/Exhaust Air Louver [FAL-A]:

		Louver Width in Inches (mm)														
		12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
		300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400
Louver Height in Inches (mm)	12	0.27	0.45	0.63	0.81	0.99	1.17	1.35	1.53	1.72	1.90	2.08	2.26	2.44	2.62	2.80
	300	0.03	0.04	0.06	0.08	0.09	0.11	0.13	0.14	0.16	0.18	0.19	0.21	0.23	0.24	0.26
	18	0.45	0.75	1.05	1.35	1.65	1.96	2.26	2.56	2.86	3.16	3.46	3.76	4.06	4.36	4.66
	450	0.04	0.07	0.10	0.13	0.15	0.18	0.21	0.24	0.27	0.29	0.32	0.35	0.38	0.41	0.43
	24	0.63	1.05	1.47	1.90	2.32	2.74	3.16	3.58	4.00	4.42	4.84	5.27	5.69	6.11	6.53
	600	0.06	0.10	0.14	0.18	0.22	0.25	0.29	0.33	0.37	0.41	0.45	0.49	0.53	0.57	0.61
	30	0.81	1.35	1.90	2.44	2.98	3.52	4.06	4.60	5.15	5.69	6.23	6.77	7.31	7.85	8.39
	750	0.08	0.13	0.18	0.23	0.28	0.33	0.38	0.43	0.48	0.53	0.58	0.63	0.68	0.73	0.78
	36	0.99	1.65	2.32	2.98	3.64	4.30	4.96	5.63	6.29	6.95	7.61	8.27	8.94	9.60	10.26
	900	0.09	0.15	0.22	0.28	0.34	0.40	0.46	0.52	0.58	0.65	0.71	0.77	0.83	0.89	0.95
	42	1.17	1.96	2.74	3.52	4.30	5.09	5.87	6.65	7.43	8.21	9.00	9.78	10.56	11.34	12.13
	1050	0.11	0.18	0.25	0.33	0.40	0.47	0.55	0.62	0.69	0.76	0.84	0.91	0.98	1.05	1.13
	48	1.35	2.26	3.16	4.06	4.96	5.87	6.77	7.67	8.58	9.48	10.38	11.28	12.19	13.09	13.99
	1200	0.13	0.21	0.29	0.38	0.46	0.55	0.63	0.71	0.80	0.88	0.96	1.05	1.13	1.22	1.30
	54	1.53	2.56	3.58	4.60	5.63	6.65	7.67	8.70	9.72	10.74	11.76	12.79	13.81	14.83	15.86
	1350	0.14	0.24	0.33	0.43	0.52	0.62	0.71	0.81	0.90	1.00	1.09	1.19	1.28	1.38	1.47
	60	1.72	2.86	4.00	5.15	6.29	7.43	8.58	9.72	10.86	12.01	13.15	14.29	15.44	16.58	17.72
	1500	0.16	0.27	0.37	0.48	0.58	0.69	0.80	0.90	1.01	1.12	1.22	1.33	1.43	1.54	1.65
	66	1.90	3.16	4.42	5.69	6.95	8.21	9.48	10.74	12.01	13.27	14.53	15.80	17.06	18.32	19.59
	1650	0.18	0.29	0.41	0.53	0.65	0.76	0.88	1.00	1.12	1.23	1.35	1.47	1.58	1.70	1.82
	72	2.08	3.46	4.84	6.23	7.61	9.00	10.38	11.76	13.15	14.53	15.92	17.30	18.69	20.07	21.45
	1800	0.19	0.32	0.45	0.58	0.71	0.84	0.96	1.09	1.22	1.35	1.48	1.61	1.74	1.86	1.99
	78	2.26	3.76	5.27	6.77	8.27	9.78	11.28	12.79	14.29	15.80	17.30	18.81	20.31	21.81	23.32
	1950	0.21	0.35	0.49	0.63	0.77	0.91	1.05	1.19	1.33	1.47	1.61	1.75	1.89	2.03	2.17
	84	2.44	4.06	5.69	7.31	8.94	10.56	12.19	13.81	15.44	17.06	18.69	20.31	21.93	23.56	25.18
	2100	0.23	0.38	0.53	0.68	0.83	0.98	1.13	1.28	1.43	1.58	1.74	1.89	2.04	2.19	2.34
	90	2.62	4.36	6.11	7.85	9.60	11.34	13.09	14.83	16.58	18.32	20.07	21.81	23.56	25.30	27.05
	2250	0.24	0.41	0.57	0.73	0.89	1.05	1.22	1.38	1.54	1.70	1.86	2.03	2.19	2.35	2.51
	96	2.80	4.66	6.53	8.39	10.26	12.13	13.99	15.86	17.72	19.59	21.45	23.32	25.18	27.05	28.92
	2400	0.26	0.43	0.61	0.78	0.95	1.13	1.30	1.47	1.65	1.82	1.99	2.17	2.34	2.51	2.69

Neck Width = outer width -76mm

Neck Height = Outer Height -76mm

Intake Air Performance



Test Results			
Free Area Velocity		Pressure Drop	
fpm	m/s	inch.wg	Pa
404	2.02	0.035	9
791	3.96	0.133	33
1181	5.91	0.299	75
1587	7.94	0.531	133
1979	9.9	0.833	208

AMCA Standard 500-L Intake Test Figure 5.5
setup for size - 48" x 48" (outer dimension)
Data is corrected to standard air density

Selection Example:

Given:

Airflow: 4400cfm

Free area velocity : 600fpm (Assumed)

Calculation:

$$\begin{aligned} \text{Free Area} &= \text{Airflow} / \text{louver free area velocity} \\ &= 4400 / 600 \\ &= 7.33 \text{ ft}^2 \end{aligned}$$

From Free Area Chart, selected size of the louver is 48" X 48"

From the graph, Louver pressure drop = 0.075 in.wg.

If the required Free Area is not available in the chart then please apply the following formula,

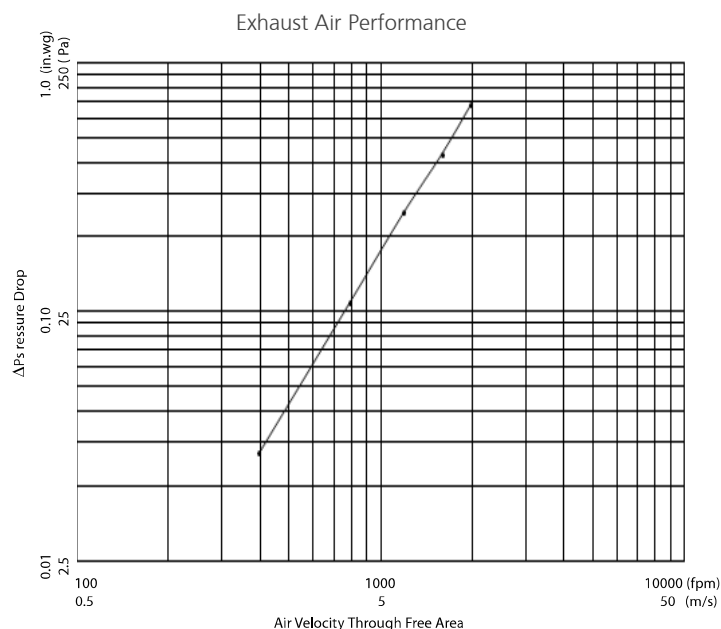
$$\text{Total Louver Neck Area} = \text{Free Area} / 0.48$$



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Test Results			
Free Area Velocity		Pressure Drop	
fpm	m/s	inch.wg	Pa
397	1.99	0.027	7
790	3.95	0.109	27
1187	5.94	0.25	63
1586	7.93	0.43	108
1980	9.9	0.682	171

AMCA Standard 500-L Intake Test Figure 5.5
setup for size - 48" x 48" (outer dimension)
Data is corrected to standard air density

Selection Example:

Given:

Airflow: 4400cfm

Free area velocity : 600fpm (Assumed)

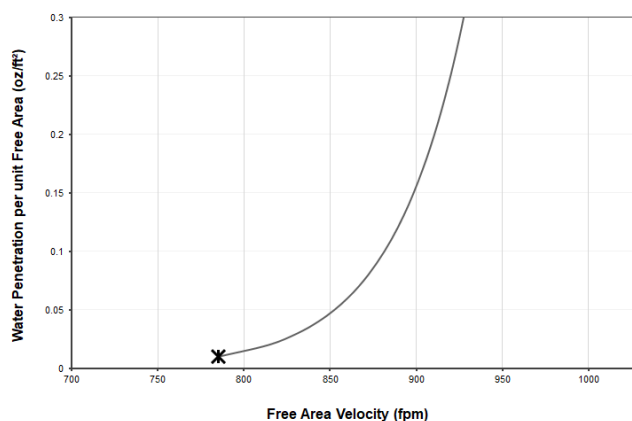
Calculation:

$$\begin{aligned} \text{Free Area} &= \text{Airflow} / \text{louver free area velocity} \\ &= 4400 / 600 \\ &= 7.33 \text{ft}^2 \end{aligned}$$

From Free Area Chart, selected size of the louver is 48" X 48"

From the graph, Louver pressure drop = 0.062 in.wg

Water Penetration Graph [Intake/Exhaust]



Beginning of water penetration @ 787.1fpm

Test Results			
Free Area Velocity		Pressure Drop	
fpm	m/s	oz/ft²	gram/m²
690	3.45	0.001	0.31
736	3.68	0.003	0.92
785	3.93	0.013	3.97
836	4.18	0.028	8.54

Beginning of water penetration as per AMCA publication 511 section 8.3.2
based on AMCA measure free area is 787.1 fpm
Tested with AMCA standard 500-L-07 Water Penetration



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