

Vertical Wind Driven Rain/Hurricane Louver

6" WIND DRIVEN RAIN FIXED LOUVER

MIAMI-DADE COUNTY, FLORIDA NOTICE OF ACCEPTANCE NUMBER: **09-0203-10** (Expires: August 18, 2010)
 FLORIDA BUILDING CODE PRODUCT APPROVAL #: FL5778

APPLICATION AND FEATURES

The MODEL VV-10-D is a vertical blade hurricane resistant louver designed to protect the outside opening in building exterior walls. These louvers may be used for exhaust or intake air.

Standard Construction:

Frame: .125 Extruded Aluminum, 6" Deep

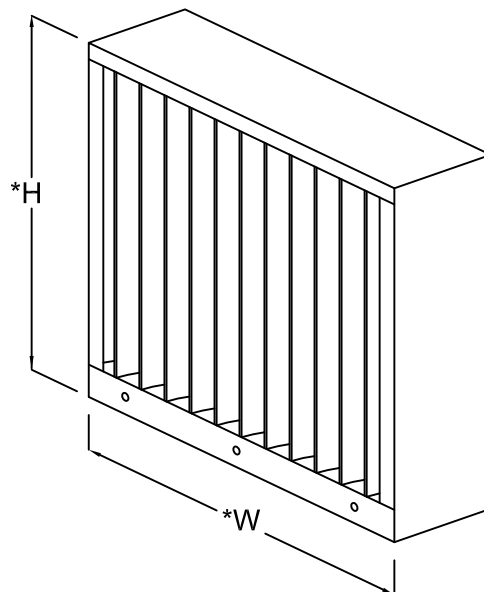
Blade: .081 Extruded Aluminum

Birdscreen: 3/4" x .051" Flattened Aluminum in removable frame. Screen is mounted as standard on inside (rear) as looking from exterior of building.

Finish: Mill Aluminum (Std.)

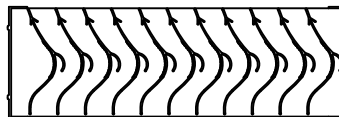
Minimum Size: 12 x12

Maximum Single Section: 48"w x 96"h



Finishes:

- Clear Anodize
- Integral Color Anodize
- Baked Powder Polyester
- Baked Powder Fluoropolymer 70%
- Baked Powder Clear Coat

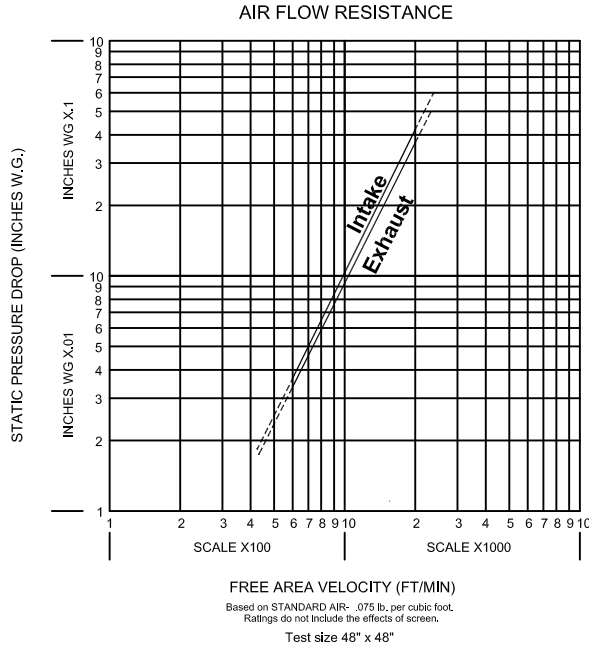


→ ← 1.50"
 TOP VIEW

*Width and Height dimensions are approximately 1/4" under listed size.

Job Name:	<input type="checkbox"/> MODEL VV-10-D		
Location:			
Architect:	DRAWN BY: CLJ	DATE: January 2004	REV. DATE: October 2007
Engineer:	REV. NO. 4	APPROVED BY: BGT	DWG. NO.: E-9c
Contractor:			

Model VV-10-D Louver Performance Data



United Enertech certifies that the VV-10-D 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 rating seal applies to air performance ratings and wind driven rain ratings.

Wind Driven Rain Performance -AMCA 500-L-

Test size 1m x 1m(39"x39")core

75 mm/h (3in/h) Rainfall & 13 m/s (29 mph) Wind Velocity		
Ventilation Air Core Velocity m/s (fpm)	Water Penetration Effectiveness %	*Water Penetration Classification
0.0 (0)	100.0	A
0.5 (98)	100.0	A
1.0 (197)	100.0	A
1.5 (295)	100.0	A
2.0 (394)	100.0	A
2.5 (492)	100.0	A
3.0 (591)	100.0	A
3.5 (689)	100.0	A
4.0 (787)	100.0	A
4.5 (886)	100.0	A
5.0 (984)	100.0	A

*AMCA Classes for maximum allowable water penetrations

Wind Driven Rain Penetration Classes	
Class	Effectiveness
A	1 to 0.99
B	0.989 to 0.95
C	0.949 to 0.80
D	Below 0.8

200 mm/h (8in/h) Rainfall & 32 m/s (50 mph) Wind Velocity		
Ventilation Air Core Velocity m/s (fpm)	Water Penetration Effectiveness %	*Water Penetration Classification
0.0 (0)	100.0	A
0.5 (98)	100.0	A
1.0 (197)	100.0	A
1.5 (295)	100.0	A
2.0 (394)	100.0	A
2.5 (492)	100.0	A
3.0 (591)	100.0	A
3.5 (689)	100.0	A
4.0 (787)	99.8	A
4.5 (886)	99.8	A
5.0 (984)	99.7	A

*AMCA Classes for maximum allowable water penetrations

Discharge Loss Coefficient is calculated by dividing a louvers' actual airflow rate vs. a theoretical airflow for the opening. It provides an indication of the louvers' airflow characteristics.

* Discharge Loss Intake	
Wind Velocity (mph)	Class
29	2
50	2

Class	Discharge Loss Coefficient
1	0.4 and above
2	0.3 to 0.399
3	0.2 to 0.299
4	.0199 and below

(the higher the coefficient, the less resistance to airflow.)

VV-10-D Specifications

Furnish and install louvers as hereinafter specified where shown on plans or as described in schedules. Louvers shall possess stationary vertical blades designed to prevent the penetration of wind driven rain. Louver blades shall be placed on 1.5" centers within a 6" deep frame. Louver components (heads, jambs, and blades shall be factory assembled by United Enertech. Louver sizes too large for shipping shall be built up by the contractor from factory assembled louver sections to provide overall sizes required. Louver shall meet the performance requirements established by the AMCA 500L test procedure and shall be licensed to bear the AMCA certified rating seal for air performance and wind driven rain at 29 mph and 50 mph. Louver shall have a minimum free area of 6.82 sq. ft. based on the standard 48"x48" test specimen. Louver shall have a maximum static pressure drop of .102" (intake & exhaust) water gage based on 1000 FPM free area intake velocity. Louver shall carry a class A water penetration classification based on a ventilation core of 984 FPM at a rainfall rate of 3" per hour and a 29 mph simulated wind velocity. Louver shall carry a class A water penetration classification based on a ventilation core velocity of 984 FPM at a rainfall rate of 8" per hour and a 50 mph simulated wind velocity.

MIAMI-DADE COUNTY, FLORIDA TEST PERFORMANCE

TAS 100(A)-95 WIND DRIVEN RAIN RESISTANCE TEST (LOUVER ONLY) :

WIND VELOCITY MPH (KPH)	RAIN FALL RATE IN./HR. (MM/HR.)	ALLOWABLE PENETRATION OZ (ML)	ACTUAL PENETRATION OZ (ML)
35 (56)	8.8 (224)	0	0
70 (113)	8.8 (224)	0	0
90 (145)	8.8 (224)	1.44 (42.6)	0.51 (15)
110 (177)	8.8 (224)	0.48 (14.2)	.017 (5)

TAS 100(A)-95 WIND DRIVEN RAIN RESISTANCE TEST (LOUVER WITH OPTIONAL CD-150) :

WIND VELOCITY MPH (KPH)	RAIN FALL RATE IN./HR. (MM/HR.)	ALLOWABLE PENETRATION OZ (ML)	ACTUAL PENETRATION OZ (ML)
35 (56)	8.8 (224)	0	0
70 (113)	8.8 (224)	0	0
90 (145)	8.8 (224)	1.44 (42.6)	0
110 (177)	8.8 (224)	0.48 (14.2)	0

TAS 201-94 LARGE MISSILE IMPACT TEST:

MISSILE TYPE	VELOCITY IN FT/SEC (M/SEC)	IMPACTS
9 lb. Southern Yellow Pine 2"x4"x88-1/2"long	50 (15.24)	10

Louver allowed no inboard missile penetration during impacts.

TAS 202-94 UNIFORM STATIC AIR PRESSURE TEST (LOUVER ONLY) :

LOAD IN PSF (kPA)	LOAD DURATION	LOUVER RECOVERY
+150 (+7.18)	30 seconds	100%
+150 (+7.18)	30 seconds	100%
+225 (+10.76)	30 seconds	100%
-225 (-10.76)	30 seconds	100%

TAS 202-94 UNIFORM STATIC AIR PRESSURE TEST (LOUVER WITH OPTIONAL CD-150 DAMPER) :

LOAD IN PSF (kPA)	LOAD DURATION	LOUVER RECOVERY
+150 (+7.18)	30 seconds	100%
+150 (+7.18)	30 seconds	100%
+225 (+10.76)	30 seconds	100%
-225 (-10.76)	30 seconds	100%

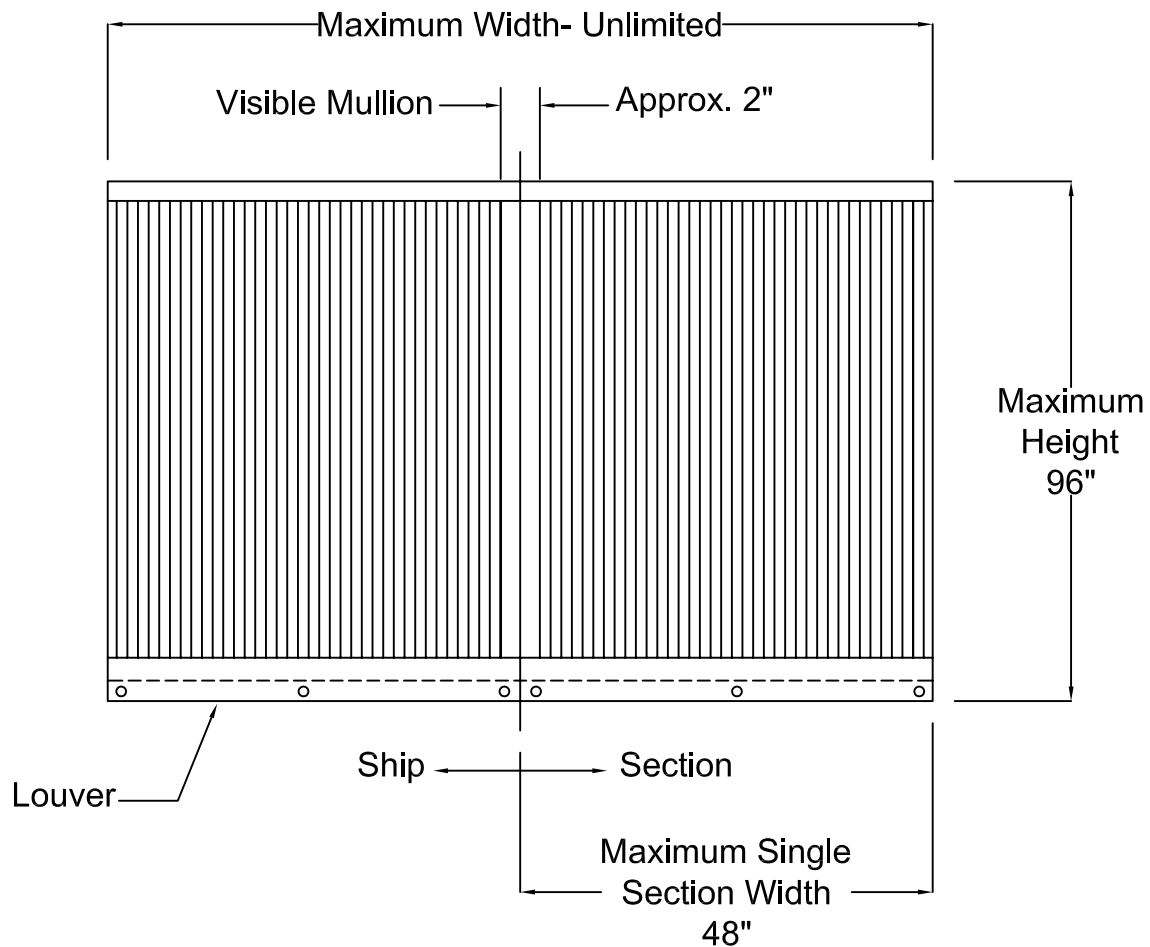
TAS 203-94 FATIGUE LOADING TEST (LOUVER ONLY) :

CYCLES	LOAD IN PSF (kPA)	LOAD DURATION CYCLE	LOUVER RECOVERY
600	+75 (+3.59)	1 to 3 seconds	100%
600	-75 (-3.59)	1 to 3 seconds	100%
70	+90 (+4.31)	1 to 3 seconds	100%
70	-90 (-4.31)	1 to 3 seconds	100%
1	+195 (+9.33)	1 to 3 seconds	100%
1	-195 (-9.33)	1 to 3 seconds	100%

TAS 203-94 FATIGUE LOADING TEST (LOUVER WITH OPTIONAL CD-150 DAMPER) :

CYCLES	LOAD IN PSF (kPA)	LOAD DURATION CYCLE	LOUVER RECOVERY
600	+75 (+3.59)	1 to 3 seconds	100%
600	-75 (-3.59)	1 to 3 seconds	100%
70	+90 (+4.31)	1 to 3 seconds	100%
70	-90 (-4.31)	1 to 3 seconds	100%
1	+195 (+9.33)	1 to 3 seconds	100%
1	-195 (-9.33)	1 to 3 seconds	100%

Model VV-10-D Installation Details



General Notes:

1. Reference separate Installation Instruction sheets for installation details. The installation methods indicated must be complied with for Miami-Dade Approval. It is the responsibility of the installing contractor to properly install the louvers per the appropriate detail.
2. On special orders, United Enertech may provide submittal and/or shop drawings. Reference these drawings for additional installation information.
3. Louvers wider than the maximum single section width will be shipped in multiple sections and will require field assembly. Field assembly is not by United Enertech.
4. Installation angles are shipped loose.

Must be installed per approval drawings as approved and labelled by MIAMI-DADE CO.



3101 S. Orchard Knob Ave.
Chattanooga, TN 37407
(423) 698-7715
FAX (423) 698-6629
www.unitedenertech.com

Model VV-10-D

Louver Selection and Application

FREE AREA CHART (square feet)

Louver Height Inches	Louver Width In Inches							Louver Height Inches
	12	18	24	30	36	42	48	
12	0.11	0.18	0.24	0.31	0.38	0.44	0.51	12
18	0.33	0.53	0.73	0.93	1.13	1.33	1.53	18
24	0.55	0.88	1.22	1.55	1.88	2.22	2.55	24
30	0.77	1.23	1.70	2.17	2.63	3.10	3.57	30
36	1.00	1.61	2.22	2.83	3.43	4.04	4.65	36
42	1.22	1.96	2.70	3.45	4.19	4.93	5.67	42
48	1.47	2.36	3.25	4.15	5.04	5.97	6.82	48
54	1.64	2.63	3.63	4.63	5.62	6.71	7.67	54
60	1.87	3.01	4.15	5.28	6.42	7.46	8.53	60
66	2.09	3.36	4.63	5.90	7.17	8.21	9.38	66
72	2.32	3.74	5.15	6.56	7.97	8.95	10.23	72
78	2.55	4.10	5.65	7.20	8.75	9.70	11.08	78
84	2.41	3.87	5.33	6.80	8.26	10.44	11.94	84
90	2.75	4.42	6.09	7.76	9.43	11.19	12.79	90
96	2.96	4.76	6.56	8.36	10.16	11.94	13.64	96