

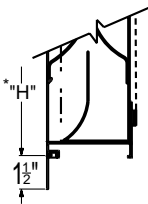
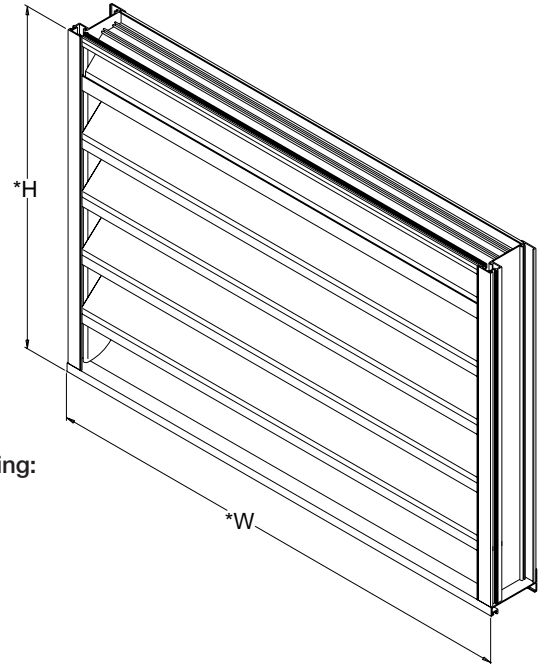
Application and Design

SEH-401's a weather louver designed to protect air intake and exhaust openings in building exterior walls. Design incorporates drainable head, Chevron style blades, and high free area to provide maximum resistance to rain and weather while providing minimum resistance to airflow. The SEH-401 is an extremely efficient louver with **AMCA LICENSED PERFORMANCE DATA** enabling designers to select and apply with confidence.



Standard Construction

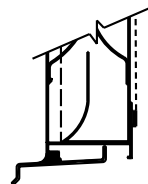
- Frame:** Heavy gauge 6063T5 extruded aluminum, 4" x .081" nominal dimensions
- Blades:** Chevron style, 6063T5 extruded aluminum, .081" nominal wall thickness, positioned on approximately 4" centers
- Birdscreen:** 3/4" x .051" flattened expanded aluminum in removable frame. Screen is mounted on inside (rear)
- Finish:** Mill
- Minimum Size:** 12"W x 12"H
- Maximum Size:** 120"W x 120"H (see page 4)



OPTIONAL FLANGE

Options (at additional cost)

- Flanged frame
- Extended sill
- A variety of bird and insect screens
- A variety of architectural finishes including:
 - Clear anodize
 - Integral color anodize
 - Baked enamel
 - Kynar
- Hinged frame
- Security bars
- Filter racks



OPTIONAL EXTENDED SILL

* W & H Dimensions furnished approximately 1/4" under size.

Quantity	Size		
	W Width	H Height	
Project			Location
Contractor			Design Specifier

SEH-401 Louver Performance Data

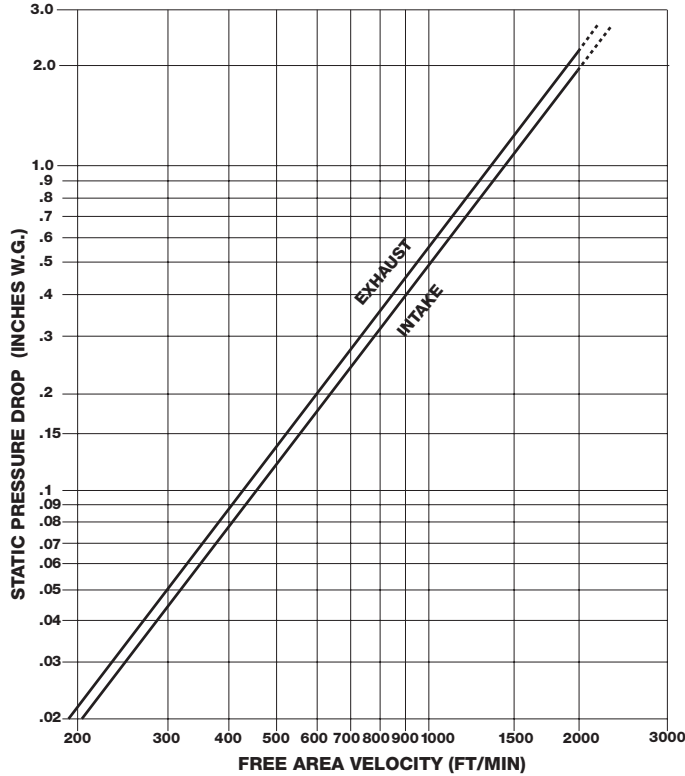
**AMCA
CERTIFIED
RATINGS**

**WATER
PENETRATION
AIR
PERFORMANCE**

**AIR
MOVEMENT
AND CONTROL
ASSOCIATION, INC.**

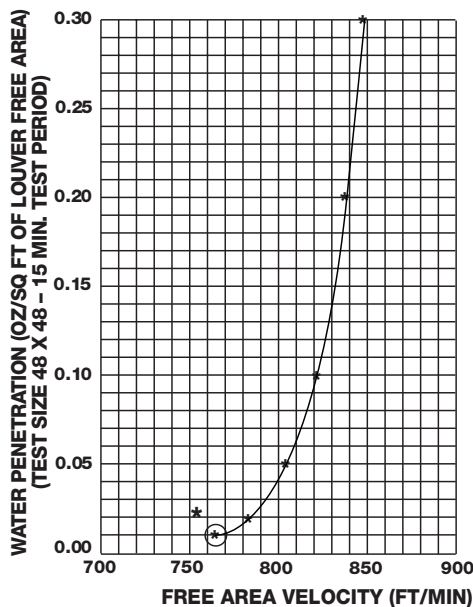
Greenheck certifies that the SEH-401 louvers shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and water penetration ratings.

Airflow Resistance (Standard Air - .075 lb/ft³)



Model SEH-401 resistance to airflow (pressure drop) varies depending on louver application (air intake or air exhaust). Free area velocities (shown) are higher than average velocity through the overall louver size. See louver selection information.

Water Penetration (Standard Air - .075 lb/ft³)



The AMCA Water Penetration Test provides a method for comparing various louver models and designs as to their efficiency in resisting the penetration of rainfall under specific laboratory test conditions. The point of zero water penetration is defined as that velocity where the water penetration curve projects through .01 oz. of water (penetration) per sq. ft. of louver free area. ***The beginning point of water penetration for Model SEH-401 is 765 fpm free area velocity.** These performance ratings do not guarantee a louver to be weatherproof or stormproof and should be used in combination with other factors including good engineering judgement in selecting louvers.

Louver Selection and Application

Application of any louver involves selecting an airflow velocity through the louver free area (free area velocity in fpm) that produces an acceptable pressure drop and for intake applications minimizes carry through of normally encountered rain water.

No louver manufacturer warrants their louver to prevent water penetration under all possible combinations of wind and rain. Water penetration through Model SEH-401 begins at 765 fpm free area velocity. Intake air louver selection using free area velocity below 765 fpm is recommended. Louver selection involves the following two steps, and depending on given conditions, either step may come first.

Select Free Area Velocity:

Using the **Airflow Resistance Chart**, select a free area velocity that produces an acceptable pressure drop with minimal water penetration. (Water penetration need not be considered when selecting exhaust louvers.)

Determine Louver Free Area:

Using the free area velocity from previous step and total cfm, determine Louver Free Area required. Using **Louver Free Area Chart**, select a louver with the required free area. If louver size is given, determine free area from chart and work backwards to determine maximum airflow. See examples below.

Free Area Chart

Louver Height Inches	Louver Width in Inches																		Louver Height Inches	
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114		120
12	0.18	0.3	0.41	0.53	0.64	0.76	0.87	0.99	1.07	1.19	1.3	1.42	1.53	1.65	1.76	1.87	1.99	2.1	2.19	12
18	0.33	0.53	0.74	0.95	1.16	1.36	1.57	1.78	1.93	2.14	2.35	2.55	2.76	2.97	3.17	3.38	3.59	3.79	3.95	18
24	0.52	0.84	1.17	1.5	1.83	2.15	2.48	2.81	3.05	3.38	3.7	4.03	4.36	4.68	5.01	5.34	5.66	5.99	6.24	24
30	0.91	1.49	2.07	2.64	3.22	3.8	4.37	4.95	5.38	5.96	6.54	7.11	7.69	8.27	8.84	9.42	10	10.57	11.01	30
36	0.79	1.29	1.79	2.29	2.78	3.28	3.78	4.28	4.65	5.15	5.65	6.15	6.65	7.15	7.65	8.15	8.64	9.14	9.52	36
42	0.94	1.54	2.14	2.73	3.33	3.93	4.52	5.12	5.56	6.16	6.76	7.35	7.95	8.55	9.14	9.74	10.33	10.93	11.38	42
48	1.08	1.76	2.44	3.12	3.80	4.48	5.16	5.84	6.35	7.04	7.72	8.4	9.08	9.76	10.44	11.12	11.8	12.48	12.99	48
54	1.28	2.09	2.9	3.71	4.52	5.33	6.14	6.94	7.55	8.36	9.17	9.98	10.79	11.6	12.41	13.21	14.02	14.83	15.44	54
60	1.4	2.28	3.17	4.05	4.94	5.82	6.70	7.59	8.25	9.13	10.02	10.9	11.79	12.67	13.55	14.44	15.32	16.21	16.87	60
66	1.56	2.54	3.52	4.51	5.49	6.47	7.46	8.44	9.18	10.16	11.14	12.12	13.11	14.09	15.07	16.06	17.04	18.02	18.76	66
72	1.71	2.79	3.86	4.94	6.02	7.1	8.17	9.25	10.06	11.14	12.22	13.29	14.37	15.45	16.53	17.61	18.68	19.76	20.57	72
78	1.83	2.98	4.14	5.29	6.45	7.6	8.76	9.91	10.78	11.93	13.09	14.24	15.4	16.55	17.71	18.86	20.02	21.17	22.04	78
84	2.04	3.34	4.63	5.92	7.21	8.5	9.79	11.08	12.05	13.34	14.63	15.92	17.21	18.51	19.8	21.09	22.38	23.67	24.64	84
90	2.15	3.51	4.87	6.22	7.58	8.94	10.3	11.66	12.67	14.03	15.39	16.75	18.11	19.46	20.82	22.18	23.54	24.9	25.91	90
96	2.32	3.79	5.26	6.73	8.19	9.66	11.13	12.6	13.7	15.16	16.63	18.1	19.57	21.03	22.5	23.97	25.44	26.9	28	96
102	2.47	4.03	5.6	7.05	8.71	10.27	11.83	13.39	14.56	16.19	17.68	19.24	20.8	22.36	23.92	25.48	27.04	28.6	29.77	102
108	2.6	4.24	5.87	7.51	9.15	10.79	12.43	14.07	15.3	16.94	18.58	20.22	21.86	23.5	25.14	26.78	28.41	30.05	31.28	108
114	2.76	4.49	6.23	7.97	9.71	11.45	13.19	14.93	16.24	17.98	19.72	21.46	23.2	24.94	26.68	28.42	30.16	31.9	33.2	114
120	2.9	4.73	6.56	8.4	10.23	12.06	13.89	15.72	17.1	18.93	20.76	22.59	24.43	26.26	28.09	29.92	31.75	33.58	34.96	120

Louver Free Area in Square Feet

SEH-401 Selection and Examples

Example 1:

Airflow given as 6500 cfm – select louver size.

- A. Determine louver free area by dividing airflow by free area velocity (do not exceed 765 fpm on intake louver application).

$$\frac{6500 \text{ cfm}}{\text{Airflow}} \div \frac{765 \text{ fpm}}{\text{Free Area Velocity}} = \frac{8.49 \text{ ft.}^2}{\text{Required Louver Free Area}}$$

- B. Select a louver with at least the required louver free area from **Free Area Chart** above.

$$\frac{42'' \text{ W} \times 84'' \text{ H}}{8.49 \text{ ft.}^2 \text{ free area}}$$

$$\frac{765 \text{ fpm free area velocity (6500 cfm} \div 8.49 \text{ ft.}^2 \text{ F.A.)}}{\text{Free Area Velocity}}$$

(Other selections available – See **Free Area Chart** above.)

- C. Check the pressure drop of the selected louver at the given airflow (**Airflow Resistance Chart** on Page 2).

$$\Delta P \text{ at } \frac{765 \text{ fpm}}{\text{Free Area Velocity}} = \frac{0.27 \text{ in. w.g.}}{\text{Pressure Drop}}$$

Example 2:

Louver size given as 48 x 48 – determine maximum airflow.

- A. Use **Free Area Chart** to determine Free Area = 5.33 ft.²

- B. Multiply Free Area x Free Area Velocity (Do not exceed 765 fpm on intake louver applications).

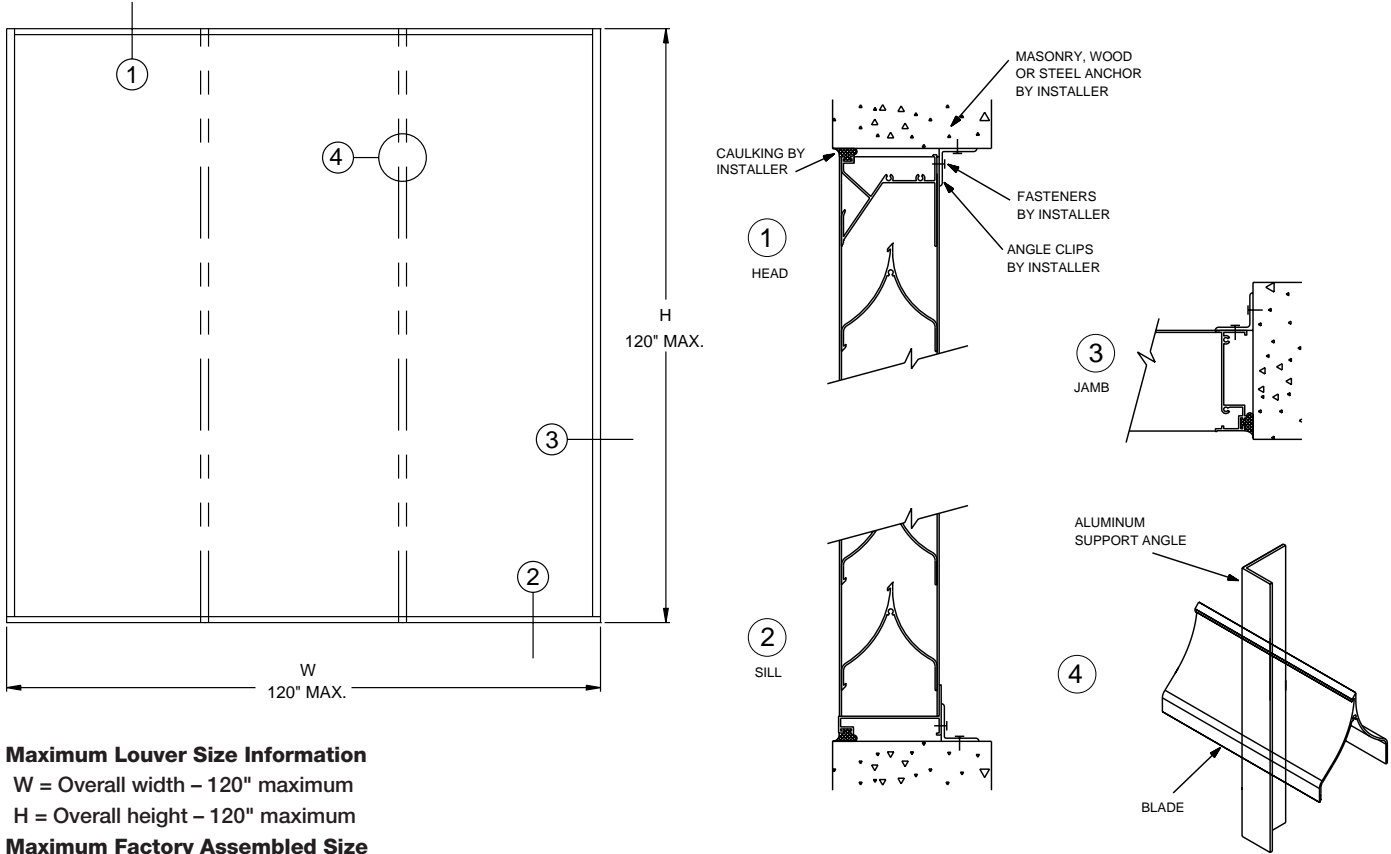
$$\frac{5.33 \text{ ft.}^2 \times 765 \text{ fpm}}{\text{Free Area} \times \text{Free Area Velocity}} = \frac{4,077 \text{ cfm}}{\text{Maximum Airflow}}$$

- C. Check the pressure drop of the selected louver at the given airflow (**Airflow Resistance Chart** on Page 2).

$$\Delta P \text{ at } \frac{765 \text{ fpm}}{\text{Free Area Velocity}} = \frac{0.28 \text{ in. w.g.}}{\text{Pressure Drop}}$$

Maximum Size and Installation Information

Because of Model SEH-401's drainable head design, both width and height are limited to a maximum of 120". Shipping and handling restraints further dictate that maximum section sizes be limited to 120"W x 84"H or 84"W x 120"H. (Louvers with other than mill finish may require smaller sections.) Factory-assembled louver sections are designed to withstand wind loadings of 25 pounds per square foot (100 mph wind equivalent), however, louver frames and hidden mullions require bracing or support from the building structure to provide overall structural integrity. If larger louver assemblies are to be field erected, section joints also require bracing or support from the building structure. Angles, clips, bolts, and other fasteners and installation hardware are not provided with the louvers and must be supplied by the installing contractor. Details shown are general in nature. Additional information on louver installation may be found in AMCA Publication #501, Louver Application Manual.



Maximum Louver Size Information

W = Overall width - 120" maximum

H = Overall height - 120" maximum

Maximum Factory Assembled Size

120"W x 84"H or 84"W x 120"H

SEH-401 Specifications

Louvers meeting the following specifications shall be furnished and installed where shown on the plans and/or as described in schedules. Louvers shall be stationary type with Chevron style blades in a 4" louver frame.

The head member shall incorporate an integral gutter and each jamb shall incorporate an integral downspout so water drains to the head end, then down the downspouts and out at the louver sill.

Each factory-assembled louver section shall be designed to withstand wind loadings of 25 pounds per square foot (100 mph wind equivalent). Louvers too large for complete factory assembly shall be built up by the installing contractor from factory-assembled louver sections. Louver frames, mullions, and section joints shall be adequately supported from the building structure to withstand this same wind loading.

Louver performance data shall be licensed under the AMCA Certified Ratings Program and shall bear the AMCA Certified Ratings Seal. This certified performance data shall include airflow pressure loss and water penetration, and shall demonstrate performance equal to or better than the Greenheck model specified.

Louvers shall be Greenheck Model SEH-401 sightproof stationary type fabricated from 6063T5 aluminum extrusions of .081" nominal wall thickness. Blades shall be positioned approximately on 4" centers. Each louver shall be equipped with a framed, removable, rear-mounted screen of 3/4" x .051" expanded, flattened aluminum.

Specifier select one of the following finish specifications:

Louvers shall be supplied with standard mill finish.

Louvers shall be supplied with a baked enamel finish applied after a thorough cleaning and preparation of the metal surface. A total dry film thickness of approximately 1.2 mils shall be provided. Color shall be (specify color from standard color chart).

Louvers shall be supplied with a Kynar finish applied following a thorough cleaning and pretreatment of the metal surface. Dry film thickness of the Kynar shall be approximately 1.2 mils after baking at 450°F. Color shall be (specify color from standard color chart).