



المالك للمنتجات الهندسية
AL MULLA ENGINEERING PRODUCTS



VENTUM
by AL MULLA GROUP

Louvers



Air Duct and Air Movement Products (AD&) manufacturing facilities of Al Mulla Group are located in Kuwait.

Al Mulla Industries (AMI) covers the Kuwait market requirements through a reliable transport network.

Louvers

Al Mulla Industries manufacture wide range of conventional stationary blade louvers, offer considerable design flexibility and good protection from rain, dust, sand infiltration when applied properly in ambient condition. These louvers offer high free area and low airflow resistance. These are available in various finishes and color shades.

- **Louver - 4" Depth**
- **Louver - 2" Depth**
- **Sand Trap Louver**

Promoted by Al Mulla Engineering Products and Al Mulla International General Trading of Equipment & Machinery Co. W.L.L. on behalf of Al Mulla Industries, with manufacturing facilities in Kuwait

■ Why Do Customers Choose Us

The greatest strengths of Al Mulla Industries are its skilled and experienced workforce, in addition to the use of latest design software, codes, and QHSE (Quality, Health, Safety, and Environment) standards that conform to ISO 9001, 14001 and 18001. In addition to Airduct and Air Movement Products, Al Mulla Industries is also a leading manufacturer and fabricator of quality steel products that cater to a wide variety of industries and clients in Kuwait such as Oil & Gas, Logistics, Chemical Industry, Construction, Cleaning and the Military.

The Company's manufacturing units are located in Kuwait. The plant in Kuwait has a total work-area of over 13,000 sq m. The Company has a team of highly skilled and trained work force, and is equipped with modern machinery as per latest standards in order to meet environmental requirements.





Louver - 4" Depth

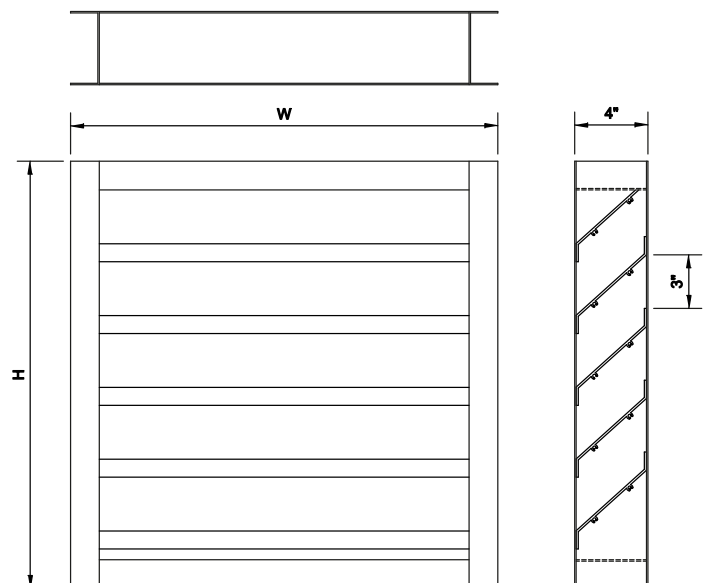
AM-L-04



Al Mulla manufactured louvers are carefully designed for prevention of wind, sand and rain water penetration. These louvers can also be installed with additional accessories such as filters, bird screens & insect screens as an additional safety feature. Our louvers are extremely suitable for ventilation as well as for aesthetic appearance, thus making it a preferred choice for architectural louvers as well.

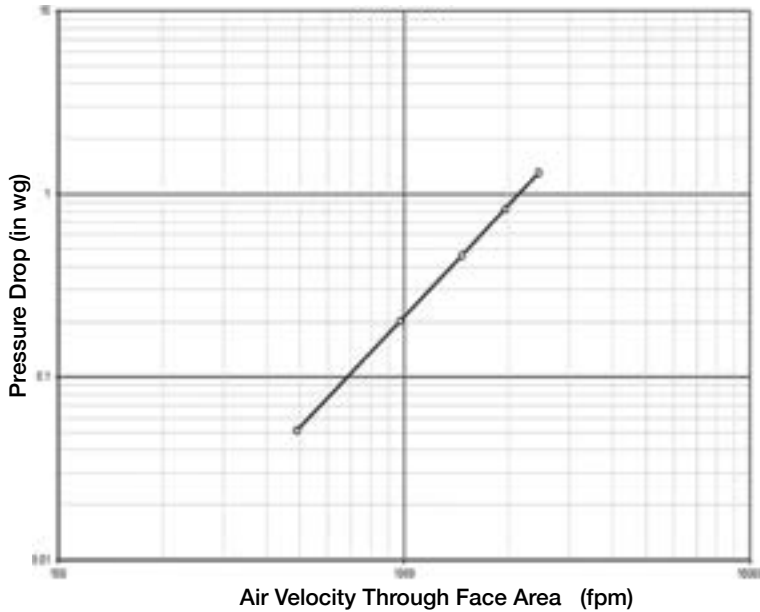
Technical Details:

Component	Specification
Model No.	AM-L-04
Blade Depth	4" (100 mm)
Blade Profile	"Z"
Fixed Blade Angle	45°
Finish	White polyester powder coating finish (RAL9010 & 9016) is provided as a standard
Blade Thickness	2.0 mm
Frame Thickness	2.0 mm
Free Area	50%
Optional Features	<ul style="list-style-type: none"> Louvers are available in square/ rectangular dimensions Any RAL colour available upon request Baked Enamel finish available on request Bird Screen/ Insect screen/ Filter



AIR PERFORMANCE

Model Name : Louver
 Model Number : AM-L-04
 Size : 48 Inch Square O.D. nominal
 Blade Orientation : Horizontal
 Flow Direction : Intake
 Louver Type : Drainable



Device Test Results at Standard Air:

Det. No.	Q_{DS} (cfm)	$V_{Free Area}$ (fpm)	ΔP_{DS} (in wg.)	C_D	C_D Class
1	20136	2983	1.691	31.1%	2
2	17443	2584	1.259	31.2%	2
3	13415	1987	0.730	31.5%	2
4	8393	1243	0.283	31.6%	2
5	2997	444	0.038	31.0%	2



Al Mulla Industries certifies that the Stationary louver shown herein is licensed to bear the AMCA seal for model AM-L-04. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Ratings

Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-L-12 (Pressure Drop), Fig. 5.5.



Free area in square feet for 4" depth louvers

		Height in Inches																		
		12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
Width in Inches	12	0.159	0.282	0.530	0.653	0.901	1.024	1.272	1.395	1.643	1.766	2.013	2.137	2.384	2.508	2.755	2.879	3.126	3.364	3.497
	18	0.274	0.488	0.915	1.128	1.555	1.768	2.195	2.409	2.836	3.049	3.476	3.689	4.116	4.330	4.757	4.970	5.397	5.808	6.037
	24	0.390	0.693	1.299	1.603	2.209	2.512	3.119	3.422	4.029	4.332	4.939	5.242	5.848	6.152	6.758	7.061	7.668	8.252	8.578
	30	0.505	0.898	1.684	2.077	2.863	3.257	4.043	4.436	5.222	5.615	6.401	6.794	7.580	7.973	8.760	9.153	9.939	10.696	11.118
	36	0.620	1.103	2.069	2.552	3.518	4.001	4.966	5.449	6.415	6.898	7.864	8.347	9.312	9.795	10.761	11.244	12.210	13.140	13.658
	42	0.736	1.309	2.454	3.027	4.172	4.745	5.890	6.463	7.608	8.181	9.326	9.899	11.044	11.617	12.762	13.335	14.480	15.584	16.199
	48	0.851	1.514	2.839	3.501	4.826	5.489	6.750	7.476	8.801	9.464	10.789	11.451	12.776	13.439	14.764	15.426	16.751	18.028	18.739
	54	0.967	1.719	3.224	3.976	5.480	6.233	7.737	8.490	9.994	10.747	12.251	13.004	14.508	15.261	16.765	17.518	19.022	20.472	21.279
	60	1.082	1.924	3.608	4.450	6.135	6.977	8.661	9.503	11.188	12.030	13.714	14.556	16.240	17.082	18.767	19.609	21.293	22.916	23.819
	66	1.197	2.129	3.993	4.925	6.789	7.721	9.585	10.517	12.381	13.313	15.176	16.108	17.972	18.904	20.768	21.700	23.564	25.360	26.360
	72	1.313	2.335	4.378	5.400	7.443	8.465	10.509	11.530	13.574	14.596	16.639	17.661	19.704	20.726	22.770	23.791	25.835	27.804	28.900
	78	1.428	2.540	4.763	5.874	8.098	9.209	11.432	12.544	14.767	15.878	18.102	19.213	21.436	22.548	24.771	25.882	28.106	30.248	31.440
	84	1.544	2.745	5.148	6.349	8.752	9.953	12.356	13.557	15.960	17.161	19.564	20.765	23.168	24.370	26.772	27.974	30.376	32.692	33.981
	90	1.659	2.950	5.533	6.824	9.406	10.697	13.280	14.571	17.153	18.444	21.027	22.318	24.900	26.191	28.774	30.065	32.647	35.136	36.521
	96	1.774	3.155	5.917	7.298	10.060	11.441	14.203	15.584	18.346	19.727	22.489	23.870	26.632	28.013	30.775	32.156	34.918	37.580	39.061
	102	1.890	3.361	6.302	7.773	10.715	12.185	15.127	16.598	19.539	21.010	23.952	25.423	28.364	29.835	32.777	34.247	37.189	40.024	41.601
108	2.005	3.566	6.687	8.248	11.369	12.929	16.051	17.611	20.733	22.293	25.414	26.975	30.096	31.657	34.778	36.339	39.460	42.468	44.142	
114	2.121	3.771	7.072	8.722	12.023	13.674	16.974	18.625	21.926	23.576	26.877	28.527	31.828	33.479	36.779	38.430	41.731	44.912	46.682	
120	2.236	3.976	7.457	9.197	12.677	14.418	17.898	19.638	23.119	24.859	28.339	30.080	33.560	35.300	38.781	40.521	44.002	47.356	49.222	



Al Mulla Industries certifies that the Stationary louver shown herein is licensed to bear the AMCA seal for model AM-L-04. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Ratings

Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-L-12 (Pressure Drop), Fig. 5.5.



Louver - 2" Depth

AM-L-02



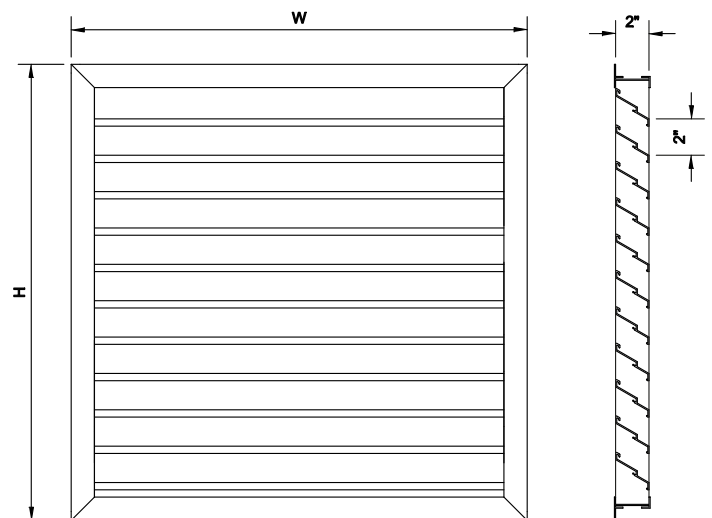
Al Mulla manufactured Louvers are carefully designed for prevention of Wind and rain water penetration.

These Louvers can also be installed with additional accessories such as Filters, bird screens & insect screens as an additional safety feature.

Our Louvers are extremely suitable for ventilation as well as for aesthetic appearance, thus making it a preferred choice for architectural louvers as well.

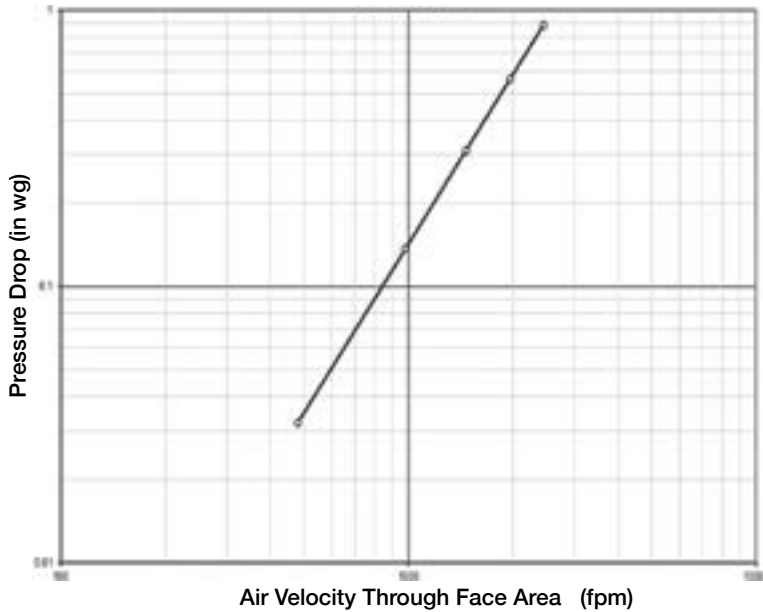
Technical Details:

Component	Specification
Model No.	AM-L-02
Blade Depth	2" (50 mm)
Blade Profile	"J"
Fixed Blade Angle	30°
Finish	White Polyester powder coating finish (RAL 9010 & 9016) is provided as a standard.
Blade Thickness	1.6mm
Frame Thickness	1.6mm
Free Area	60%
Optional Features	<ul style="list-style-type: none"> Louvers are available in square / Rectangular dimensions. Any RAL Colour available upon request Baked Enamel finish available on request Bird Screen / Insect screen / Filter



AIR PERFORMANCE

Model Name : Louver
 Model Number : AM-L-02
 Size : 48 Inch Square O.D. nominal
 Blade Orientation : Horizontal
 Flow Direction : Exhaust
 Louver Type : Drainable



Device Test Results at Standard Air:

Det. No.	Q_{DS} (cfm)	$V_{Free Area}$ (fpm)	ΔP_{DS} (in wg.)	C_D	C_D Class
1	21362	2450	0.89	38.6%	2
2	17078	1958	0.57	38.6%	2
3	12727	1460	0.31	38.8%	2
4	8542	980	0.14	39.2%	2
5	4184	480	0.03	39.7%	2



Al Mulla Industries certifies that the Stationary louver shown herein is licensed to bear the AMCA seal for model AM-L-02. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Ratings

Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-L-12 (Pressure Drop), Fig. 5.5.

Free area in square feet for 2" depth louvers

		Width in Inches																		
		12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
Height in Inches	12	0.363	0.592	0.822	1.051	1.280	1.509	1.739	1.968	2.197	2.427	2.656	2.885	3.115	3.344	3.573	3.802	4.032	4.261	4.490
	18	0.606	0.989	1.371	1.754	2.137	2.519	2.902	3.285	3.668	4.050	4.433	4.816	5.198	5.581	5.964	6.346	6.729	7.112	7.495
	24	0.849	1.385	1.921	2.457	2.993	3.529	4.066	4.602	5.138	5.674	6.210	6.746	7.282	7.818	8.354	8.891	9.427	9.963	10.499
	30	1.092	1.781	2.471	3.160	3.850	4.539	5.229	5.918	6.608	7.297	7.987	8.677	9.366	10.056	10.745	11.435	12.124	12.814	13.503
	36	1.335	2.178	3.021	3.863	4.706	5.549	6.392	7.235	8.078	8.921	9.764	10.607	11.450	12.293	13.136	13.979	14.822	15.665	16.508
	42	1.578	2.574	3.570	4.567	5.563	6.559	7.556	8.552	9.548	10.545	11.541	12.537	13.534	14.530	15.526	16.523	17.519	18.516	19.512
	48	1.820	2.970	4.120	5.270	6.420	7.569	8.719	9.869	11.019	12.168	13.318	14.468	15.618	16.767	17.917	19.067	20.217	21.366	22.516
	54	2.063	3.367	4.670	5.973	7.276	8.579	9.882	11.186	12.489	13.792	15.095	16.398	17.701	19.005	20.308	21.611	22.914	24.217	25.521
	60	2.306	3.763	5.219	6.676	8.133	9.589	11.046	12.502	13.959	15.416	16.872	18.329	19.785	21.242	22.699	24.155	25.612	27.068	28.525
	66	2.549	4.159	5.769	7.379	8.989	10.599	12.209	13.819	15.429	17.039	18.649	20.259	21.869	23.479	25.089	26.699	28.309	29.919	31.529
	72	2.792	4.555	6.319	8.082	9.846	11.609	13.373	15.136	16.899	18.663	20.426	22.190	23.953	25.716	27.480	29.243	31.007	32.770	34.534
	78	3.035	4.952	6.869	8.785	10.702	12.619	14.536	16.453	18.370	20.286	22.203	24.120	26.037	27.954	29.871	31.787	33.704	35.621	37.538
	84	3.278	5.348	7.418	9.489	11.559	13.629	15.699	17.770	19.840	21.910	23.980	26.051	28.121	30.191	32.261	34.331	36.402	38.472	40.542
	90	3.521	5.744	7.968	10.192	12.415	14.639	16.863	19.086	21.310	23.534	25.757	27.981	30.205	32.428	34.652	36.876	39.099	41.323	43.547
	96	3.764	6.141	8.518	10.895	13.272	15.649	18.026	20.403	22.780	25.157	27.534	29.911	32.288	34.666	37.043	39.420	41.797	44.174	46.551
	102	4.007	6.537	9.068	11.598	14.128	16.659	19.189	21.720	24.250	26.781	29.311	31.842	34.372	36.903	39.433	41.964	44.494	47.025	49.555
108	4.249	6.933	9.617	12.301	14.985	17.669	20.353	23.037	25.721	28.404	31.088	33.772	36.456	39.140	41.824	44.508	47.192	49.876	52.560	
114	4.492	7.330	10.167	13.004	15.842	18.679	21.516	24.354	27.191	30.028	32.865	35.703	38.540	41.377	44.215	47.052	49.889	52.727	55.564	
120	4.735	7.726	10.717	13.707	16.698	19.689	22.680	25.670	28.661	31.652	34.642	37.633	40.624	43.615	46.605	49.596	52.587	55.577	58.568	



Al Mulla Industries certifies that the Stationary louver shown herein is licensed to bear the AMCA seal for model AM-L-02. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Ratings

Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-L-12(Pressure Drop), Fig. 5.5.



Sand Trap Louver

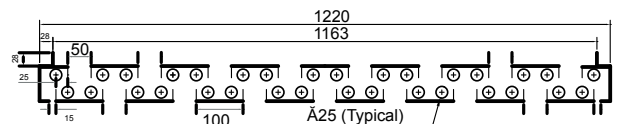
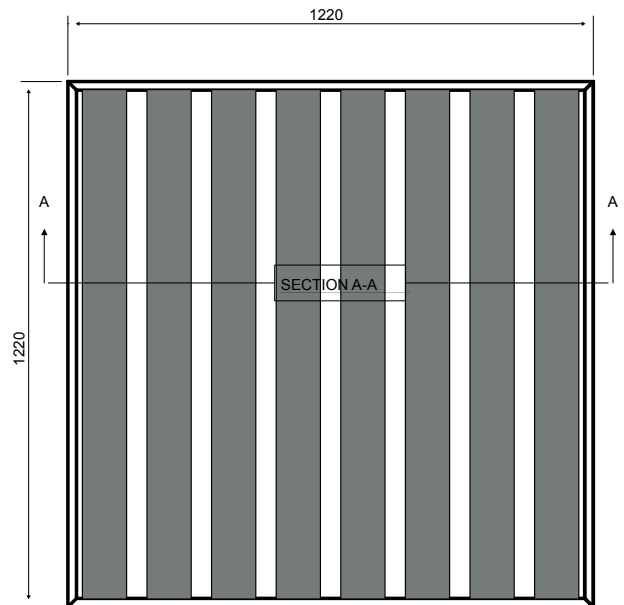
AM-L-ST

Al Mulla manufactured Sand Trap Louvers are carefully designed for fresh air intake applications to separate air-borne sand and dust from the stream of air. Our sand trap louvers are provided with self-emptying sand drain holes at the base. The louver blades are arranged in such a way that they provide a low resistance to air flow. Also optional safety features such as filters & bird screens are available, if required.



Technical Details:

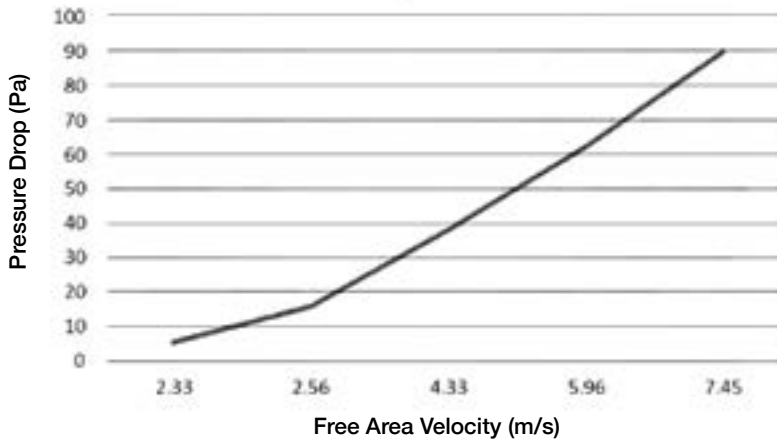
Component	Specification
Model No.	AM-L-ST
Blade Construction	Extruded Aluminum
Blade Depth	1" (25 mm)
Blade Profile	"C"
Fixed Blade Angle	90°
Finish	White Polyester powder coating finish (RAL9010 & 9016) is provided as standard
Blade Thickness	1.5mm
Frame Thickness	2.0 mm
Free Area	33% (Nominal)
Optional Features	<ul style="list-style-type: none"> Louvers are available in square/ rectangular dimensions <ul style="list-style-type: none"> Any RALcolour available upon request Baked Enamel finish available on request Bird Screen/ Filter



AIR PERFORMANCE

Model Name : Sand Trap Louver
 Model Number : AM-L-ST
 Size : 1220 mm (w) x 1220 mm (h)
 Blade Orientation : Vertical
 Flow Direction : Intake

Pressure Drop of Louver



Det. No.	Pressure Drop (Pa)	Airflow Rate (m3/s)	Free Area Velocity (m/s)
1	5.3	1.02	2.33
2	15.9	1.12	2.56
3	38.1	1.90	4.33
4	62.4	2.61	5.96
5	89.9	3.27	7.45



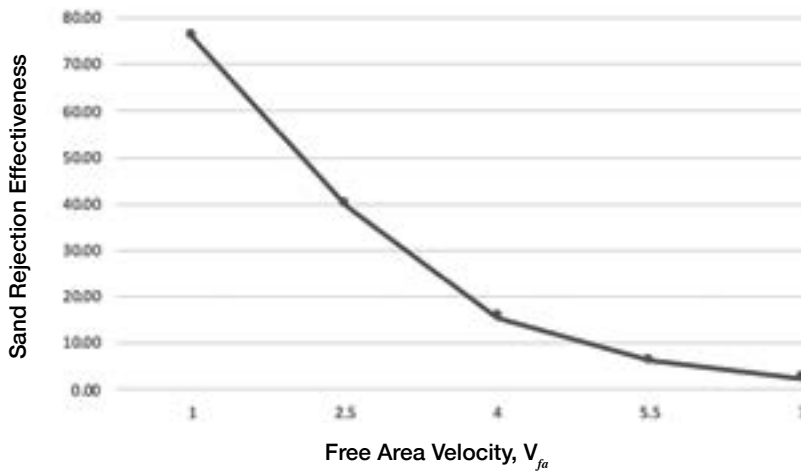
Al Mulla Industries certifies that the Sand trap Louver shown herein is licensed to bear the AMCA seal for model AM-L-ST .The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Rating and wind driven sand rejection

Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-L-12, Fig. 5.12 , 6.3.



Sand Removal Effectiveness (%)



Free Area Velocity, m/s	Sand Removal Effectiveness (%)
1	75.94
2.5	39.71
4	15.62
5.5	6.25
7	2.41

Grading of sand used for wind driven sand performance test was per ANSI/AMCA standard 500-L



Al Mulla Industries certifies that the Sand trap Louver shown herein is licensed to bear the AMCA seal for model AM-L-ST. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Rating and wind driven sand rejection

Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-L-12, Fig. 5.12 , 6.3.



Sand Trap Louver Free Area in sq. mt.

		Height in mm															
		305	457	610	762	914	1067	1219	1372	1524	1676	1829	1981	2134	2286	2438	2591
Width in mm	305	0.0215	0.0338	0.0462	0.0585	0.0708	0.0832	0.0955	0.1079	0.1202	0.1325	0.1449	0.1572	0.1696	0.1819	0.1942	0.2066
	457	0.0347	0.0546	0.0747	0.0946	0.1145	0.1345	0.1544	0.1745	0.1944	0.2143	0.2344	0.2543	0.2743	0.2942	0.3141	0.3342
	610	0.0480	0.0755	0.1032	0.1307	0.1582	0.1859	0.2134	0.2411	0.2686	0.2961	0.3238	0.3513	0.3790	0.4065	0.4340	0.4617
	762	0.0612	0.0963	0.1317	0.1668	0.2019	0.2372	0.2723	0.3077	0.3428	0.3779	0.4133	0.4484	0.4837	0.5188	0.5539	0.5893
	914	0.0745	0.1172	0.1602	0.2029	0.2456	0.2886	0.3313	0.3743	0.4170	0.4597	0.5027	0.5454	0.5884	0.6311	0.6738	0.7168
	1067	0.0877	0.1380	0.1887	0.2390	0.2893	0.3399	0.3902	0.4409	0.4912	0.5415	0.5922	0.6425	0.6931	0.7434	0.7937	0.8444
	1219	0.1010	0.1589	0.2172	0.2751	0.3330	0.3913	0.4492	0.5075	0.5654	0.6233	0.6816	0.7395	0.7978	0.8557	0.9136	0.9719
	1372	0.1142	0.1797	0.2457	0.3112	0.3767	0.4426	0.5081	0.5741	0.6396	0.7051	0.7711	0.8366	0.9025	0.9680	1.0335	1.0995
	1524	0.1275	0.2006	0.2742	0.3473	0.4204	0.4940	0.5671	0.6407	0.7138	0.7869	0.8605	0.9336	1.0072	1.0803	1.1534	1.2270
	1676	0.1407	0.2214	0.3027	0.3834	0.4641	0.5453	0.6260	0.7073	0.7880	0.8687	0.9500	1.0307	1.1119	1.1926	1.2733	1.3546
	1829	0.1540	0.2423	0.3312	0.4195	0.5078	0.5967	0.6850	0.7739	0.8622	0.9505	1.0394	1.1277	1.2166	1.3049	1.3932	1.4821
	1981	0.1672	0.2631	0.3597	0.4556	0.5515	0.6480	0.7439	0.8405	0.9364	1.0323	1.1289	1.2248	1.3213	1.4172	1.5131	1.6097
	2134	0.1805	0.2840	0.3882	0.4917	0.5952	0.6994	0.8029	0.9071	1.0106	1.1141	1.2183	1.3218	1.4260	1.5295	1.6330	1.7372
	2286	0.1937	0.3048	0.4167	0.5278	0.6389	0.7507	0.8618	0.9737	1.0848	1.1959	1.3078	1.4189	1.5307	1.6418	1.7529	1.8648
	2438	0.2070	0.3257	0.4452	0.5639	0.6826	0.8021	0.9208	1.0403	1.1590	1.2777	1.3972	1.5159	1.6354	1.7541	1.8728	1.9923
2591	0.2202	0.3465	0.4737	0.6000	0.7263	0.8534	0.9797	1.1069	1.2332	1.3595	1.4867	1.6130	1.7401	1.8664	1.9927	2.1199	



Al Mulla Industries certifies that the Sand trap Louver shown herein is licensed to bear the AMCA seal for model AM-L-ST. The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

The AMCA certified ratings Seal applies to Air Performance Rating and wind driven sand rejection

Test Information: Tested for air performance in accordance with ANSI/AMCA Standard 500-L-12, Fig. 5.12 , 6.3.





المك للمنتجات الهندسية
AL MULLA ENGINEERING PRODUCTS



Al Mulla Engineering Products Showroom,
(Near Fedex Shipping Centre Off Canada Dry Street),
Shuwaikh Industrial Area, Kuwait

Manufacturing Facilities:

Al Mulla Industries Co.

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