United Enertech

(ENGINEERS)

SUBMITTAL DATA

Combination Louver - Backdraft Damper

APPLICATION AND FEATURES

The Models **LBD-4E** & **LBD-4I** are weather louvers designed to protect the outside opening in building exterior walls. The LBD-4E may be used for exhaust air while the LBD-4I is designed for intake air applications. Both models incorporate drainable blades and downspouts jamb and gutter design for high performance.

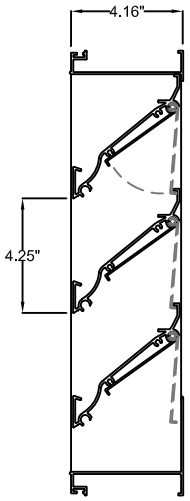
Standard Construction:

Frame: .081 Extruded Aluminum, 4-1/8" Deep

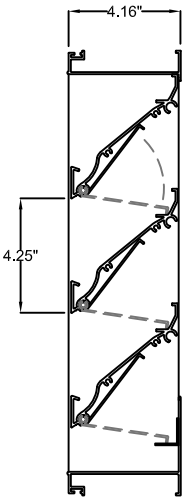
Fixed Blade: .081 Extruded Aluminum positioned on a 39° angle on approximately 4.25" centers

Damper Blade: .060 Extruded Aluminum (Blades move independent of each other)

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



LBD-4E (exhaust)

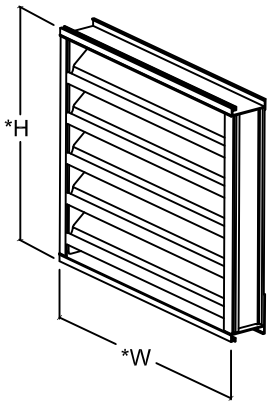


LBD-4I (Intake)

Finish: Mill Aluminum (Std.)

Minimum Size: 12 x12

Maximum Single Section: 60"w x 120"h

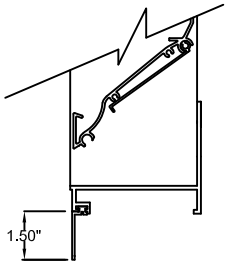


Options:

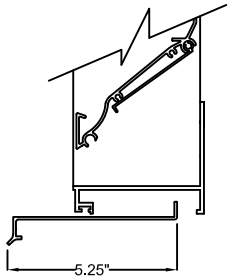
- ❑ Flanged Frame (1-1/2" std.)
- ❑ Custom Flange (1", 2" , or 3")
- ❑ Extended Sill
- ❑ Glazing Adapter (1/2" or 3/4")
- ❑ Insect Screen
- ❑ Blade Seals
- ❑ Filter Racks
- ❑ Security Bars
- ❑ Hinged Sub Frame
- ❑ Welded Const. (wind load 50 p.s.f.)

Finishes:

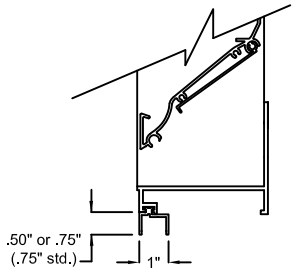
- ❑ Clear Anodize
- ❑ Integral Color Anodize
- ❑ Baked Powder Polyester
- ❑ Baked Powder Fluoropolymer 70%
- ❑ Baked Powder Clear Coat



OPTIONAL FLANGE



OPTIONAL EXTENDED SILL



OPTIONAL GLAZING ADAPTER

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

Job Name:	☐ **MODEL LBD-4E (exhaust)**		
Location:	☐ **MODEL LBD-4I (Intake)**		
Architect:	DRAWN BY: CLJ	DATE: 6-15-09	REV. DATE: 8-27-09
Engineer:	REV. NO. 3	APPROVED BY: SDC	DWG. NO.: **E-4a**
Contractor:			

Louver Selection and Application

LBD-4E FREE AREA IN SQ. FT.

Louver Height Inches	Width - Inches 12	18	24	30	36	42	48	54	60	Louver Height Inches
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**

Height - Inches

LBD-4I FREE AREA IN SQ. FT.

Louver Height Inches	Width - Inches 12	18	24	30	36	42	48	54	60	Louver Height Inches
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**

Height - Inches

LBD-4E/4I Selection and Examples

Example 1:

Airflow given as 10,000 cfm - select louver size

A. Determine louver free area by dividing airflow by free area velocity (do not exceed 1050 fpm on intake louver application).

10,000 cfm / 1050 fpm = 9.52 sq.ft.
Airflow / Velocity = Free Area

B. Select a louver size with at least the required free area from the chart above (9.52 sq.ft.)

42" wide x 72" high LBD-4E louver = 9.98 sq.ft.
(other sections available, see chart above)

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

ΔP at 750 fpm = X.XX in. w.g.
Free Area Velocity Pressure Drop

Example 2:

Louver size given 36" wide x 48" high.
Determine maximum airflow.

A. Use Free Area Chart to determine
Free Area = 5.38 sq.ft.

B. Multiply Free Area by Free Area Velocity (do not exceed 1050 fpm on intake louver applications).

5.38 sq.ft. x 1050 fpm = 5,649 cfm
Free Area x Max. Free Area Velocty = Max Airflow