

SUBMITTAL DATA

MODEL LBD-4E/4I

4" COMBINATION LOUVER-BACKDRAFT DAMPER

STANDARD CONSTRUCTION:

FRAME: 0.081 [2.06mm] Extruded Aluminum, 4.16" [106mm] Deep

BLADES: 0.081 [2.06mm] Extruded Aluminum positioned on a 39° angle on approximately 4.25" [108mm] centers

BLADE SEAL: Silicone

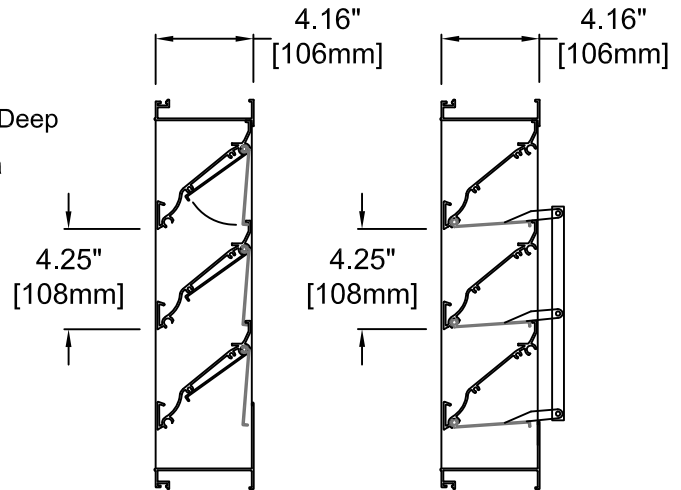
BIRDSCREEN: 0.060 [1.52mm] Extruded Aluminum
(Blades move independent of each other)

FINISH: Mill Aluminum (Std.)

MINIMUM SIZE: 12" x 12" [305mm x 305mm]

LBD-4E MAXIMUM SIZE: 60"w x 120"h [1524mm x 3048mm]

LBD-4I MAXIMUM SIZE: 44"w x 120"h [1118mm x 3048mm]

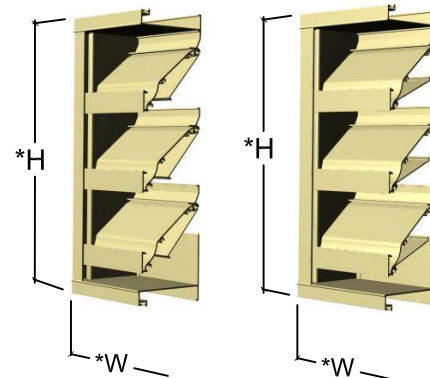


LBD-4E (exhaust)

LBD-4I (Intake)

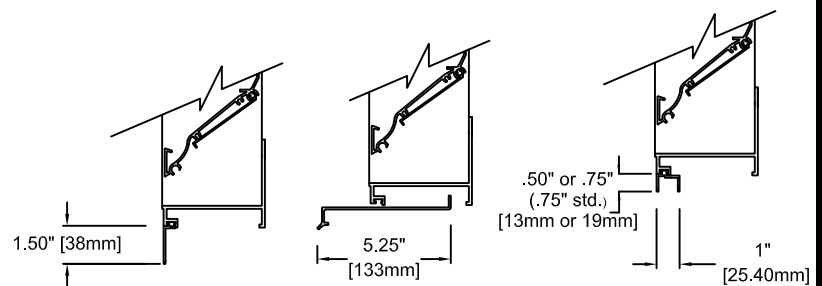
OPTIONS:

- Flanged Frame (1.5" [38mm] std.)
- Custom Flange (1", 2", or 3") [25.40mm, 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 Meets AAMA-2603 Standards
- Powder Super durable polyester** (2 coats) baked on at 410°F [210° C], 2.5 to 3.5 mils Meets AAMA-2604-05 Standards
- Acrylic baked enamel** (ACRA-BOND® ULTRA) by AkzoNobel baked on at 350°F [177°C], 0.8 to 1.2 mils dry Meets AAMA-2603 Standards
- Kynar®** (ALUM*A*STAR®) 2 coats by AkzoNobel baked on at 450°F [222°C], 1.2 to 1.6 mils dry Meets AAMA-2604-05 Standards
- 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, Meets AAMA-2605-05 Standards
- 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, meets AAMA 2605-05.
- 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

OPTIONAL EXTENDED SILL

OPTIONAL GLAZING ADAPTER

*W & H dimensions furnished approximately 1/4" [6.35mm] under size.

Due to continuing research, United Enertech reserves the right to change specifications without notice.



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MODEL LBD-4E (4" COMBINATION LOUVER-BACKDRAFT DAMPER)

DRAWN BY: MHM	DATE: 4-20-10	REV. DATE: 9-16-13	REV. NO. 6	APPROVED BY: BGT	DWG. NO.: A-34
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SUGGESTED SPECIFICATION

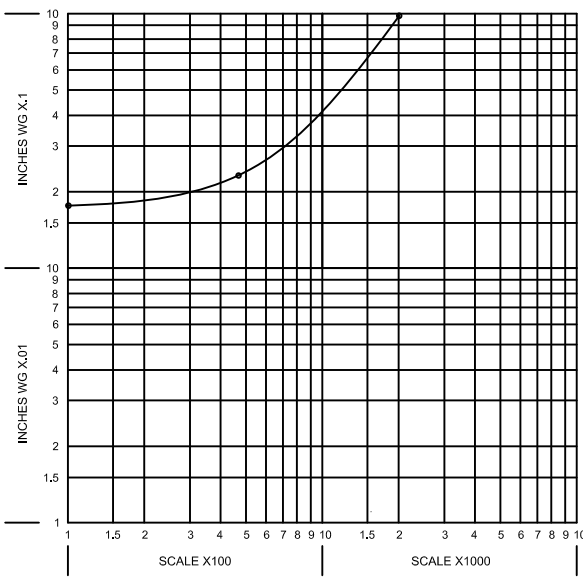
Furnish and install louvers as hereinafter specified where shown on plans or as described in schedules. Louvers shall be stationary drainable type with drain gutters in each blade and downspouts in jambs and mullions. Stationary drainable blades shall be contained within a 4.13" frame. Louver components (heads, jambs, sills, blades, and mullions) shall be factory assembled by the louver manufacturer. Louver sizes too large for shipping shall be built up by the contractor from factory assembled louver sections to provided overall sizes required. Louver design shall incorporate structural supports required to withstand a wind load of 30 lbs. per sq. ft. (equivalent of a 110 mph wind).

Louvers shall be United Enertech LBD-4E/4I 6063T5 aluminum construction as follows:
FRAME: 4.13" deep, .081" nominal wall thickness
BLADES: .081" nominal wall thickness(fixed) and .061 nominal wall thickness (adjustable). Blades are positioned at 39° angle and spaced approximately 4.25" center to center.
SCREEN: .75" x .051" (19 x 1.3) expanded, flattened aluminum in removable frame.
FINISH: Select finish specification from United Enertech Finishes brochure.

Published louver performance data bearing the AMCA Certified Ratings seal for Air Performance & Water Penetration must be submitted for approval prior to fabrication and must demonstrate pressure drop and water penetration equal to or less than the United Enertech model specified.

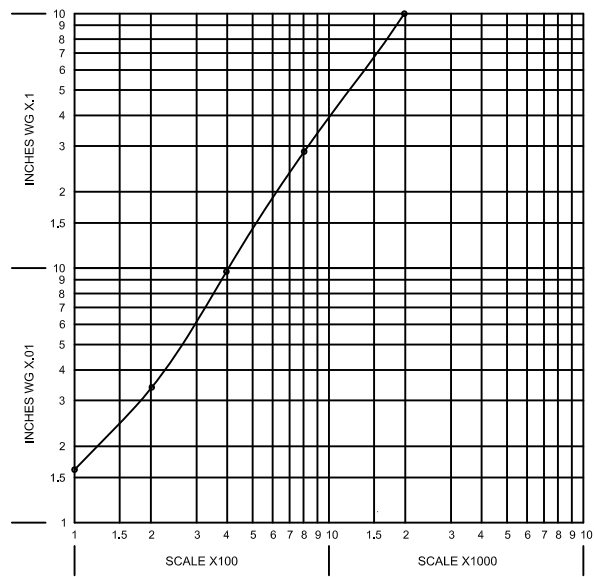
PERFORMANCE DATA

AMCA Standard 500-L provides a reasonable basis for testing and rating louvers. Testing to AMCA 500-L is performed under a certain set of laboratory conditions. This does not guarantee that other conditions will not occur in the actual environment where louvers must operate. The louver system should be designed with a reasonable safety factor for louver performance. To ensure protection from water carryover, design with a performance level somewhat below maximum desired pressure drop and .01 oz./sq. ft. of water penetration.



VELOCITY THROUGH FREE AREA

**PRESSURE DROP
INTAKE
Model: LBD-4I**



VELOCITY THROUGH FREE AREA

**PRESSURE DROP
EXHAUST
LBD-4E**

Beginning point of **WATER PENETRATION** for
MODEL LBD-4I lies above **1060 fpm**,
Model LBD-4E lies above **1300 fpm**
 free area velocity at .01 oz. of water (penetration)

LBD-4E FREE AREA IN SQ. FT.

Louver Height Inches	Width - Inches									Louver Height Inches
	12	18	24	30	36	42	48	54	60	
12	0.24	0.39	0.55	0.70	0.85	1.00	1.15	1.30	1.45	12
18	0.47	0.75	1.04	1.32	1.61	1.90	2.18	2.47	2.76	18
24	0.66	1.06	1.47	1.88	2.28	2.69	3.09	3.50	3.90	24
30	0.93	1.51	2.08	2.65	3.23	3.80	4.38	4.95	5.52	30
36	1.09	1.76	2.43	3.09	3.76	4.43	5.10	5.77	6.44	36
42	1.35	2.18	3.00	3.83	4.66	5.49	6.32	7.15	7.98	42
48	1.55	2.51	3.47	4.42	5.38	6.34	7.29	8.25	9.21	48
54	1.76	2.84	3.93	5.01	6.10	7.18	8.26	9.35	10.43	54
60	2.02	3.26	4.50	5.74	6.98	8.22	9.46	10.70	11.94	60
66	2.02	3.26	4.50	5.74	6.98	8.22	9.46	10.70	11.94	66
72	2.45	3.96	5.46	6.97	8.48	9.98	11.49	13.00	14.51	72
78	2.61	4.22	5.82	7.43	9.04	10.64	12.25	13.86	15.46	78
84	2.86	4.63	6.39	8.15	9.91	11.67	13.44	15.20	16.96	84
90	3.10	5.01	6.92	8.83	10.73	12.64	14.55	16.46	18.37	90
96	3.28	5.29	7.31	9.33	11.35	13.36	15.38	17.40	19.41	96
102	3.55	5.74	7.92	10.11	12.29	14.48	16.66	18.85	21.04	102
108	3.72	6.01	8.30	10.59	12.88	15.17	17.46	19.75	22.04	108
114	3.97	6.41	8.85	11.29	13.73	16.17	18.61	21.05	23.49	114
120	4.19	6.76	9.34	11.92	14.49	17.07	19.64	22.22	24.80	120

LBD-4I FREE AREA IN SQ. FT.

Louver Height Inches	Width - Inches									Louver Height Inches
	12	18	24	30	36	42	48	54	60	
12	0.25	0.40	0.56	0.71	0.87	1.02	1.17	1.33	1.48	12
18	0.48	0.77	1.06	1.36	1.65	1.94	2.24	2.53	2.82	18
24	0.68	1.10	1.52	1.94	2.36	2.78	3.20	3.62	4.04	24
30	0.96	1.55	2.14	2.74	3.33	3.92	4.51	5.10	5.69	30
36	1.12	1.81	2.50	3.19	3.88	4.57	5.26	5.95	6.64	36
42	1.39	2.25	3.11	3.96	4.82	5.68	6.54	7.39	8.25	42
48	1.61	2.60	3.58	4.57	5.56	6.55	7.54	8.53	9.52	48
54	1.82	2.95	4.07	5.19	6.32	7.44	8.56	9.68	10.81	54
60	2.08	3.37	4.65	5.93	7.22	8.50	9.78	11.07	12.35	60
66	2.09	3.38	4.66	5.95	7.24	8.52	9.81	11.10	12.38	66
72	2.54	4.10	5.66	7.22	8.78	10.34	11.90	13.46	15.02	72
78	2.70	4.37	6.03	7.69	9.36	11.02	12.68	14.35	16.01	78
84	2.97	4.79	6.62	8.44	10.27	12.10	13.92	15.75	17.57	84
90	3.21	5.19	7.16	9.14	11.11	13.09	15.06	17.04	19.02	90
96	3.40	5.49	7.58	9.67	11.76	13.86	15.95	18.04	20.13	96
102	3.68	5.94	8.20	10.47	12.73	14.99	17.26	19.52	21.78	102
108	3.85	6.23	8.60	10.97	13.34	15.71	18.08	20.45	22.83	108
114	4.11	6.64	9.17	11.70	14.23	16.75	19.28	21.81	24.34	114
120	4.34	7.00	9.67	12.34	15.01	17.68	20.35	23.01	25.68	120