EXL161/261- EXTERNAL WEATHER LOUVERS WITH SMALL BLADE

DESCRIPTION:

External weather louvres are externally mounted air transfer devices for the fresh air and exhaust air of air conditioning systems. They are installed in external walls and façades. Their narrowly arranged blades give good protection against the direct ingress of rain as well as against leaves and birds.

Under certain unfavourable conditions, such as heavy rain, and depending on the airflow velocity it might happen that slight quantities of water enter together with the air. This is why the airflow velocity in fresh air openings should not exceed 2,5 – 3 m/s.

CONSTRUCTION:

Standard Material Aluminum Optional:.304-316 Stainless Steel, Galvanized Sheet Steel.
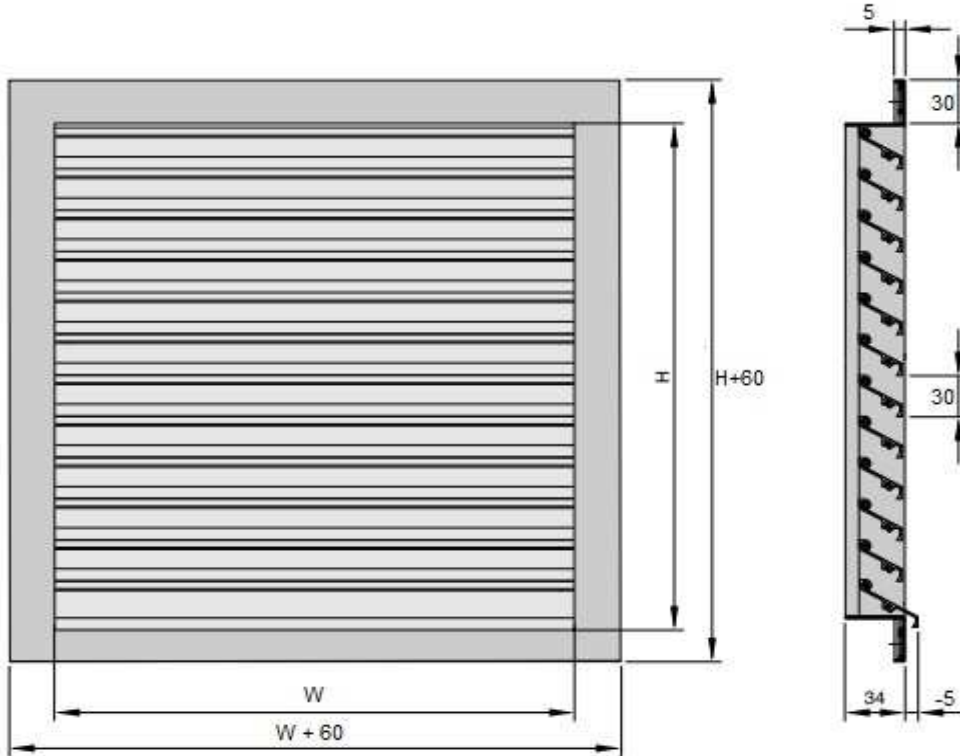
APPLICATION:

- Maximum width of 2000 mm, maximum height of 2000 mm
- Low differential pressure due to aerofoil blades
- Low air-regenerated noise
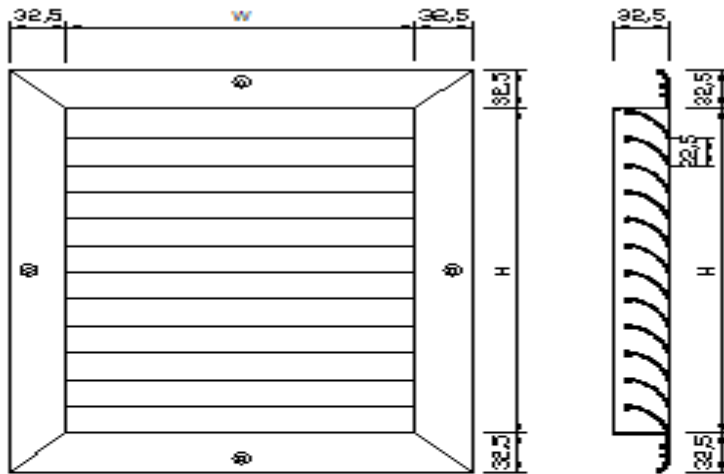- Available in standard sizes and many intermediate sizes

ACCESSORIES:

- Bird and insect screens
- Filters
- Dampers

EXL161/261- EXTERNAL WEATHER LOUVERS WITH SMALL BLADE

STANDARD DIMENSIONS:
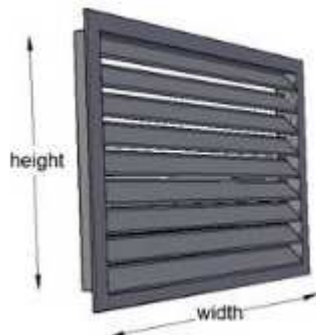
EXL161

EXL261

Curvilinear Type Blade

EXL161/261- EXTERNAL WEATHER LOUVERS WITH SMALL BLADE

EXL161-261 AVAILABLE SIZE

AVAILABLE SIZES (mm) - Always width x height													
WIDHT													
HEIGHT	100	150	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
100	X	X	X	X	X	X	X	X	X	X	X	X	X	X
150	X	X	X	X	X	X	X	X	X	X	X	X	X	X
200	X	X	X	X	X	X	X	X	X	X	X	X	X	X
250	X	X	X	X	X	X	X	X	X	X	X	X	X	X
300	X	X	X	X	X	X	X	X	X	X	X	X	X	X
350	X	X	X	X	X	X	X	X	X	X	X	X	X	X
400	X	X	X	X	X	X	X	X	X	X	X	X	X	X
450	X	X	X	X	X	X	X	X	X	X	X	X	X	X
500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600	X	X	X	X	X	X	X	X	X	X	X	X	X	X
800	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1200	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1400	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1600	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1800	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2000	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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FUNCTIONAL DESCRIPTION

External weather louvres are externally mounted air transfer devices for the fresh air and exhaust air of air conditioning systems. They are installed in external walls and façades. Their narrowly arranged blades give good protection against the direct ingress of rain as well as against leaves and birds. Under certain unfavourable conditions, such as heavy rain, and depending on the airflow velocity it might happen that slight quantities of water enter together with the air. This is why the airflow velocity in fresh air openings should not exceed 2.5 – 3.0 m/s.

Schematic illustration of EXL161

① Frame
② Regular blades
③ Bottom blade
④ Fixing holes
⑤ Wire mesh; additional insect screen as an option
⑥ Reinforcing strut from H = 600
⑦ Stabilising mullion from W = 600

EXL161/261- EXTERNAL WEATHER LOUVERS WITH SMALL BLADE

PERFORMANCE DATA

Nominal sizes	100x100 - 2000x1000mm/1200x2000mm
Volume flow rate range	15-5895 l/s or 55-21205m3/h at 2,5m/s
Free area	Approx. 60 %, with insect screen approx. 45 %
Total differential pressure – exhaust air	30 Pa at 2.5 m/s
Total differential pressure – fresh air	35 Pa at 2.5 m/s

Quick Sizing

Height	Width [mm]												
	97		147		197		297		397		497		597	
mm	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h
97	15	54	25	90	35	126	50	180	70	252	85	306	105	378
147	30	108	45	162	60	216	90	324	120	432	150	540	180	648
197	40	144	60	216	85	306	125	450	170	612	210	756	250	900
247	55	198	80	288	110	396	165	594	215	774	270	972	325	1170
297	65	234	100	360	130	468	200	720	265	954	335	1206	400	1440
347	75	270	115	414	155	558	235	846	315	1134	395	1422	475	1710
397	90	324	135	486	180	648	275	990	365	1314	460	1656	550	1980
447	100	360	155	558	205	738	310	1116	415	1494	520	1872	625	2250
497	115	414	170	612	230	828	350	1260	465	1674	585	2106	700	2520
597	140	504	210	756	280	1008	420	1512	565	2034	705	2538	850	3060
797	185	666	285	1026	380	1368	570	2052	765	2754	955	3438	1150	4140
997	235	846	355	1278	475	1710	720	2592	960	3456	1205	4338	1445	5202
1197	285	1026	430	1548	575	2070	870	3132	1160	4176	1450	5220	1745	6282
1397	330	1188	505	1818	675	2430	1015	3654	1360	4896	1700	6120	2045	7362
1597	380	1368	575	2070	775	2790	1165	4194	1555	5598	1950	7020	2340	8424
1797	430	1548	650	2340	870	3132	1315	4734	1755	6318	2200	7920	2640	9504
1997	475	1710	725	2610	970	3492	1460	5256	1955	7038	2445	8802	2940	10584

Height	Width [mm]												
	797		997		1197		1397		1597		1797		1997	
mm	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h	l/s	m³/h
97	135	486	170	612	205	738	240	864	275	990	310	1116	345	1242
147	235	846	295	1062	355	1278	415	1494	475	1710	535	1926	595	2142
197	335	1206	420	1512	505	1818	590	2124	675	2430	760	2736	845	3042
247	435	1566	545	1962	655	2358	765	2754	875	3150	985	3546	1095	3942
297	535	1926	670	2412	805	2898	940	3384	1075	3870	1210	4356	1345	4842
347	635	2286	795	2862	955	3438	1115	4014	1275	4590	1435	5166	1595	5742
397	735	2646	920	3312	1105	3978	1290	4644	1475	5310	1660	5976	1840	6624
447	835	3006	1045	3762	1255	4518	1465	5274	1675	6030	1880	6768	2090	7524
497	935	3366	1170	4212	1405	5058	1640	5904	1870	6732	2105	7578	2340	8424
597	1135	4086	1420	5112	1705	6138	1985	7146	2270	8172	2555	9198	2840	10224
797	1530	5508	1915	6894	2300	8280	2685	9666	3070	11052	3455	12438	3840	13824
997	1930	6948	2415	8694	2900	10440	3385	12186	3870	13932	4355	15678	4840	17424
1197	2330	8388	2915	10494	3500	12600	4085	14706	4665	16794				
1397	2730	9828	3410	12276	4095	14742	4780	17208						
1597	3125	11250	3910	14076	4695	16902								
1797	3525	12690	4410	15876	5290	19044								
1997	3925	14130	4910	17676	5890	21204								

EXL161/261- EXTERNAL WEATHER LOUVERS WITH SMALL BLADE

EFFECTIVE AREA

Metric System - m^2

EXL-161/261 STANDARD SELECTION TABLE

Effective area (m²)		H (mm)												
		100	150	200	250	300	350	400	450	500	600	700	800	900
W (mm)	100	0,0049	0,0092	0,0128	0,0171	0,0207	0,0236	0,0279	0,0315	0,0351	0,0430	0,0509	0,0581	0,0660
	150	0,0074	0,0138	0,0192	0,0257	0,0311	0,0354	0,0419	0,0473	0,0527	0,0645	0,0764	0,0872	0,0990
	200	0,0098	0,0184	0,0256	0,0342	0,0414	0,0472	0,0558	0,0630	0,0702	0,0860	0,1018	0,1162	0,1320
	250	0,0123	0,0230	0,0320	0,0428	0,0518	0,0590	0,0698	0,0788	0,0878	0,1075	0,1273	0,1453	0,1650
	300	0,0147	0,0276	0,0384	0,0513	0,0621	0,0708	0,0837	0,0945	0,1053	0,1290	0,1527	0,1743	0,1980
	400	0,0172	0,0322	0,0448	0,0599	0,0725	0,0826	0,0977	0,1103	0,1229	0,1505	0,1782	0,2034	0,2310
	450	0,0196	0,0368	0,0512	0,0684	0,0828	0,0944	0,1116	0,1260	0,1404	0,1720	0,2036	0,2324	1,2640
	500	0,0221	0,0414	0,0576	0,0770	0,0932	0,1062	0,1256	0,1418	0,1580	0,1935	0,2291	0,2615	0,2970
	600	0,0245	0,0460	0,0640	0,0855	0,1035	0,1180	0,1395	0,1575	0,1755	0,2150	0,2545	0,2905	0,3300
	700	0,0294	0,0552	0,0768	0,1026	0,1242	0,1416	0,1674	0,1890	0,2106	0,2580	0,3054	0,3486	0,3960
	800	0,0343	0,0644	0,0896	0,1197	0,1449	0,1652	0,1953	0,2205	0,2457	0,3010	0,3563	0,4067	0,4620
	900	0,0392	0,0736	0,1024	0,1368	0,1656	0,1888	0,2232	0,2520	0,2808	0,3440	0,4072	0,4648	0,5280
	1000	0,0441	0,0828	0,1152	0,1539	0,1863	0,2124	0,2511	0,2835	0, 3159	0,3870	0,4581	0,5229	0,5940
	1100	0,0490	0,0920	0,1280	0,1710	0,2070	0,2360	0,2790	0,3150	0,3510	0,4300	0,5090	0,5810	0,6600
	1200	0,0539	0,1012	0,1408	0,1881	0,2277	0,2596	0,3039	0,3465	0,3861	0,4730	0,5599	0,6391	0,7260
		0,0588	0,1104	0,1536	0,2052	0,2484	0,2832	0,3348	0,3780	0,4212	0,5160	0,6108	0,6972	0,7920

imperial System - FT^2

HEIGHT Inches	WIDTH - Inches												
	12	14	16	18	20	22	24	26	28	30	32	34	36
12	.300	.346	.400	.452	.505	.557	.610	.663	.716	.769	.821	.874	.927
14	.355	.419	.483	.547	.611	.675	.739	.803	.866	.930	.994	1.06	1.12
16	.417	.492	.567	.642	.717	.792	.867	.942	1.02	1.09	1.17	1.24	1.32
18	.479	.565	.651	.737	.823	.910	1.00	1.08	1.17	1.25	1.34	1.43	1.51
20	.541	.638	.735	.832	.930	1.03	1.12	1.22	1.32	1.42	1.51	1.61	1.71
22	.603	.711	.819	.928	1.04	1.14	1.25	1.36	1.47	1.58	1.69	1.79	1.90
24	.664	.784	.903	1.02	1.14	1.26	1.38	1.50	1.62	1.74	1.86	1.98	2.10
26	.726	.857	.987	1.12	1.25	1.82	1.51	1.64	1.77	1.90	2.03	2.16	2.29
28	.788	.930	1.07	1.21	1.35	1.50	1.64	1.78	1.92	2.06	2.20	2.35	2.49
30	.850	1.00	1.16	1.31	1.46	1.61	1.77	1.92	2.07	2.23	2.38	2.53	2.68
32	.912	1.08	1.24	1.40	1.57	1.73	1.89	2.06	2.22	2.39	2.55	2.71	2.88
34	.973	1.15	1.32	1.50	1.67	1.85	2.02	2.20	2.37	2.55	2.72	2.90	3.07
36	1.04	1.22	1.41	1.59	1.78	1.97	2.15	2.34	2.52	2.71	2.90	3.08	3.27

Note: Effective pressure areas for non standard size can be interpolated from the above data

Example :
Exhaust requirements for 1500 CFM with a pressure of 0.123" H$_2$O.
1) From the pressure requirements table, it shows that a 1000 fpm velocity results an exhaust pressure of 0.123" of H$_2$O.
2) Determine the Effective Pressure Area.

$$\text{Effective Pressure Area} = \frac{\text{CFM}}{\text{Velocity}} = \frac{1500}{1000} \quad 1.5 \text{ ft}^2.$$

3) From the table, the 1.5 ft^2 requirement is suitable for the following sizes: 32"x20" high, 26"x24" high, etc.

Nots : For other sizes not shown in the table, the approximate Effective Pressure Area can be calculated by this equation :
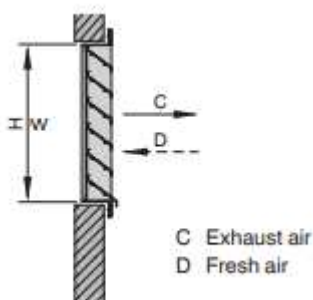
$$\text{Effective Pressure Area} = (0.5H - 0.104)(W - 0.073)(0.8)$$
Where : H = Height, ft. & W = Width, ft.

EXL161/261- EXTERNAL WEATHER LOUVERS WITH SMALL BLADE

Differential Pressure and Sound Power Level - metric

v	Installation type			
	C		D	
	Δp_1	L_{WA}	Δp_1	L_{WA}
m/s	Pa	dB(A)	Pa	dB(A)
1.5	10	32	14	34
2	20	41	25	43
2.5	30	48	35	50
3	45	54	55	56
4	75	63	95	66
5	115	70	145	73
6	170	76	210	79

C   Exhaust air
D   Fresh air

Pressure Requirements - imperial

Velocity FPM	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
EXHUAST Pt	.005	.011	.019	.031	.044	.063	.081	.101	.123	.153	.180	.210	.249	.283
INTAKE Pt	-.007	-.017	-.029	-.047	-.065	-.094	-.121	-.150	-.184	-.228	-.269	-.312	-.371	-.422

Note: Pt – Total Pressure in inches of Water.
Velocity, fpm - Velocity corresponding to effective pressure area.
CFM = Velocity x Effective pressure Area

INSTALLATION DETAILS

Screw Mounting
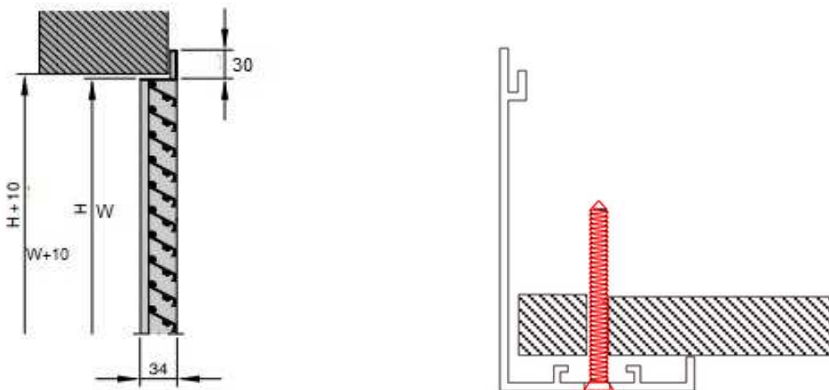
EXL161/261- EXTERNAL WEATHER LOUVERS WITH SMALL BLADE

ORDER CODE

EXL-161	F22	00	RAL9010	SM	N 400X300

EXL-161: Z-Bladed
EXL-261: Curv.-Bladed

F22: Frame=22 mm
F32: Frame=32,5 mm

00: No Wire Screen
01: Wire Screen Added

N: Neck Size
F : Frame Size

00: No Mounting
SM: Screw Mounting

00: No coating
EX: Eloxal Paint Coating
RAL----: Oven Drying Paint Coating