

Wind - driven Rain Louvers



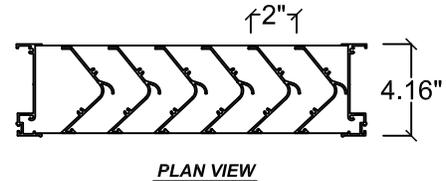
CVS 
LOUVER SERIES



4" WIND DRIVEN RAIN FIXED LOUVER MODEL RD-4

STANDARD CONSTRUCTION:

- FRAME: .081 Extruded Aluminum 4.16" Deep
- BLADES: .081 Extruded Aluminum on approximately 2" centers.
- EXTENDED SILL: .081 Extruded Aluminum, 5.25" Deep
- BIRDSCREEN: .75" x .051" Flattened Aluminum in removeable frame.
Screen is mounted as standard on inside (rear)
as looking from exterior of building.
- FINISH: Mill Aluminum (Std)
- MINIMUM SIZE: 12"w x 12"h
- MAXIMUM SIZE: Factory Assembled 60"w x 96"h

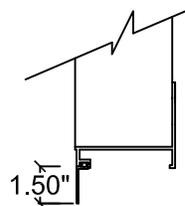
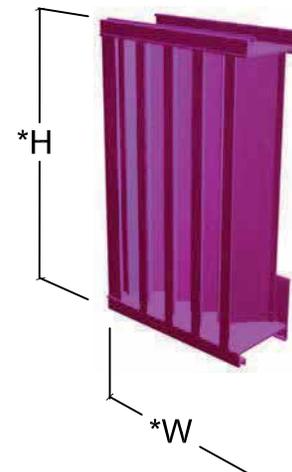


OPTIONS:

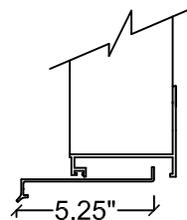
- Flanged Frame (1.50" std.), (1" std for shapes R_)
- Custom Flange (1", 2" , or 3"), (1.5", 2", or 3" for shapes R_)
- Extended Sill
- Glazing Adapter (.50" or .75")
- Insect Screen (Other Screen Available, See Screen Page)
- Filter Racks (no screen)
- Security Bars
- Hinged Sub Frame
- Welded Construction (Wind Load +/- 50 psf)
- Blank-off, Alum., non-insulated, no screen, non-removeable
- Blank-off, Alum., non-insulated, with bird screen or insect screen
- Blank-off, Alum., insulated double wall, with bird screen, removable
- Blank-off, Alum., insulated double wall, no screen, non-removeable

AVAILABLE FINISHES:

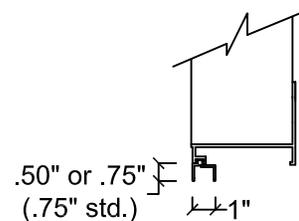
- Powder Polyester TGIC (2 coats) baked on at 410°F, 2.5 to 3.5 mils
- Powder Super durable polyester (2 coats) baked on at 410°F, 2.5 to 3.5 mils
- Acrylic baked enamel (ACRA-BOND® ULTRA) by AkzoNobel baked on at 350°F, 0.8 to 1.2 mils dry
- Kynar® (ALUM*A*STAR®) 2 coats by AkzoNobel baked on at 450°F, 1.2 to 1.6 mils dry
- Kynar 500® or HYLAR® 5000 70% TRINAR® (2 coats) by AkzoNobel baked on at 450°F, 1.2 to 1.6 mils dry,
- Kynar 500® or HYLAR® 5000 (70% Tri-Escent II) (2 coats) by AkzoNobel, a superior finish to other metallic or anodized finishes. A blend of mica, ceramic, and inorganic pigments creates subtle yet dazzling design that goes beyond metallic color without the requirement of a clear coat. 14 standard colors - custom colors available. Baked on at 415°F, 1.4 to 1.8 mils dry,
- Clear Anodize 204 R-1 Class II (AA-C22A31)(0.4 to 0.7 mil)
- Clear Anodize 215 R-1 Class I (AA-C22A41)(>0.7 mil)
- Integral Color Anodize (AA-C22A42)(>0.7 mil)
 - Clear coat available for all above finishes.
 - Hylar® 5000 is a registered trademark of Solvay Solexis, Inc.
 - Kynar® 500 is a registered trademark of Arkema.
 - ALUM*A*STAR® 50 and TRINAR® are registered trademarks of AkzoNobel
 - ACRA-BOND® ULTRA is a registered trademark of AkzoNobel



OPTIONAL FLANGE
(except R_ Shapes, 1" optional std)



EXTENDED SILL (Standard)



OPTIONAL GLAZING ADAPTER

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

MODEL RD-4
4" WIND DRIVEN RAIN FIXED LOUVER

Model RD-4 Louver Performance Data

RD-4 Specifications

Furnish and install louver as hereinafter specified where shown on plans or as described in schedules. Louver shall be stationary type with vertical rain resistant style blades positioned on approximately 2" centers within a 4.162" deep frame. Louver frame and blade materials to be .081" thick 6063-T5 extruded aluminum. Sections up to maximum of 60"w x 96"h shall withstand wind loading of 30 lbs per square foot (PSF) (110 mph wind equivalent). Consult factory for welded construction and higher wind speeds. Louver shall have a minimum free area of 6.32 sq. ft. base on the standard 48"w x 48"h test specimen. Louver shall have a maximum static pressure drop of .23" (exhaust) & .31" (intake) water gauge based on 1000 FPM free area intake velocity. Louver shall carry a Class A water penetration classification base on a ventilation air core velocity of 484 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 201 FPM at a rainfall rate of 8" per hour and a 50 mph simulated wind velocity.

Wind Driven Rain Performance

Test size 1m x 1m (39"x39") core
41.5"w x 41"h Nominal (1.05m x 1.04m)

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 (126)	100.0	A
1.0 (199)	100.0	A
1.5 (291)	99.9	A
2.0 (390)	99.6	A
2.5 (484)	99.5	A
3.0 (587)	98.6	B
3.5 (672)	89.3	C

*Classes for maximum allowable water penetrations

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)	99.9	A
0.5 (119)	99.8	A
1.0 (201)	99.4	A
1.5 (274)	98.5	B
2.0 (386)	97.1	B
2.5 (473)	93.8	C
3.0 (570)	85.4	C
3.5 (694)	58.3	D

*Classes for maximum allowable water penetrations

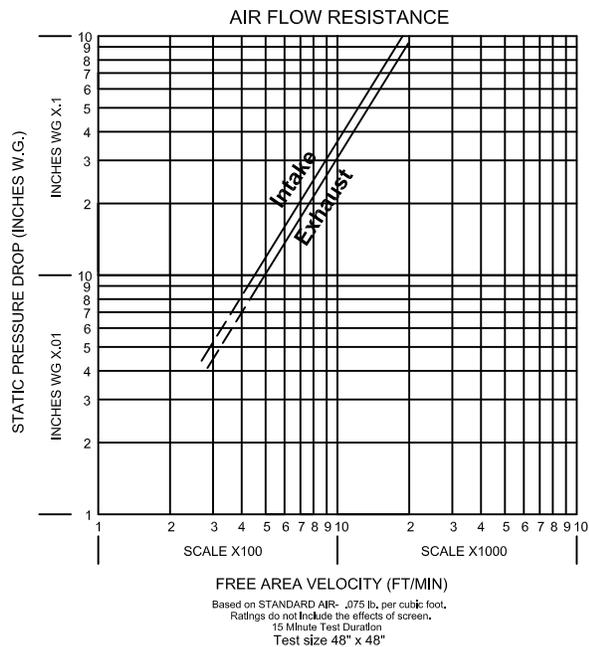
Wind Velocity (mph)	Class
29	4
50	4

* Discharge loss coefficient is the theoretical air flow of an opening divided by the actual flow rate of a louver the same size.

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.)

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



RD-4 FREE AREA CHART (SQUARE FEET)

Louver Height	Louver Width In Inches																Louver Height			
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102		108	114	120
12	0.18	0.29	0.40	0.51	0.62	0.73	0.84	0.95	1.05	1.16	1.27	1.38	1.49	1.60	1.71	1.82	1.93	2.04	2.15	12
18	0.44	0.70	0.96	1.23	1.49	1.76	2.02	2.29	2.55	2.82	3.08	3.35	3.61	3.88	4.14	4.41	4.67	4.93	5.20	18
24	0.63	1.01	1.39	1.77	2.15	2.53	2.91	3.29	3.67	4.05	4.43	4.81	5.19	5.57	5.95	6.33	6.71	7.09	7.47	24
30	0.89	1.43	1.97	2.52	3.06	3.60	4.14	4.68	5.22	5.77	6.31	6.85	7.39	7.93	8.47	9.02	9.56	10.10	10.64	30
36	1.10	1.76	2.43	3.09	3.76	4.43	5.09	5.76	6.43	7.09	7.76	8.42	9.09	9.76	10.42	11.09	11.75	12.42	13.09	36
42	1.26	2.03	2.79	3.56	4.32	5.09	5.85	6.62	7.39	8.15	8.92	9.68	10.45	11.21	11.98	12.74	13.51	14.28	15.04	42
48	1.36	2.19	3.02	3.84	4.67	5.50	6.32	7.15	7.98	8.81	9.63	10.46	11.29	12.11	12.94	13.77	14.59	15.42	16.25	48
54	1.56	2.50	3.45	4.40	5.34	6.29	7.23	8.18	9.13	10.07	11.02	11.96	12.91	13.86	14.80	15.75	16.69	17.64	18.59	54
60	1.82	2.93	4.03	5.14	6.24	7.35	8.46	9.56	10.67	11.77	12.88	13.99	15.09	16.20	17.30	18.41	19.52	20.62	21.73	60
66	2.01	3.23	4.45	5.67	6.89	8.12	9.34	10.56	11.78	13.00	14.22	15.44	16.66	17.88	19.11	20.33	21.55	22.77	23.99	66
72	2.13	3.42	4.72	6.01	7.30	8.60	9.89	11.18	12.48	13.77	15.06	16.36	17.65	18.94	20.24	21.53	22.82	24.12	25.41	72
78	2.27	3.65	5.04	6.42	7.80	9.18	10.56	11.94	13.32	14.70	16.08	17.47	18.85	20.23	21.61	22.99	24.37	25.75	27.13	78
84	2.41	3.87	5.33	6.80	8.26	9.72	11.18	12.65	14.11	15.57	17.03	18.50	19.96	21.42	22.88	24.35	25.81	27.27	28.74	84
90	2.54	4.09	5.63	7.18	8.72	10.27	11.81	13.36	14.90	16.45	17.99	19.54	21.08	22.62	24.17	25.71	27.26	28.80	30.35	90
96	2.73	4.38	6.04	7.70	9.35	11.01	12.67	14.32	15.98	17.63	19.29	20.95	22.60	24.26	25.92	27.57	29.23	30.89	32.54	96
102	2.87	4.61	6.36	8.10	9.85	11.59	13.33	15.08	16.82	18.57	20.31	22.05	23.80	25.54	27.29	29.03	30.77	32.52	34.26	102
108	2.98	4.80	6.61	8.42	10.24	12.05	13.86	15.68	17.49	19.30	21.12	22.93	24.74	26.55	28.37	30.18	31.99	33.81	35.62	108
114	3.09	4.97	6.84	8.72	10.60	12.48	14.35	16.23	18.11	19.99	21.86	23.74	25.62	27.50	29.37	31.25	33.13	35.01	36.88	114
120	3.22	5.18	7.13	9.09	11.05	13.00	14.96	16.92	18.87	20.83	22.78	24.74	26.70	28.65	30.61	32.57	34.52	36.48	38.44	120



MODEL XSD-130

HIGH PERFORMANCE SIGHT PROOF FIXED LOUVER

STANDARD CONSTRUCTION:

FRAME:

.081 Extruded Aluminum 5.1" (129.5mm) Deep

BLADES:

.063" (1.6mm) Extruded Aluminum on approximately 2" (51mm) centers.

BIRDSCREEN:

0.75" x 0.051" [19.05mm x 1.30mm] Flattened Aluminum in removable frame. Screen is mounted as standard on inside (rear) as looking from exterior of building.

FINISH:

MIII Aluminum (Std)

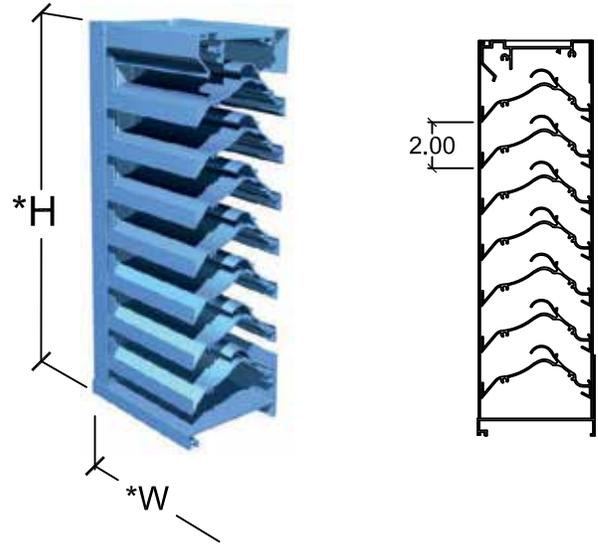
MINIMUM SIZE:

12"w x 12"h (305mm x 305mm)

MAXIMUM SIZE:

Factory Assembled 120"w x 84"h or 84"w x 120"h (3048mm x 2134mm or 2134mm x 3048mm)

Note: Drainable blade louvers should be limited to 10' maximum section widths (no more than 10' between vertical downspouts) to enable the drainable design to function effectively.

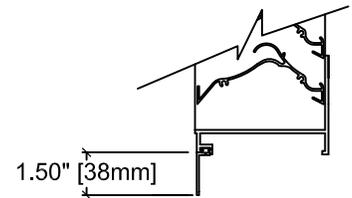


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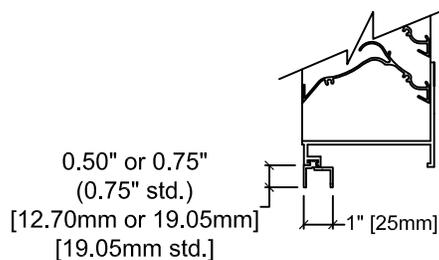
- Flanged Frame (1.50" std. [38mm]), (1" std. [25mm] for shapes R_)
- Custom Flange (1", 2" , or 3" [25mm, 51mm, or 76mm], (1.5", 2", or 3" for shapes R_)
- Extended Sill [38mm, 51mm, 76mm]
- Glazing Adapter (.50" or .75") [12.7mm or 19.1mm]
- Insect Screen (Other Screens Available, See Screen Page)
- Filter Racks (no screen)
- Security Bars
- Hinged Sub Frame
- Welded Construction (Wind Load +/- 50 psf)
- Blank-off, Alum., non-insulated, no screen, non-removeable
- Blank-off, Alum., non-insulated, with bird screen or insect screen
- Blank-off, Alum., insulated double wall, with bird screen, removable
- Blank-off, Alum., insulated double wall, no screen, non-removable

AVAILABLE FINISHES:

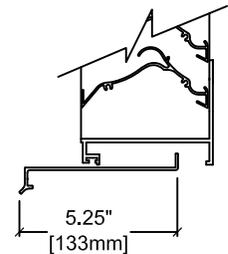
- Powder Polyester TGIC (2 coats) baked on at 410°F, 2.5 to 3.5 mils
- Powder Super durable polyester (2 coats) baked on at 410°F, 2.5 to 3.5 mils
- Acrylic baked enamel (ACRA-BOND® ULTRA) by AkzoNobel baked on at 350°F, 0.8 to 1.2 mils dry
- Kynar® (ALUM*A*STAR®) 2 coats by AkzoNobel baked on at 450°F, 1.2 to 1.6 mils dry
- Kynar 500® or HYLAR® 5000 70% TRINAR® (2 coats) by AkzoNobel baked on at 450°F, 1.2 to 1.6 mils dry,
- Kynar 500® or HYLAR® 5000 (70% Tri-Escent II) (2 coats) by AkzoNobel, a superior finish to other metallic or anodized finishes. A blend of mica, ceramic, and inorganic pigments creates subtle yet dazzling design that goes beyond metallic color without the requirement of a clear coat. 14 standard colors - custom colors available. Baked on at 415°F, 1.4 to 1.8 mils dry,
- Clear Anodize 204 R-1 Class II (AA-C22A31)(0.4 to 0.7 mil)
- Clear Anodize 215 R-1 Class I (AA-C22A41)(>0.7 mil)
- Integral Color Anodize (AA-C22A42)(>0.7 mil)
 - Clear coat available for all above finishes.
 - Hylar® 5000 is a registered trademark of Solvay Solexis, Inc.
 - Kynar® 500 is a registered trademark of Arkema.
 - ALUM*A*STAR® 50 and TRINAR® are registered trademarks of AkzoNobel
 - ACRA-BOND® ULTRA is a registered trademark of AkzoNobel



OPTIONAL FLANGE (except R_ Shapes, 1" optional std)



OPTIONAL GLAZING ADAPTER



OPTIONAL EXTENDED SILL

*Width and Height dimensions are approximately 1/4" (6mm) under listed size.

MODEL XSD-130
HIGH PERFORMANCE SIGHT PROOF FIXED LOUVER



MODEL RD-8 8" [203mm] VERTICAL BLADE SAND/RAIN FIXED LOUVER

STANDARD CONSTRUCTION:

FRAME: 0.081 [2.06mm] extruded aluminum sides 8.50" [216mm] deep
0.090 [2.29mm] formed aluminum top and bottom
(bottom incorporates 45° angle for maximum drainage)

BLADES: 0.081 [2.06mm] extruded aluminum placed on 2" [51mm] centers

BIRDSCREEN: 0.75" x 0.051 [19.05mm x 1.30mm] Flattened Aluminum in
removeable frame. Screen is mounted as standard on
inside (rear) as looking from exterior of building.

FINISH: Mill Aluminum (Std)

MINIMUM SIZE: 12"w x 18"h [305mm x 457mm]

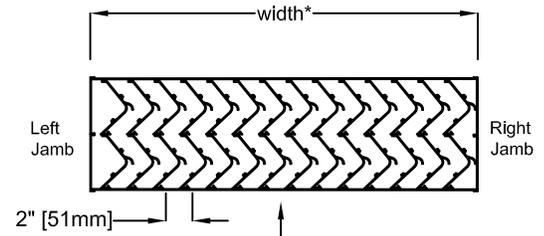
MAXIMUM SIZE: 48"w x96"h or 120"w x 48"h [1219mm
x 2438mm or 3048mm x 1219mm]

OPTIONS:

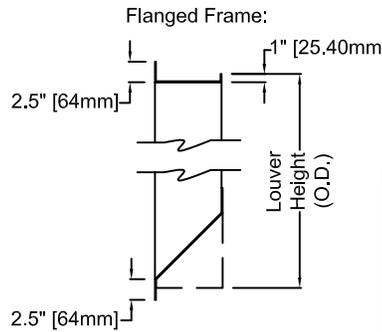
- Flanged Frame (1.5" std.) [38mm]
Custom Flange (1", 2" , or 3") [25mm, 51mm, or 76mm]
Extended Sill
Insect Screen (Other Screens Available, See Screen Page)
Filter Racks (no screen)
Security Bars
Hinged Sub Frame
Welded Construction (Wind Load +/- 50 psf)
Blank-off, Alum., non-insulated, no screen, non-removeable
Blank-off, Alum., non-insulated, with bird screen or insect screen
Blank-off, Alum., insulated double wall, with bird screen, removable
Blank-off, Alum., insulated double wall, no screen, non-removeable

AVAILABLE FINISHES:

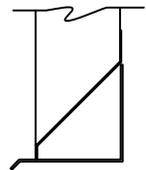
- Powder Polyester TGIC (2 coats) baked on at 410°F [210° C], 2.5 to 3.5 mils
Powder Super durable polyester (2 coats) baked on at 410°F [210° C], 2.5 to 3.5 mils
Acrylic baked enamel (ACRA-BOND® ULTRA) by AkzoNobel baked on at 350°F [177° C], 0.8 to 1.2 mils dry
Kynar® (ALUM*A*STAR®) 2 coats by AkzoNobel baked on at 450°F [222° C], 1.2 to 1.6 mils dry
Kynar 500® or HYLAR® 5000 70% TRINAR® (2 coats) by AkzoNobel baked on at 450°F [222°C], 1.2 to 1.6 mils dry,
Kynar 500® or HYLAR® 5000 (70% Tri-Escent II) (2 coats) by AkzoNobel, a superior finish to other metallic or anodized finishes. A blend of mica, ceramic, and inorganic pigments creates subtle yet dazzling design that goes beyond metallic color without the requirement of a clear coat. 14 standard colors - custom colors available. Baked on at 415°F [213° C], 1.4 to 1.8 mils dry,
Clear Anodize 204 R-1 Class II (AA-C22A31)(0.4 to 0.7 mil)
Clear Anodize 215 R-1 Class I (AA-C22A41)(>0.7 mil)
Integral Color Anodize (AA-C22A42)(>0.7 mil)
Clear coat available for all above finishes.
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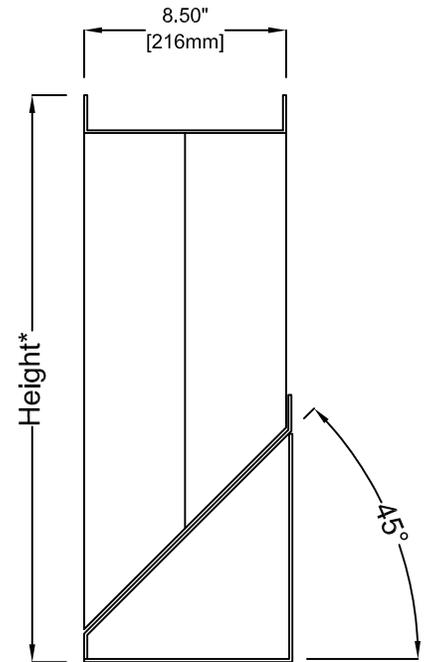
PLAN VIEW



Flanged Frame:



Extended Seal:



SIDE VIEW

Table with Performance Data: (in accordance with AMCA 500L): Beginning point of water penetration lies above 1250 FPM, Pressure Drop: .14" w.g. @1000 fpm (Intake), .12" w.g. @1000 fpm (exhaust), For Sand Removal Efficiency and Free Area, see next page.

*Width and Height dimensions are approximately 1/4" [6.35mm] under listed size.

MODEL RD-8
8" [203mm] VERTICAL BLADE SAND/RAIN FIXED LOUVER

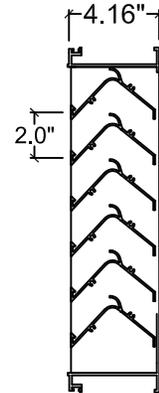


MODEL SED-4

HIGH PERFORMANCE FIXED LOUVER

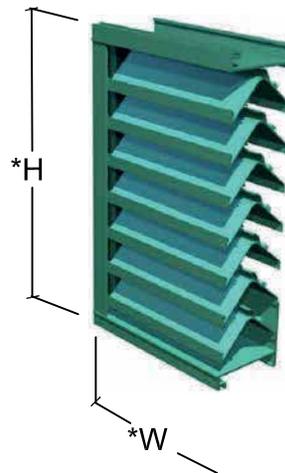
STANDARD CONSTRUCTION:

- Frame:** .081 Extruded Aluminum, 4.16" Deep
- Blade:** .081 Extruded Aluminum on approximately 2" centers
- Birdscreen:** .75" 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:** 120"w x 84"h or 84"w x 120"h
- Note:** Drainable blade louvers should be limited to 10' maximum section widths (no more than 10' between vertical downspouts) to enable the drainable design to function effectively.



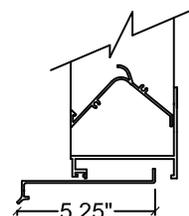
OPTIONS:

- Flanged Frame (1.50" std.), (1" std for shapes R_)
- Custom Flange (1", 2" , or 3"), (1.5", 2", or 3" for shapes R_)
- Extended Sill
- Glazing Adapter (.50" or .75")
- Insect Screen (Other Screens Available, See Screen Page)
- Filter Racks (no screen)
- Security Bars
- Hinged Sub Frame
- Welded Construction (Wind Load +/- 50 psf)
- Blank-off, Alum., non-insulated, no screen, non-removeable
- Blank-off, Alum., non-insulated, with bird screen or insect screen
- Blank-off, Alum., insulated double wall, with bird screen, removable
- Blank-off, Alum., insulated double wall, no screen, non-removeable

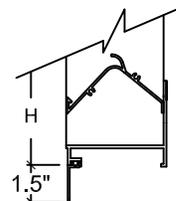


AVAILABLE FINISHES:

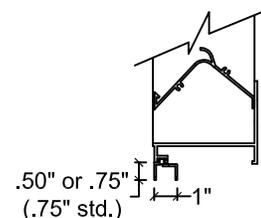
- Powder Polyester TGIC** (2 coats) baked on at 410°F, 2.5 to 3.5 mils
- Powder Super durable polyester** (2 coats) baked on at 410°F, 2.5 to 3.5 mils
- Acrylic baked enamel** (ACRA-BOND® ULTRA) by AkzoNobel baked on at 350°F, 0.8 to 1.2 mils dry
- Kynar®** (ALUM*A*STAR®) 2 coats by AkzoNobel baked on at 450°F, 1.2 to 1.6 mils dry
- Kynar 500®** or **HYLAR® 5000 70% TRINAR®** (2 coats) by AkzoNobel baked on at 450°F, 1.2 to 1.6 mils dry,
- Kynar 500®** or **HYLAR® 5000 (70% Tri-Escent II)** (2 coats) by AkzoNobel, a superior finish to other metallic or anodized finishes. A blend of mica, ceramic, and inorganic pigments creates subtle yet dazzling design that goes beyond metallic color without the requirement of a clear coat. 14 standard colors - custom colors available. Baked on at 415°F, 1.4 to 1.8 mils dry,
- Clear Anodize 204 R-1 Class II (AA-C22A31)**(0.4 to 0.7 mil)
- Clear Anodize 215 R-1 Class I (AA-C22A41)**(>0.7 mil)
- Integral Color Anodize (AA-C22A42)**(>0.7 mil)
 - Clear coat available for all above finishes.
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 - Kynar® 500 is a registered trademark of Arkema.
 - ALUM*A*STAR® 50 and TRINAR® are registered trademarks of AkzoNobel
 - ACRA-BOND® ULTRA is a registered trademark of AkzoNobel



OPTIONAL EXTENDED SILL
(except R_ Shapes, 1" optional std)



OPTIONAL FLANGE

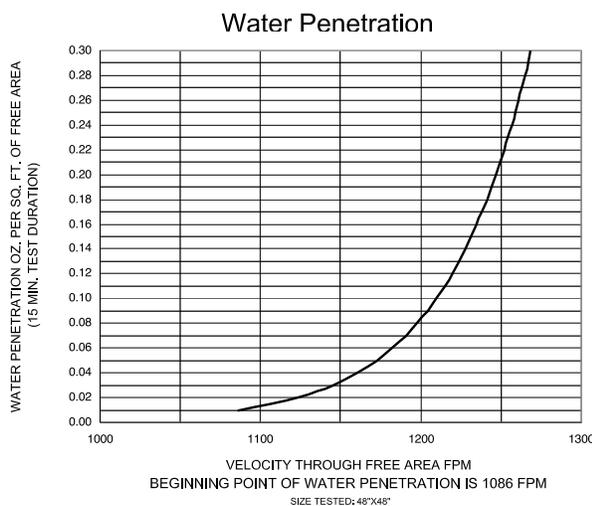
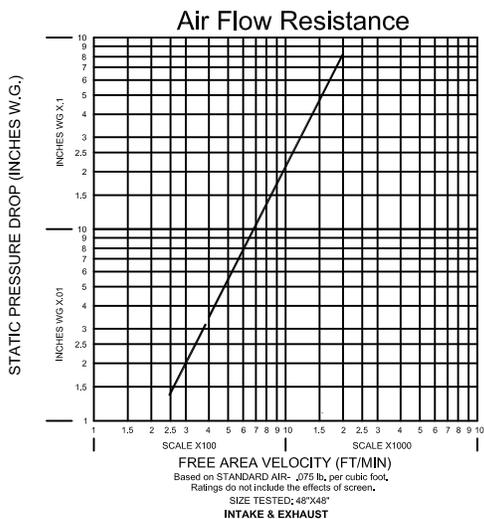


OPTIONAL GLAZING ADAPTER

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

MODEL SED-4
HIGH PERFORMANCE FIXED LOUVER

Model SED-4 Louver Performance Data



SED-4 FREE AREA IN SQ. FT.

Louver Height Inches	Width - Inches																Louver Height Inches			
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102		108	114	120
12	0.17	0.28	0.38	0.48	0.59	0.69	0.80	0.90	1.00	1.11	1.21	1.32	1.42	1.52	1.63	1.73	1.84	1.94	2.04	12
18	0.34	0.55	0.76	0.97	1.17	1.38	1.59	1.80	2.01	2.21	2.42	2.63	2.84	3.05	3.25	3.46	3.67	3.88	4.09	18
24	0.51	0.83	1.14	1.45	1.76	2.07	2.39	2.70	3.01	3.32	3.63	3.95	4.26	4.57	4.88	5.19	5.51	5.82	6.13	24
30	0.68	1.10	1.52	1.93	2.35	2.76	3.18	3.60	4.01	4.43	4.84	5.26	5.68	6.09	6.51	6.92	7.34	7.76	8.17	30
36	0.86	1.38	1.90	2.42	2.94	3.46	3.98	4.50	5.02	5.54	6.06	6.58	7.10	7.62	8.14	8.66	9.18	9.70	10.22	36
42	1.03	1.65	2.28	2.90	3.52	4.15	4.77	5.40	6.02	6.64	7.27	7.89	8.52	9.14	9.76	10.39	11.01	11.64	12.26	42
48	1.20	1.93	2.65	3.38	4.11	4.84	5.57	6.29	7.02	7.75	8.48	9.21	9.93	10.66	11.39	12.12	12.85	13.57	14.30	48
54	1.37	2.20	3.03	3.87	4.70	5.53	6.36	7.19	8.03	8.86	9.69	10.52	11.35	12.19	13.02	13.85	14.68	15.51	16.35	54
60	1.54	2.48	3.41	4.35	5.28	6.22	7.16	8.09	9.03	9.96	10.90	11.84	12.77	13.71	14.64	15.58	16.52	17.45	18.39	60
66	1.71	2.75	3.79	4.83	5.87	6.91	7.95	8.99	10.03	11.07	12.11	13.15	14.19	15.23	16.27	17.31	18.35	19.39	20.43	66
72	1.88	3.03	4.17	5.31	6.46	7.60	8.75	9.89	11.03	12.18	13.32	14.47	15.61	16.75	17.90	19.04	20.19	21.33	22.47	72
78	2.05	3.30	4.55	5.80	7.05	8.29	9.54	10.79	12.04	13.29	14.53	15.78	17.03	18.28	19.53	20.77	22.02	23.27	24.52	78
84	2.23	3.58	4.93	6.28	7.63	8.99	10.34	11.69	13.04	14.39	15.75	17.10	18.45	19.80	21.15	22.51	23.86	25.21	26.56	84
90	2.40	3.85	5.31	6.76	8.22	9.68	11.13	12.59	14.04	15.50	16.96	18.41	19.87	21.32	22.78	24.24	25.69	27.15	28.60	90
96	2.57	4.13	5.69	7.25	8.81	10.37	11.93	13.49	15.05	16.61	18.17	19.73	21.29	22.85	24.41	25.97	27.53	29.09	30.65	96
102	2.74	4.40	6.07	7.73	9.39	11.06	12.72	14.39	16.05	17.71	19.38	21.04	22.71	24.37	26.03	27.70	29.36	31.03	32.69	102
108	2.91	4.68	6.45	8.21	9.98	11.75	13.52	15.29	17.05	18.82	20.59	22.36	24.13	25.89	27.66	29.43	31.20	32.97	34.73	108
114	3.08	4.95	6.83	8.70	10.57	12.44	14.31	16.19	18.06	19.93	21.80	23.67	25.55	27.42	29.29	31.16	33.03	34.91	36.78	114
120	3.25	5.23	7.20	9.18	11.16	13.13	15.11	17.08	19.06	21.04	23.01	24.99	26.96	28.94	30.92	32.89	34.87	36.84	38.82	120

Wind Driven Rain Performance -AMCA 500-L-

Test size 1m x 1m(39"x39")core
41³/₈"w x 41¹/₈"h Nominal(1.05m x 1.04m)

75 mm/h (3 in/h) Rainfall & 13 m/s (29 mph) Wind Velocity				
Core Velocity fpm (m/s)	Airflow cfm (m ³ /s)	Free Area Velocity fpm (m/s)	Effectiveness Ratio	AMCA Effectiveness Class
0 (0.0)	0 (0.00)	0 (0.0)	99.5	A
137 (0.7)	1475 (0.70)	265 (1.3)	99.0	A
193 (1.0)	2077 (0.98)	373 (1.9)	98.3	B
281 (1.4)	3025 (1.43)	543 (2.8)	98.2	B
381 (1.9)	4101 (1.94)	736 (3.7)	98.1	B
471 (2.4)	5070 (2.39)	910 (4.6)	97.6	B
584 (3.0)	6286 (2.97)	1129 (5.7)	96.5	B
679 (3.4)	7309 (3.45)	1312 (6.7)	95.4	B

202.4 mm/h (8 in/h) Rainfall & 22 m/s (50 mph) Wind Velocity				
Core Velocity fpm (m/s)	Airflow cfm (m ³ /s)	Free Area Velocity fpm (m/s)	Effectiveness Ratio	AMCA Effectiveness Class
0 (0.0)	0 (0.00)	0 (0.0)	98.7	B
120 (0.6)	1292 (0.61)	232 (1.2)	98.0	B
175 (0.9)	1884 (0.89)	338 (1.7)	97.5	B
284 (1.4)	3057 (1.44)	549 (2.8)	97.0	B
406 (2.1)	4370 (2.06)	785 (4.0)	96.2	B
497 (2.5)	5350 (2.52)	960 (4.9)	95.5	B
578 (2.9)	6222 (2.94)	1117 (5.7)	95.2	B
683 (3.5)	7352 (3.47)	1320 (6.7)	93.1	C

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

* Discharge Loss Intake	
Wind Velocity (mph)	Class
29	3
50	3

SED-4 Specifications

Furnish and install louver as hereinafter specified where shown on plans or as described in schedules. Louver shall be stationary type with horizontal rain resistant style blades positioned on approximately 2" centers within 4.162" deep frame. Louver frame and blade materials to be .081" thick 6063-T5 extruded aluminum. Sections up to maximum of 60"w x 96"h shall withstand wind loading of 30 lbs/sq.ft. (110 mph wind equivalent). Consult factory for welded construction and higher wind speeds. 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 water penetration, air performance, and wind driven rain. Louver shall have a minimum free area of 5.57 sq. ft. based on the standard 48"w x 48"h test specimen. Louver shall have a maximum static pressure drop of .20"(exhaust) & .20"(intake) water gage based on 1000 FPM free area intake velocity. Louver shall carry a minimum Class B water penetration classification based on a ventilation core of 679 FPM at a rainfall rate of 3" per hour and a 29 mph simulated wind velocity. Louver shall also carry a minimum class B water penetration classification based on a ventilation core velocity of 578 FPM at a rainfall rate of 8" per hour and a 50 mph simulated wind velocity.

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

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

* Discharge loss coefficient is the theoretical air flow of an opening divided by the actual flow rate of a louver the same size.



MODEL D-HV-4

HIGH PERFORMANCE FIXED LOUVER with SNOW RESISTANCE

STANDARD CONSTRUCTION:

Frame: .081 Extruded Aluminum, 4.16" [105mm] Deep

Horizontal (front) Blade: .060 Extruded Aluminum on approximately 1.5" [37mm] centers

Vertical (rear) Blade: .060 Extruded Aluminum on approximately 0.75" [19mm] centers

Birdscreen: 0.75" [19mm] x .051" [1.29mm] 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" [305mm] x 12" [305mm]

Maximum Single Section: 120"w x 84"h or 84"w x 120"h [3048mm] w x [2134mm] h or [2134mm] w x [3048mm] h

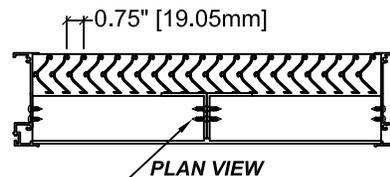
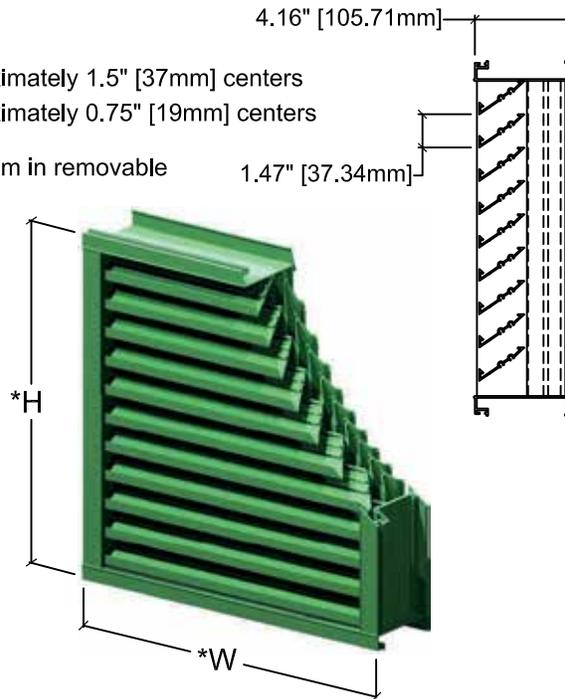
Note: Drainable blade louvers should be limited to 10' [3048mm] maximum section widths (no more than 10' [3048mm] between vertical downspouts) to enable the drainable design to function effectively.

OPTIONS:

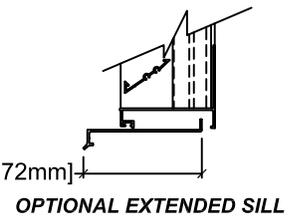
- Flanged Frame (1.50" [38mm] std.), (1" [25mm] std for shapes R_)
Custom Flange (1", 2", or 3"), (1.5", 2", or 3" for shapes R_)
Extended Sill
Glazing Adapter (0.50" [13mm] or 0.75" [19mm])
Insect Screen (Other Screens Available, See Screen Page)
Filter Racks (no screen)
Security Bars
Hinged Sub Frame
Welded Construction (Wind Load +/- 50 psf)
Blank-off, Alum., non-insulated, no screen, non-removeable
Blank-off, Alum., non-insulated, with bird screen or insect screen
Blank-off, Alum., insulated double wall, with bird screen, removable
Blank-off, Alum., insulated double wall, no screen, non-removeable

AVAILABLE FINISHES:

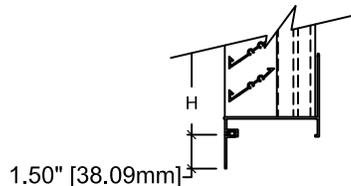
- Powder Polyester TGIC (2 coats) baked on at 410°F, 2.5 to 3.5 mils
Powder Super durable polyester (2 coats) baked on at 410°F, 2.5 to 3.5 mils
Acrylic baked enamel (ACRA-BOND® ULTRA) by AkzoNobel baked on at 350°F, 0.8 to 1.2 mils dry
Kynar® (ALUM*A*STAR®) 2 coats by AkzoNobel baked on at 450°F, 1.2 to 1.6 mils dry
Kynar 500® or HYLAR® 5000 70% TRINAR® (2 coats) by AkzoNobel baked on at 450°F, 1.2 to 1.6 mils dry,
Kynar 500® or HYLAR® 5000 (70% Tri-Escent II) (2 coats) by AkzoNobel, a superior finish to other metallic or anodized finishes.
Clear Anodize 204 R-1 Class II (AA-C22A31)(0.4 to 0.7 mil)
Clear Anodize 215 R-1 Class I (AA-C22A41)(>0.7 mil)
Integral Color Anodize (AA-C22A42)(>0.7 mil)
Clear coat available for all above finishes.
Hylar® 5000 is a registered trademark of Solvay Solexis, Inc.
Kynar® 500 is a registered trademark of Arkema.
ALUM*A*STAR® 50 and TRINAR® are registered trademarks of AkzoNobel
ACRA-BOND® ULTRA is a registered trademark of AkzoNobel



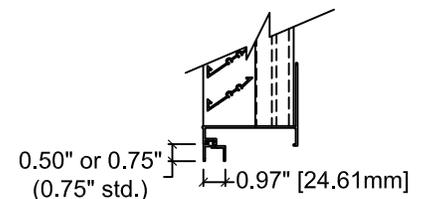
Blade braces placed 48" [1219mm] max. o.c.



OPTIONAL EXTENDED SILL



OPTIONAL FLANGE (except R_ Shapes, 1" optional std)



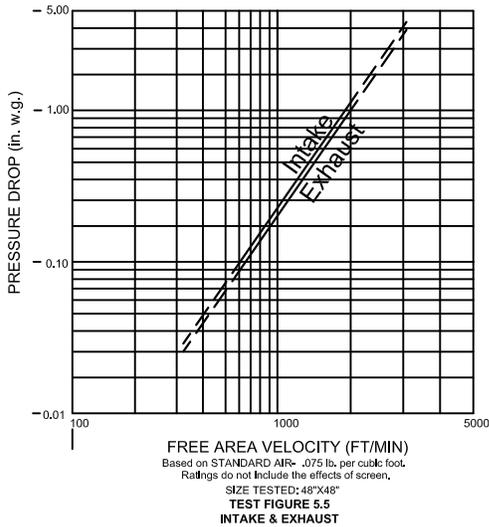
OPTIONAL GLAZING ADAPTER

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

MODEL D-HV-4 HIGH PERFORMANCE FIXED LOUVER with SNOW RESISTANCE

Model D-HV-4 Louver Performance Data

Air Flow Resistance



Beginning point of **WATER PENETRATION** for
MODEL D-HV-4 lies above
1250 fpm
free area velocity at .01 oz. of water penetration
Test Duration: 15 minutes

D-HV-4 Specifications

Furnish and install louver as hereinafter specified where shown on plans or as described in schedules. Louver shall be stationary type with horizontal rain resistant style blades positioned on approximately 1.5" centers and vertical wind driven rain blades placed on approximately 0.75" both within 4.162" deep frame. Louver frame and blade materials to be .063" thick 6063-T5 extruded aluminum. Sections up to maximum of 84"w x 120"h shall withstand wind loading of 30 lbs/sq.ft. (110 mph wind equivalent). Consult factory for welded construction and higher wind speeds. 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 water penetration, air performance, and wind driven rain. Louver shall have a minimum free area of 7.75 sq. ft. based on the standard 48"w x 48"h test specimen. Louver shall have a maximum static pressure drop of 0.27"(exhaust) & 0.29"(intake) water gage based on 1000 FPM free area intake velocity. Louver shall carry a minimum 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 also carry a minimum class A water penetration classification based on a ventilation core velocity of 974 FPM at a rainfall rate of 8" per hour and a 50 mph simulated wind velocity.

D-HV-4 FREE AREA IN SQ. FT.

Louver Height Inches	Width - Inches																Louver Height Inches			
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102		108	114	120
12	0.35	0.58	0.82	1.05	1.28	1.52	1.75	1.98	2.22	2.45	2.68	2.92	3.15	3.39	3.62	3.85	4.09	4.32	4.55	12
18	0.56	0.93	1.30	1.67	2.04	2.41	2.78	3.15	3.52	3.89	4.26	4.63	5.00	5.37	5.74	6.11	6.48	6.85	7.22	18
24	0.76	1.27	1.77	2.28	2.79	3.29	3.80	4.31	4.81	5.32	5.83	6.34	6.84	7.35	7.86	8.36	8.87	9.38	9.88	24
30	0.97	1.61	2.25	2.90	3.54	4.18	4.83	5.47	6.11	6.76	7.40	8.04	8.69	9.33	9.97	10.62	11.26	11.90	12.55	30
36	1.17	1.95	2.73	3.51	4.29	5.07	5.85	6.63	7.41	8.19	8.97	9.75	10.53	11.31	12.09	12.87	13.65	14.43	15.21	36
42	1.38	2.29	3.21	4.13	5.04	5.96	6.88	7.79	8.71	9.63	10.54	11.46	12.38	13.29	14.21	15.13	16.04	16.96	17.88	42
48	1.58	2.63	3.69	4.74	5.79	6.85	7.75	8.95	10.01	11.06	12.11	13.17	14.22	15.28	16.33	17.38	18.44	19.49	20.54	48
54	1.79	2.98	4.17	5.36	6.55	7.74	8.93	10.12	11.31	12.50	13.69	14.88	16.07	17.26	18.45	19.64	20.83	22.02	23.21	54
60	1.99	3.32	4.64	5.97	7.30	8.62	9.95	11.28	12.60	13.93	15.26	16.59	17.91	19.24	20.57	21.89	23.22	24.55	25.87	60
66	2.20	3.66	5.12	6.59	8.05	9.51	10.98	12.44	13.90	15.37	16.83	18.29	19.76	21.22	22.68	24.15	25.61	27.07	28.54	66
72	2.40	4.00	5.60	7.20	8.80	10.40	12.00	13.60	15.20	16.80	18.40	20.00	21.60	23.20	24.80	26.40	28.00	29.60	31.20	72
78	2.61	4.34	6.08	7.82	9.55	11.29	13.03	14.76	16.50	18.24	19.97	21.71	23.45	25.18	26.92	28.66	30.39	32.13	33.87	78
84	2.81	4.68	6.56	8.43	10.30	12.18	14.05	15.92	17.80	19.67	21.54	23.42	25.29	27.17	29.04	30.91	32.79	34.66	36.53	84
90	3.02	5.03	7.04	9.05	11.06	13.07	15.08	17.09	19.10	21.11	23.12	25.13	27.14							90
96	3.22	5.37	7.51	9.66	11.81	13.95	16.10	18.25	20.39	22.54	24.69	26.84	28.98							96
102	3.43	5.71	7.99	10.28	12.56	14.84	17.13	19.41	21.69	23.98	26.26	28.54	30.83							102
108	3.63	6.05	8.47	10.89	13.31	15.73	18.15	20.57	22.99	25.41	27.83	30.25	32.67							108
114	3.84	6.39	8.95	11.51	14.06	16.62	19.18	21.73	24.29	26.85	29.40	31.96	34.52							114
120	4.04	6.73	9.43	12.12	14.81	17.51	20.20	22.89	25.59	28.28	30.97	33.67	36.36							120

Wind Driven Rain Performance -AMCA 500-L-
Test size 1m x 1m (39.375"x39.375") core
41 5/8" w x 41 5/8" h Nominal

75 mm/h (3 in/h) Rainfall & 13 m/s (29 mph) Wind Velocity				
Core Velocity fpm (m/s)	Airflow cfm (m³/s)	Free Area Velocity fpm (m/s)	Effectiveness Ratio	AMCA Effectiveness Class
0 (0.0)	0 (0.00)	0 (0.0)	100.0	A
98 (0.5)	1055 (0.50)	184 (0.9)	100.0	A
197 (1.0)	2121 (1.00)	371 (1.9)	100.0	A
295 (1.5)	3175 (1.50)	555 (2.8)	100.0	A
394 (2.0)	4241 (2.00)	741 (3.8)	100.0	A
492 (2.5)	5296 (2.50)	926 (4.7)	100.0	A
591 (3.0)	6362 (3.00)	1112 (5.6)	100.0	A
689 (3.5)	7416 (3.50)	1297 (6.6)	100.0	A
787 (4.0)	8471 (4.00)	1481 (7.5)	100.0	A
886 (4.5)	9537 (4.50)	1667 (8.5)	100.0	A
984 (5.0)	10592 (5.00)	1852 (9.4)	100.0	A

202.4 mm/h (8 in/h) Rainfall & 22 m/s (50 mph) Wind Velocity				
Core Velocity fpm (m/s)	Airflow cfm (m³/s)	Free Area Velocity fpm (m/s)	Effectiveness Ratio	AMCA Effectiveness Class
0 (0.0)	0 (0.00)	0 (0.0)	100.0	A
96 (0.5)	1033 (0.49)	181 (0.9)	100.0	A
194 (1.0)	2088 (0.99)	365 (1.9)	100.0	A
284 (1.4)	3057 (1.44)	534 (2.7)	100.0	A
400 (2.0)	4306 (2.03)	753 (3.8)	100.0	A
496 (2.5)	5339 (2.52)	933 (4.7)	100.0	A
571 (2.9)	6146 (2.90)	1075 (5.5)	100.0	A
679 (3.4)	7309 (3.45)	1278 (6.5)	100.0	A
786 (4.0)	8461 (3.99)	1479 (7.5)	99.8	A
878 (4.5)	9451 (4.46)	1652 (8.4)	99.6	A
974 (4.9)	10484 (4.95)	1833 (9.3)	99.1	A

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.)

* Discharge Loss Intake	
Wind Velocity (mph)	Class
29	3
50	3

* Discharge loss coefficient is the theoretical air flow of an opening divided by the actual flow rate of a louver the same size.

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

Product Range

- ▶ Fire-Resisting Ductwork (BS & EN)
- ▶ Fire-rated Insulation (ASTM & UL)
- ▶ Sound Attenuators (ASTM & BS)
- ▶ VAV Boxes (AHRI)
- ▶ Life Safety Dampers (UL)
- ▶ Control Dampers (AMCA & BS)
- ▶ Access Doors (BS & EN)
- ▶ Louvers (AMCA)
- ▶ Smoke Exhaust, Building, Car Park & Tunnel Ventilation Fans (AMCA & EN)
- ▶ Domestic and Industrial Ventilation Fans
- ▶ AHU, FAHU, FCU, RTU, ERV & Ecology Units (Eurovent, TUV & AHRI)
- ▶ Electrostatic Precipitators (ESPs) & UL Listed Air Filters (UL)

Our Brands



Control Dampers, Louvers,
Sound Attenuators & VAV Boxes



Non-Coated Fire-Resisting Ductwork
& Life Safety Dampers



Fire-rated Insulation

Building & Industry



Smoke Exhaust, Car Park &
Tunnel Ventilation



General Ventilation



Global Clean Air
Solutions Provider

**Central Ventilation System
Co. L.L.C**

Al Wasit Street,
Industrial Area 2,
Sharjah, U.A.E

CVS Arabia L.L.C

2nd Industrial City,
Dammam 31952,
K.S.A

**Badr and Asfour
Company For Engineering
and Metal Industries**

Al Minya Industrial Zone,
Al Minya Governorate
2427606, Egypt

**Central Ventilation Systems
Co. W.L.L.**

Street 9,
Industrial Area
Doha, Qatar



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