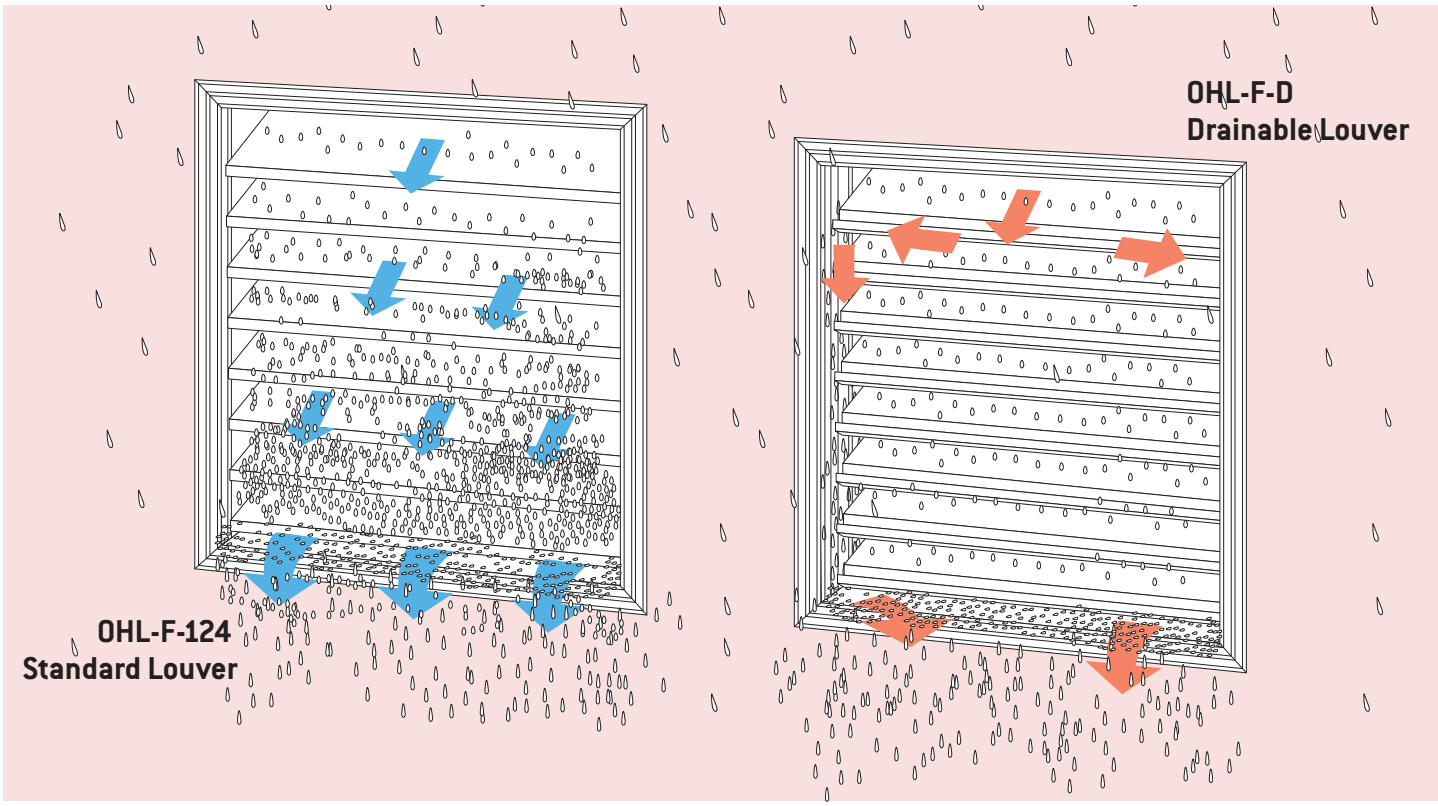
OHL-D – Drainable Louver



Holyoake Industries Model OHL-D offers an alternative concept in horizontal outside louvers. The drainable blade louver offers excellent water penetration performance.

The OHL-D louver achieves this by draining the water from each blade and discharging it at the bottom of the louver through vertical down pipes found at either side of the louver. Because of the gutter on each blade the water does not cascade down the face of the louver. This means that each blade only deals with the water that lands directly on it. In a typical horizontal louver, where the water does cascade down the face, the water builds to a level where the pressure differential and the velocity of the air over the louver is enough to carry over the water to the inside of the louver.

By avoiding this cascade effect the drainable horizontal louver offers excellent water penetration performance. The main benefit of this is that there is less water penetration at a given performance level. This means that there is the option of selecting an OHL-D louver at a higher effective velocity without compromising the water penetration performance. If a selection is made at a higher velocity the louver can then be smaller than a typical horizontal louver giving a direct saving on the louver size but also providing a smaller penetration for the building. If water penetration performance is of paramount concern the OHL-D offers the most effective way to achieve this.

Selecting a Louver

Air flow velocity through the louver's effective pressure area must be identified. This effective pressure area velocity determines if the louver size selected will minimise water penetration (due to weather) and establishes a pressure drop due to the air flow. No louver manufacturer "guarantees" that louvers will prevent water penetration under all possible combinations of wind and rain. However, water penetration will be minimised if free area velocities, as obtained in the tables from this section, are used in conjunction with the table on page 233F and velocities lower than those indicated for given penetration levels are selected. Water penetration usually does not need to be considered when selecting exhaust air louvers.

Note
When velocities through louvers cannot be controlled, water penetration performance cannot be guaranteed.

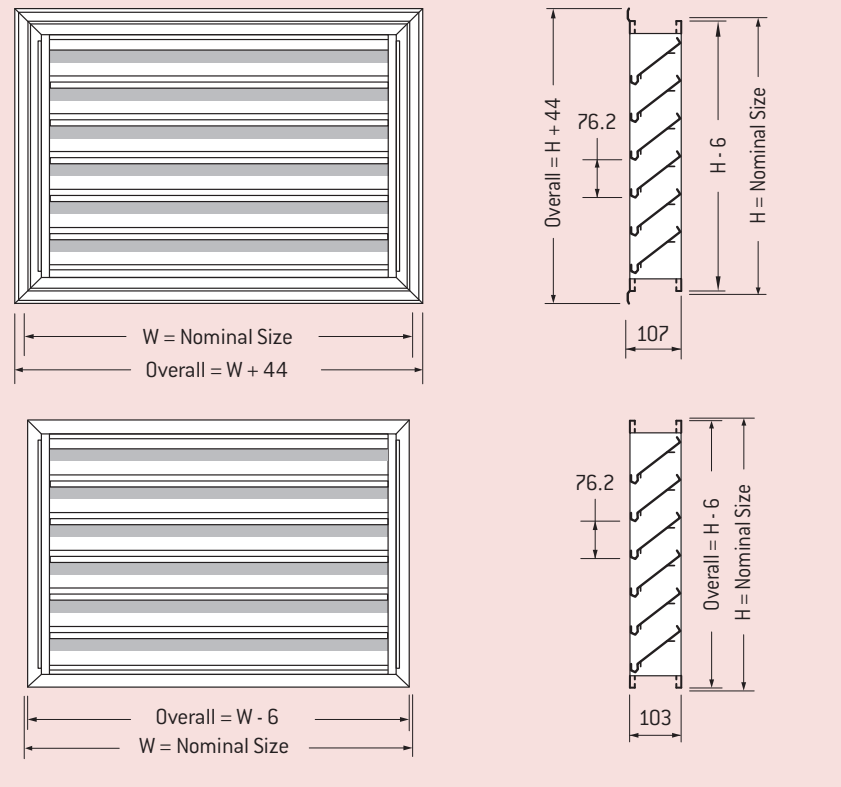
Model: **OHL-F-D**

Drainable blade horizontal louver in a flanged surround.

Guide Product Weights		
Approximate Weight in Kg.		
Size	OHL-F-D	OHL-C-D
300 x 300	2	2
500 x 500	5	5
900 x 900	12	12
1200 x 1200	19	19
1500 x 1800	33	33
2500 x 2000	56	56

Model: **OHL-C-D**

Drainable blade horizontal louver in a channel surround.



Note

On sections greater than 900mm wide a 40 x 40 mullion will be used to support the blades. This increases the depth of the louver by 40mm.

Model: **OHL-F-D and OHL-C-D**

Effective pressure area (sq. metres)

Width "W", mm.	300	450	600	750	900	1050	1250	1500	1750	2000	2250	2500
Height "H", mm.								0.1				
300	0.02	0.03	0.04	0.06	0.07	0.08	0.10	0.12	0.14	0.16	0.18	0.20
400	0.03	0.05	0.08	0.10	0.12	0.13	0.17	0.20	0.24	0.28	0.31	0.35
500	0.05	0.08	0.11	0.14	0.17	0.19	0.24	0.29	0.34	0.39	0.44	0.49
600	0.06	0.10	0.14	0.18	0.22	0.24	0.31	0.37	0.44	0.51	0.57	0.64
700	0.07	0.12	0.17	0.22	0.27	0.30	0.38	0.46	0.54	0.62	0.70	0.78
800	0.09	0.15	0.20	0.26	0.32	0.35	0.45	0.54	0.64	0.73	0.83	0.92
900	0.10	0.17	0.23	0.30	0.37	0.41	0.52	0.63	0.74	0.85	0.96	1.07
1000	0.12	0.19	0.27	0.34	0.42	0.47	0.59	0.71	0.84	0.96	1.09	1.21
1100	0.13	0.21	0.30	0.38	0.46	0.52	0.66	0.80	0.94	1.08	1.22	1.36
1200	0.14	0.24	0.33	0.42	0.51	0.58	0.73	0.88	1.04	1.19	1.35	1.50
1300	0.16	0.26	0.36	0.46	0.56	0.63	0.80	0.97	1.14	1.31	1.48	1.65
1400	0.17	0.28	0.39	0.50	0.61	0.69	0.87	1.06	1.24	1.42	1.61	1.79
1500	0.19	0.30	0.42	0.54	0.66	0.74	0.94	1.14	1.34	1.54	1.74	1.94
1600	0.20	0.33	0.46	0.58	0.71	0.80	1.01	1.23	1.44	1.65	1.87	2.08
1700	0.21	0.35	0.49	0.62	0.76	0.85	1.08	1.31	1.54	1.77	2.00	2.22
1800	0.23	0.37	0.52	0.67	0.81	0.91	1.15	1.40	1.64	1.88	2.13	2.37
1900	0.24	0.40	0.55	0.71	0.86	0.96	1.22	1.48	1.74	2.00	2.26	2.51
2000	0.25	0.42	0.58	0.75	0.91	1.02	1.29	1.57	1.84	2.11	2.39	2.66

0.2 · 0.5 · 1 · 1.5 · 2

Pressure requirement for outside louvers

Velocity, m/s **	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5
Intake*	2	4	7	11	16	22	29	37	45	55	65	77	89	102
Exhaust*	1	3	5	8	11	15	19	24	30	37	43	51	59	68

*Total Pressure Pa (N/m²) ** Velocity corresponding to Effective Pressure Area m³/s = Velocity Times Effective Pressure Area.

Example of selection for outside louvers

Select an outside louver for exhausting 0.581 m³/s with a pressure requirement of 11 Pa (N/m²).

1. From pressure requirement table a velocity of 3.0 m/s is indicated as acceptable for an exhaust pressure of 11 Pa (N/m²).
2. The effective pressure area corresponding to this velocity and air quantity is

$$\text{Area} = \frac{\text{m}^3/\text{s}}{\text{velocity}} = \frac{0.581}{3} = 0.19\text{m}^2$$

3. For a Model OHL-F-D or OHL-C-D louver an effective pressure area of 0.19 m² is approximately satisfied by a 1050 mm wide x 500 mm high; 450 mm wide x 1000 mm high, etc.