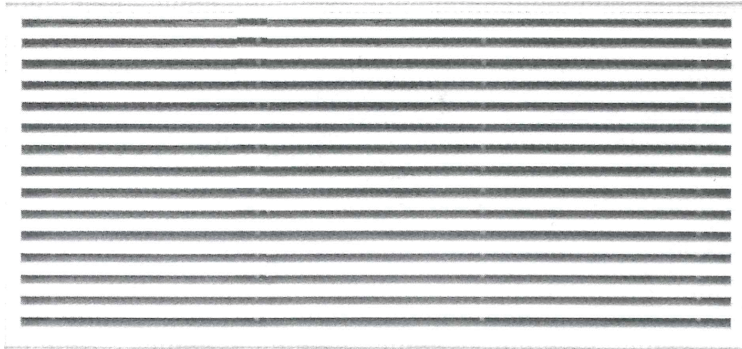
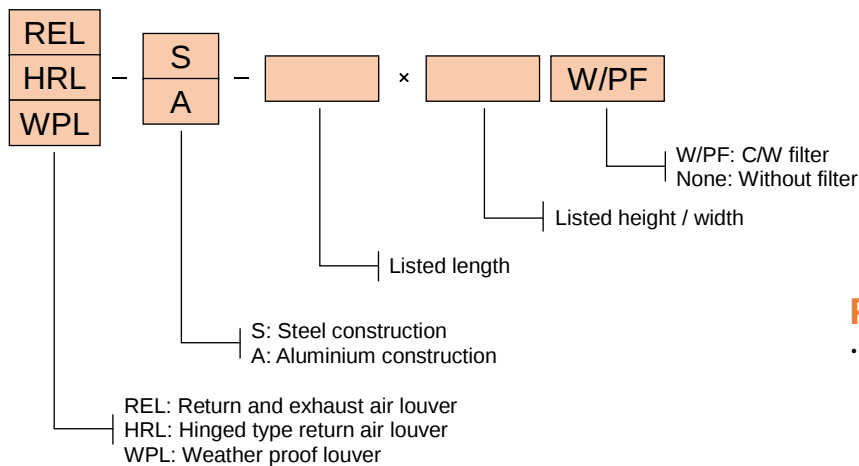


REL Return and exhaust Air Louvers HRL Hinged Type Return Air Louvers WPL Weather Proof Louvers



A complete range of air louver with similar appearance to suit several applications in HVAC system. These louvers offer a large free area with a semi-sight proof design. REL & HRL louvers are designed for installation in sidewall and ceiling. WPL louvers are designed for installation in exterior wall providing an effective weather proof protection.

Order Code



Features

General

- Choice of extruded aluminium or sheet steel construction
- Fixed horizontal louvers blades setting at 45° overlapping each other.

HRL Louvers

- Core is hinged to outer frame, release two metal locking device to swing out core and expose filter.

WPL Louvers

- Suitable for both intake and exhaust applications
- Louver blades with a weather stop at its upper edge (see drawing) providing an effective weather proof protection

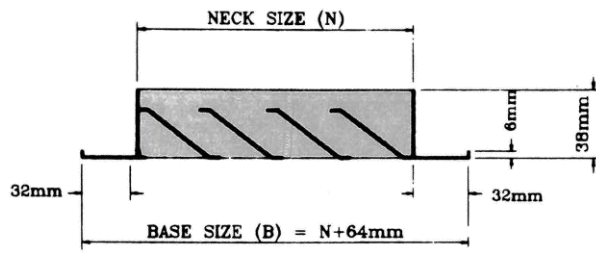
Accessories

- Panel filters
Filter holding brackets fitted onto inner face of core to allow filter slide in/out. Filter with frames fabricated from aluminium sheet and aluminium foil filter media. Standard filter thickness is 25mm.

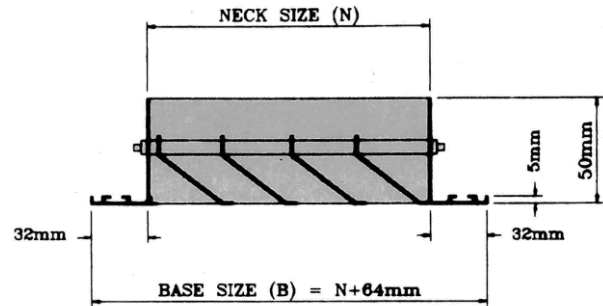
Finish

- Steel construction
Standard finish is white backed enamel. Special colour finishes available to match architectural requirements
- Extruded aluminium construction
Standard finish natural anodize. Baked enamel or special anodize finishes available to match architectural requirements.

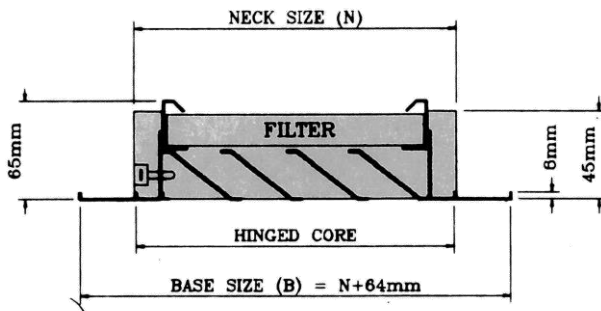
Note: For special finishes and requirements, please specify when ordering.



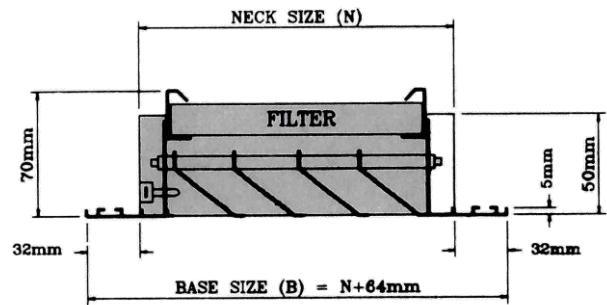
REL-S
RETURN AND EXHAUST AIR
LOUVER (STEEL)



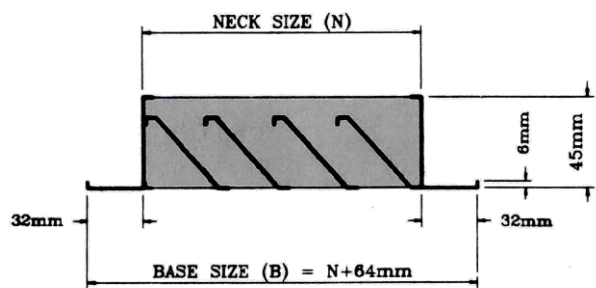
REL-A
RETURN AND EXHAUST AIR
LOUVER (ALUMINIUM)



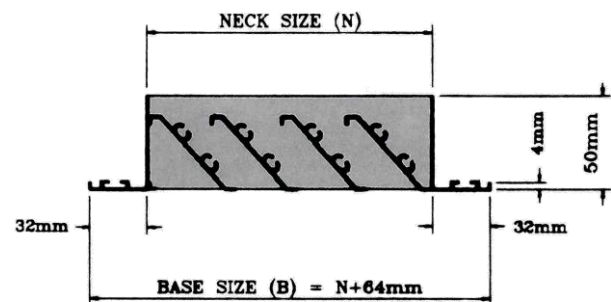
HRL-S
HINGED TYPE RETURN AIR
LOUVER (STEEL)



HRL-A
HINGED TYPE RETURN AIR
LOUVER (ALUMINIUM)



WPL-S
WEATHER PROOF LOUVER
(STEEL)



WPL-A
WEATHER PROOF LOUVER
(ALUMINIUM)

REL Return And Exhaust Air Louvers

Static Pressure Drop														
Velocity (m/s)	2	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8	9
Intake (Pa)	4	6	8	11	14	18	22	27	32	37	43	50	56	71

Effective Pressure Area (sq.m)													
Neck Width (mm) \ Neck Height (mm)	150	200	250	300	350	400	450	500	600	750	900	1050	1200
150	0.009	0.012	0.015	0.018	0.021	0.024	0.027	0.030	0.035	0.044	0.053	0.062	0.081
200	0.013	0.017	0.021	0.025	0.029	0.034	0.038	0.042	0.050	0.063	0.076	0.088	0.101
250	0.016	0.022	0.027	0.033	0.038	0.044	0.049	0.055	0.065	0.082	0.098	0.114	0.131
300	0.020	0.027	0.034	0.040	0.047	0.054	0.060	0.067	0.080	0.100	0.120	0.141	0.161
350	0.024	0.032	0.040	0.048	0.056	0.064	0.072	0.080	0.095	0.119	0.143	0.167	0.191
400	0.028	0.037	0.046	0.055	0.064	0.074	0.083	0.092	0.110	0.138	0.166	0.193	0.221
450	0.031	0.042	0.052	0.063	0.073	0.084	0.094	0.105	0.125	0.159	0.188	0.219	0.251
500	0.035	0.047	0.059	0.070	0.082	0.094	0.105	0.117	0.140	0.176	0.210	0.246	0.281
600	0.043	0.057	0.071	0.085	0.099	0.118	0.142	0.170	0.213	0.256	0.298	0.341	0.391
750	0.054	0.072	0.090	0.108	0.126	0.144	0.162	0.180	0.215	0.269	0.323	0.377	0.431
900	0.065	0.087	0.109	0.130	0.152	0.174	0.195	0.217	0.260	0.326	0.390	0.456	0.521
1050	0.076	0.102	0.127	0.153	0.178	0.204	0.229	0.255	0.305	0.382	0.458	0.534	0.611
1200	0.088	0.117	0.146	0.175	0.204	0.234	0.263	0.292	0.350	0.438	0.526	0.613	0.701

HRL Hinged Type Return Air Louvers

Static Pressure Drop														
Velocity (m/s)	2	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8	9
Intake (Pa)	4	6	8	11	14	18	22	27	32	37	43	50	56	71

Effective Pressure Area (sq.m)													
Neck Width (mm) \ Neck Height (mm)	150	200	250	300	350	400	450	500	600	750	900	1050	1200
150	-	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.022	0.040	0.034	0.040	0.046
200	-	0.010	0.013	0.016	0.020	0.023	0.026	0.029	0.036	0.046	0.055	0.065	0.075
250	-	-	0.018	0.023	0.027	0.032	0.036	0.041	0.050	0.063	0.077	0.090	0.104
300	-	-	-	0.029	0.035	0.040	0.046	0.052	0.063	0.081	0.098	0.115	0.132
350	-	-	-	-	0.042	0.049	0.056	0.063	0.077	0.098	0.119	0.140	0.161
400	-	-	-	-	-	0.058	0.066	0.074	0.091	0.116	0.140	0.165	0.189
450	-	-	-	-	-	-	0.076	0.086	0.105	0.133	0.162	0.190	0.219
500	-	-	-	-	-	-	-	0.097	0.118	0.151	0.183	0.215	0.247
600	-	-	-	-	-	-	-	-	0.146	0.186	0.225	0.265	0.305
750	-	-	-	-	-	-	-	-	-	0.238	0.284	0.340	0.391
900	-	-	-	-	-	-	-	-	-	-	0.353	0.415	0.477
1050	-	-	-	-	-	-	-	-	-	-	-	0.490	0.564
1200	-	-	-	-	-	-	-	-	-	-	-	-	0.650

WPL Weather Proof Louvers

Static Pressure Drop														
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 (Pa)	2	4	6	10	14	20	26	32	40	48	58	68	78	90
Exhaust (Pa)	1	2	4	7	10	13	17	22	27	32	38	45	52	60

Effective Pressure Area (sq.m)														
Neck Width (mm)	300	350	400	450	500	600	750	900	1050	1200	135	1500	1800	
Neck Height (mm)														
300	0.035	0.040	0.046	0.052	0.057	0.069	0.086	0.103	0.120	0.138	0.155	0.172	0.207	
350	0.041	0.048	0.055	0.062	0.069	0.082	0.103	0.124	0.144	0.165	0.185	0.206	0.247	
400	0.048	0.056	0.064	0.072	0.080	0.096	0.120	0.144	0.168	0.192	0.216	0.240	0.288	
450	0.055	0.064	0.073	0.082	0.091	0.109	0.137	0.164	0.191	0.219	0.246	0.273	0.328	
500	0.061	0.071	0.082	0.092	0.102	0.123	0.154	0.184	0.215	0.246	0.276	0.307	0.369	
600	0.075	0.087	0.100	0.112	0.125	0.150	0.187	0.225	0.262	0.300	0.337	0.375	0.450	
750	0.095	0.111	0.127	0.143	0.159	0.190	0.238	0.286	0.333	0.381	0.428	0.476	0.571	
900	0.115	0.135	0.154	0.173	0.192	0.230	0.289	0.346	0.404	0.462	0.519	0.577	0.693	
1050	0.136	0.158	0.181	0.204	0.226	0.271	0.339	0.407	0.475	0.543	0.610	0.678	0.814	
1200	0.156	0.182	0.206	0.234	0.260	0.312	0.390	0.468	0.546	0.624	0.702	0.780	0.936	
1350	0.176	0.206	0.235	0.264	0.294	0.352	0.457	0.529	0.617	0.705	0.793	0.881	1.057	
1500	0.196	0.228	0.262	0.295	0.327	0.393	0.491	0.589	0.687	0.786	0.884	0.982	1.179	
1800	0.237	0.276	0.316	0.355	0.395	0.474	0.592	0.710	0.829	0.948	1.066	1.185	1.422	

Notes on performance data

- Velocity corresponding to effective pressure area.
- Air flow (m³/s) = Velocity (m/s) x Effective Pressure Area (m²).

Selection Examples

Example No. 1

900 x 600 mm weather proof louver is selected for air intake. The airflow rate is 0.9 m³/s, determine the static pressure required.

1. Using the performance table, the effective pressure area of the concerned louver is 0.23 m².
2. Calculate the velocity corresponding to the effective pressure area.

$$\frac{\text{Air Flow Rate (m}^3\text{/s)}}{\text{Effective Pressure Area (m}^2\text{)}} = \text{Velocity (m/s)}$$

$$\frac{0.9 \text{ m}^3}{0.23 \text{ m}^2} = 4 \text{ m/s}$$
3. Using the performance table, the static pressure required is 26 Pa.

Example No. 2

The air flow rate of a return air louver is 0.58 m³/s and the maximum static pressure drop is 15 Pa. Select the size of hinged type return air louver

1. Determine the maximum velocity using the performance table. The velocity is 4 m/s against a pressure drop of 14 Pa.
2. Calculate the effective pressure area required

$$\frac{\text{Air Flow Rate (m}^3\text{/s)}}{\text{Velocity (m/s)}} = \text{Effective Pressure Area (m}^2\text{)}$$

$$\frac{0.58 \text{ m}^3\text{/s}}{4 \text{ m/s}} = 0.145 \text{ m}^2$$
3. As shown on the performance table, the effective pressure area of 600 x 600mm louver is 0.146 m². Therefore, 600 x 600mm louver or larger size can be selected.