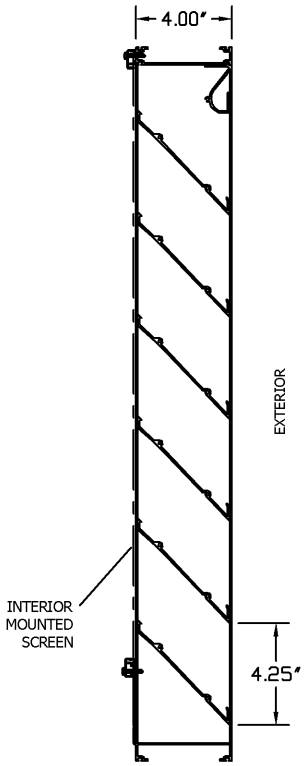
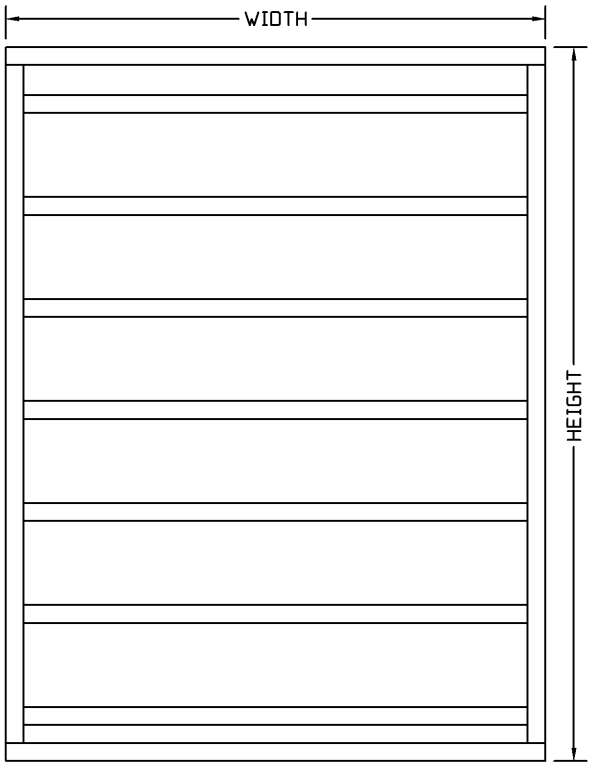
E4WS - 4" DEEP 45 DEGREE WIND DRIVEN RAIN BLADE EXTRUDED ALUMINUM STATIONARY LOUVER



SECTION VIEW



ELEVATION VIEW

BLADE - 0.081" THICKNESS TYPE 6063-T5 EXTRUDED ALUMINUM

FRAME - 0.081" THICKNESS TYPE 6063-T5 EXTRUDED ALUMINUM

WIND LOAD - DESIGNED FOR 30 PSF LOAD

MINIMUM SIZE - 12" WIDE X 12" HIGH

MAXIMUM SIZE - UNLIMITED WITH JOINED PANELS

MAXIMUM PANEL SIZE: 60" WIDE X 120" HIGH OR 120" WIDE X 60" HIGH

OPTIONS:

MOUNTING FOR VARIOUS OPENING TYPES (SEE FRAME STYLES BELOW)

ARCHITECTURAL SHAPES (SEE SPECIAL SHAPES TECH SHEET)

HIGHER WIND LOAD RATINGS

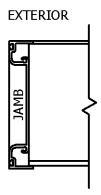
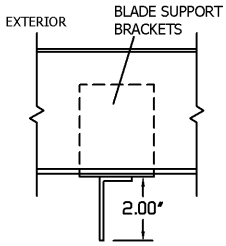
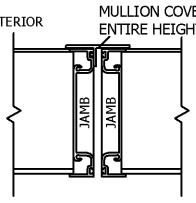
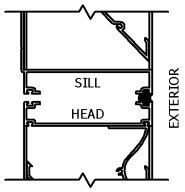
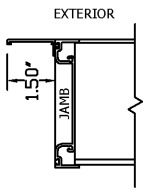
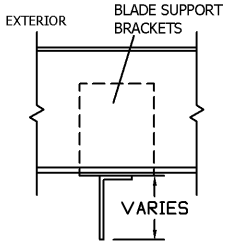
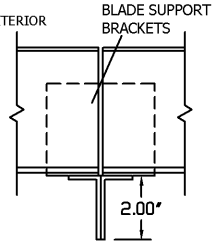
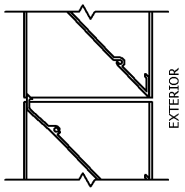
ARCHITECTURAL FINISHES

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	 BLADE STIFFENER	 EXPOSED	
OPTIONAL	 FLANGE "F" FRAME	 BLADE STIFFENER	 HIDDEN	 HIDDEN

ARCHITECTURAL LOUVERS

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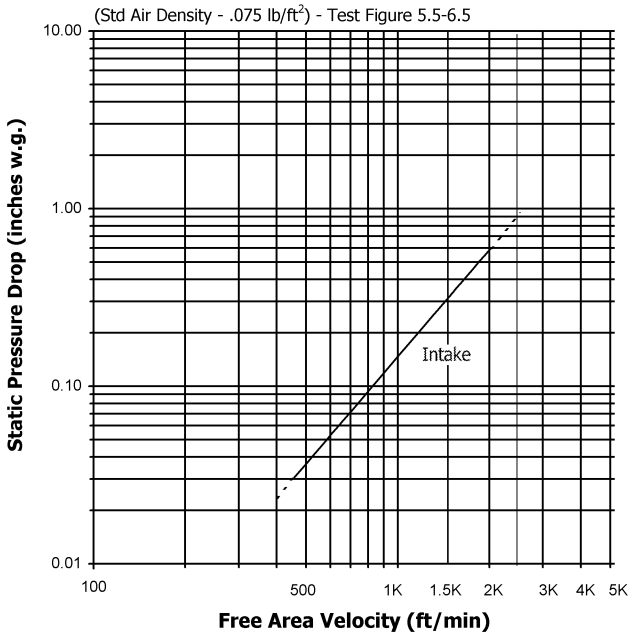
PROJECT			
CONTRACTOR			
ARCHITECT			
DRAWN BY: JRR	DATE: 09/2020	DRAWING TYPE: TECHNICAL SHEET	DRAWING TITLE: E4WS

MODEL: E4WS Louver Performance Data

The Architectural Louvers Model E4WS 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^2) - Test Figure 5.5-6.5



Model: E4WS resistance to airflow
Free area velocities (shown left) are higher than average core, face or duct velocity. See louver application information.

Architectural Louvers certifies that model E4WS 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.

Water Penetration Test per AMCA Standard 500-L-99, Figure 5.6-6.3 Setup Performance.
First point of water penetration is **930** feet per minute free area velocity.

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).

29 MPH Wind Velocity and 3" Rainfall Rate

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	3	0	0	0	96.3	B
29	3	118	1268	207	95.7	B
29	**3**	**197**	**2120**	**346**	**95.0**	**B**
29	3	282	2038	332	94.5	C
29	3	389	4189	683	93.5	C
29	3	471	5076	828	92.3	C
29	3	584	6283	1025	91.3	C
29	3	687	7395	1206	90.3	C

The discharge loss coefficient class for louver E4WS is 2. 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

MODEL: E4WS Louver Application Guide

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 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. 95% water resistance effectiveness during testing through Model E4WS ends at 346 fpm free area velocity. Louver selection using a free area velocity below 346 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^2)

Louver Height (Inches) \ Louver Width (Inches)	12	24	36	48	60	72	84	96
12	0.38	0.82	1.26	1.70	2.13	2.52	2.95	3.39
24	0.89	1.90	2.92	3.94	4.95	5.84	6.86	7.87
36	1.52	3.25	4.99	6.72	8.46	9.97	11.71	13.44
48	2.02	4.34	6.65	**8.96**	11.27	13.30	15.61	17.92
60	2.53	5.42	8.31	11.20	14.09	16.62	19.51	22.41
72	3.04	6.50	9.97	13.44	16.91	19.95	23.42	26.89
84	3.54	7.59	11.64	15.68	19.73	23.27	27.32	31.37
96	4.17	8.94	13.70	18.47	23.24	27.41	32.17	36.94

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 346 fpm on intake louver applications).

cfm /	fpm	= ft^2
6000 /	346	= 17.34

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 96	18.47

(Other selections available – See Free Area Chart above)

C. Calculate Free Area Velocity

fpm = cfm / ft^2 free area of louver
325 = 6000 / 18.47

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

in w.g. = 0.015 at 325 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^2 for given size

Free Area = 17.92 sq ft

B. Multiply Free Area x Free Area Velocity (Do not exceed 346 fpm on intake louver applications).

ft^2 x	fpm	= cfm
17.92 x	346	= 6202

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

in w.g. = 0.018 at 346 fpm free area velocity