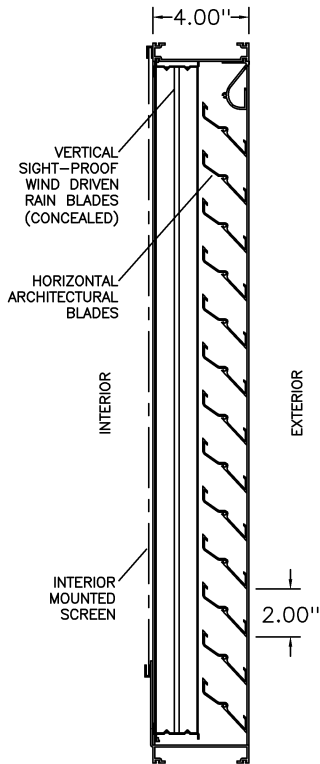
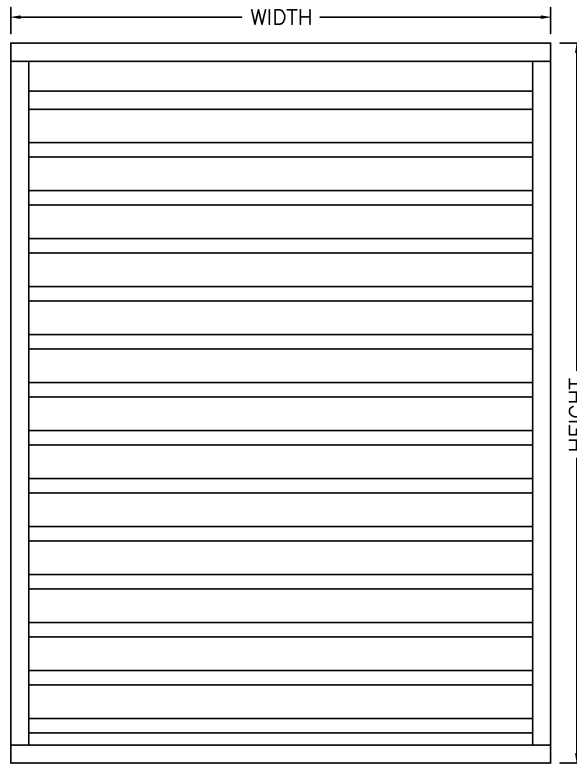


# E4WH - 4" DEEP 45 DEGREE WIND DRIVEN RAIN BLADE EXTRUDED ALUMINUM STATIONARY LOUVER



SECTION VIEW



ELEVATION VIEW

BLADE - 0.063" THICKNESS TYPE 6063-T5 EXTRUDED ALUMINUM  
 FRAME - 0.081" THICKNESS TYPE 6063-T5 EXTRUDED ALUMINUM  
 DESIGNED FOR 100 MPH WIND LOAD  
 SIZES 12" WIDE X 12" HIGH UP TO UNLIMITED SIZE AVAILABLE

OPTIONS:  
 MOUNTING FOR VARIOUS OPENING TYPES (SEE FRAME STYLES BELOW)  
 ARCHITECTURAL SHAPES (SEE SPECIAL SHAPES TECH SHEET)  
 HIGHER WIND LOAD RATINGS  
 ARCHITECTURAL FINISHES  
 VARIOUS SCREENS

\* SEE MOUNTING OPTIONS TECHNICAL SHEET FOR MORE FRAME STYLES:  
 1. J-CHANNEL FOR SIDING OR STUCCO  
 2. G-CHANNEL FOR GLAZING INTO STOREFRONT OR CURTAINWALL

CONSTRUCTION	FRAME STYLE *	STIFFENER	VERTICAL MULLION (MULTIPLE PANELS WIDE)	HORIZONTAL MULLION (MULTIPLE PANELS HIGH)
STANDARD	 CHANNEL "C" FRAME	 STIFFENER (EVERY 48" WIDTH MAX) BLADE STIFFENER	 EXPOSED	 EXPOSED
OPTIONAL	 FLANGE "F" FRAME	 STIFFENER (SIZE TO MEET WIND LOADS) BLADE STIFFENER	 HIDDEN	 HIDDEN

## ARCHITECTURAL L · O · U · V · E · R · S

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PROJECT

CONTRACTOR

ARCHITECT

DRAWN BY:  
JRR

DATE:  
08/2007

DRAWING TYPE:  
TECHNICAL SHEET

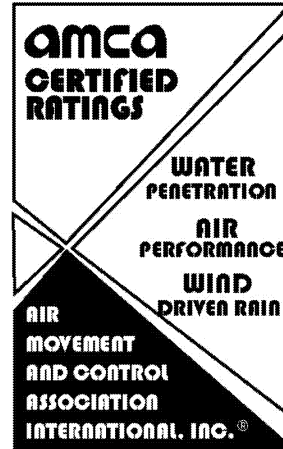
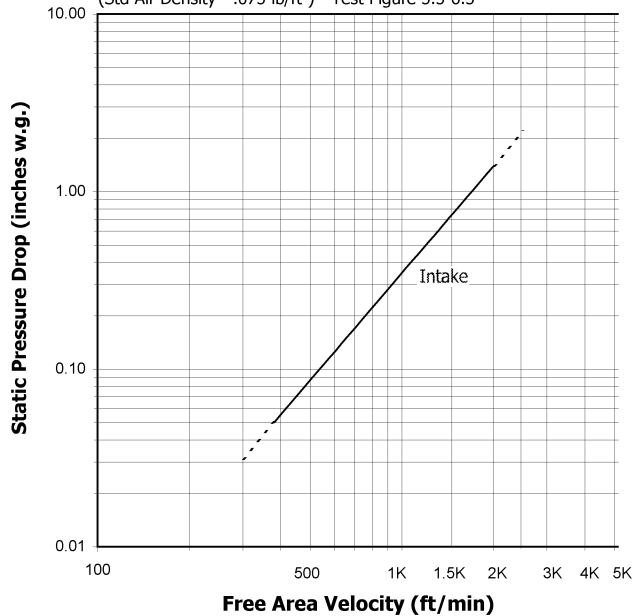
DRAWING TITLE:  
E4WH



The Architectural Louvers Model E4WH is tested in accordance with AMCA 500-L Laboratory Methods of Testing Air Louvers for Rating. The data presented are the results of these tests. Tested louver size is 48" wide x 48" high (unless noted otherwise) and does not include the effects of bird screen.

**Airflow Resistance**

(Std Air Density - .075 lb/ft<sup>3</sup>) - Test Figure 5.5-6.5



Architectural Louvers certifies that model E4WH louver shown herein is 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 ratings, water penetration ratings, and wind driven rain ratings only.

Model: E4WH resistance to airflow  
Free area velocities (shown left) are higher than average core, face or duct velocity. See louver application information.

Water Penetration Test per AMCA Standard 500-L-99, Figure 5.6-6.3 Setup Performance.  
First point of water > **1250** feet per minute free area velocity (upper limits of the testing).

Wind Driven Rain Test per AMCA Standard 500-L-99, Figure 5.11 Setup Performance.  
Test Louver Size 40.87" W x 40.87" H (1m x 1m Core Size).

	Wind Velocity (mph)	Rain Fall Rate (in. / hour)	Core Velocity (fpm)	Airflow (cfm)	Louver Free Area Velocity (fpm)	Water Penetration Effectiveness (Percentage)	Water Penetration Classification Rating
29 MPH Wind Velocity and 3" Rainfall Rate	29	3	0	0	0	100.0	A
	29	3	132	1417	242	100.0	A
	29	3	197	2117	362	100.0	A
	29	3	287	3092	528	100.0	A
	29	3	380	4092	699	100.0	A
	29	3	472	5083	868	100.0	A
	29	3	587	6317	1079	100.0	A
	<b>29</b>	<b>3</b>	<b>690</b>	7323	<b>1251</b>	<b>100.0</b>	<b>A</b>
50 MPH Wind Velocity and 8" Rainfall Rate	50	8	0	0	0	100.0	A
	50	8	96	1028	176	100.0	A
	50	8	194	2093	358	100.0	A
	50	8	284	3055	522	100.0	A
	50	8	400	4312	737	100.0	A
	50	8	480	5341	912	100.0	A
	50	8	573	6145	1050	99.9	A
	<b>50</b>	<b>8</b>	<b>695</b>	7311	<b>1249</b>	<b>99.2</b>	<b>A</b>

The discharge loss coefficient class for louver E4WH is 3. The higher the coefficient, the lower the resistance to airflow.

Class	1	2	3	4
Discharge Loss Coefficient	.4 and Above	.3 to .399	.2 to .299	.199 and below



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 and minimizes carry-over of normally occurring rain. Architectural Louvers does not warrant our louvers to prevent water penetration under all combinations of wind and rain. 99% water resistance effectiveness during testing through Model E4WH ends at 1250 fpm free area velocity. Louver selection using a free area velocity below 1250 fpm is recommended. Louver selection involves the following steps, and depending on the information provided, either step may come first.

**Select Free Area Velocity - Fan Forced Intake:**

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

**Determine Louver Free Area:**

Using the free area velocity from previous step and total cfm, determine the 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 (ft<sup>2</sup>)

		Louver Width (Inches)							
		12	24	36	48	60	72	84	96
Louver Height (Inches)	12	0.34	0.74	1.13	1.52	1.92	2.26	2.65	3.05
	24	0.84	1.80	2.76	3.71	4.67	5.51	6.47	7.43
	36	1.33	2.86	4.38	5.90	7.43	8.76	10.28	11.81
	48	1.83	3.92	6.00	<b>8.09</b>	10.18	12.01	14.10	16.18
	60	2.32	4.97	7.63	10.28	12.93	15.26	17.91	20.56
	72	2.82	6.03	9.25	12.47	15.69	18.51	21.72	24.94
	84	3.31	7.09	10.88	14.66	18.44	21.75	25.54	29.32
	96	3.80	8.15	12.50	16.85	21.20	25.00	29.35	33.70

**Louver Selection Examples - Fan Forced Intake:**

**Example 1:**

Airflow given as 6000 cfm – select louver size.

A. Determine louver free area by dividing airflow by free area velocity (do not exceed 1250 fpm on intake louver applications).

$$\begin{aligned} \text{cfm} / \text{fpm} &= \text{ft}^2 \\ 6000 / 1250 &= 4.8 \end{aligned}$$

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

Width	x	Height	Free Area from Chart
48	x	36	5.90

(Other selections available – See Free Area Chart above)

C. Calculate Free Area Velocity

$$\begin{aligned} \text{fpm} &= \text{cfm} / \text{ft}^2 \text{ free area of louver} \\ 1017 &= 6000 / 5.9 \end{aligned}$$

D. Check the pressure drop of the selected louver at the calculated airflow (Airflow Resistance Chart on Page 2).

in w.g. = 0.359 at 1017 fpm free area velocity

**Example 2:**

Louver size given as 96 W x 48 H – determine maximum airflow.

A. Use Free Area Chart to obtain ft<sup>2</sup> for given size

Free Area = 16.18 sq ft

B. Multiply Free Area x Free Area Velocity (Do not exceed 1250 fpm on intake louver applications).

$$\begin{aligned} \text{ft}^2 \times \text{fpm} &= \text{cfm} \\ 16.18 \times 1250 &= 20230 \end{aligned}$$

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

in w.g. = 0.543 at 1250 fpm free area velocity