



المال 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

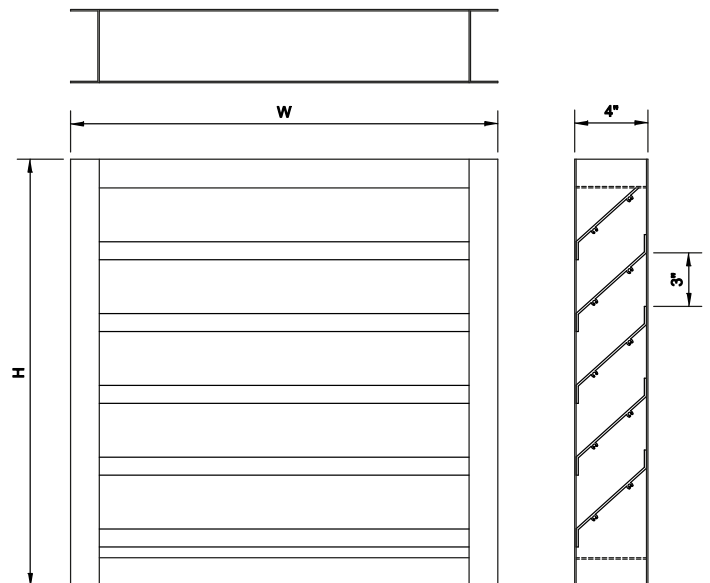
AM-L-04



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.

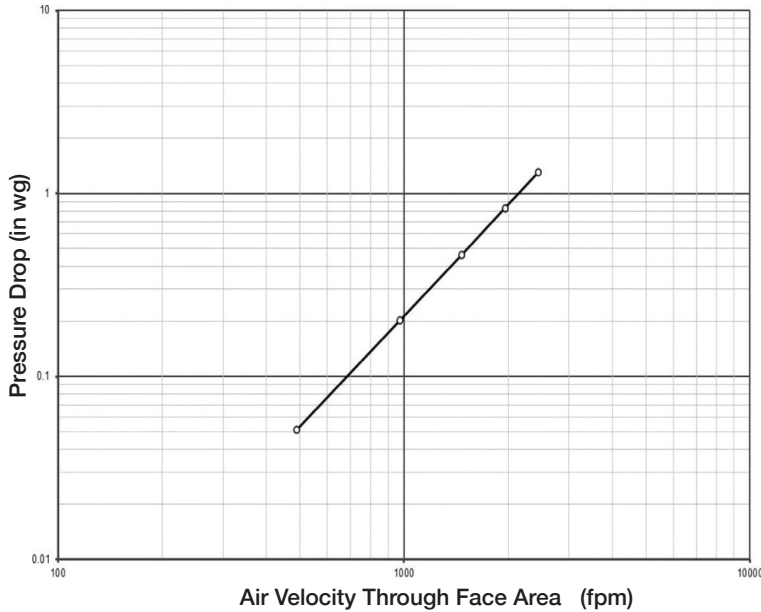
Technical Details:

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 RALcolouravailable 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	17817	2444	1.30	28.2%	3
2	14282	1959	0.83	28.3%	3
3	10712	1469	0.46	28.4%	3
4	7092	973	0.20	28.5%	3
5	3568	489	0.05	28.5%	3



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

		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	0.279	0.474	0.668	0.862	1.057	1.251	1.445	1.640	1.834	2.028	2.223	2.417	2.611	2.806	3.000	3.194	3.389	3.583	3.777
	18	0.373	0.633	0.892	1.152	1.411	1.671	1.930	2.190	2.449	2.709	2.968	3.228	3.487	3.747	4.006	4.266	4.525	4.785	5.044
	24	0.643	1.090	1.537	1.985	2.432	2.879	3.327	3.774	4.221	4.668	5.116	5.563	6.010	6.457	6.905	7.352	7.799	8.246	8.694
	30	0.746	1.265	1.784	2.303	2.822	3.341	3.860	4.379	4.898	5.417	5.936	6.455	6.974	7.493	8.012	8.531	9.050	9.569	10.088
	36	1.027	1.741	2.455	3.169	3.883	4.597	5.311	6.026	6.740	7.454	8.168	8.882	9.596	10.310	11.025	11.739	12.453	13.167	13.881
	42	1.243	2.108	2.973	3.838	4.703	5.568	6.433	7.298	8.163	9.028	9.893	10.758	11.623	12.488	13.353	14.218	15.083	15.948	16.813
	48	1.409	2.389	3.369	4.350	5.330	6.310	7.290	8.270	9.251	10.231	11.211	12.191	13.172	14.152	15.132	16.112	17.092	18.073	19.053
	54	1.616	2.741	3.865	4.990	6.114	7.239	8.363	9.488	10.612	11.737	12.861	13.986	15.110	16.235	17.359	18.484	19.608	20.733	21.857
	60	1.788	3.032	4.276	5.519	6.763	8.007	9.251	10.495	11.738	12.982	14.226	15.470	16.714	17.957	19.201	20.445	21.689	22.933	24.177
	66	1.990	3.374	4.758	6.142	7.526	8.910	10.294	11.678	13.062	14.446	15.830	17.214	18.598	19.982	21.366	22.750	24.134	25.518	26.902
	72	2.163	3.668	5.173	6.678	8.183	9.688	11.193	12.698	14.203	15.708	17.213	18.718	20.223	21.728	23.233	24.738	26.243	27.747	29.252
	78	2.367	4.014	5.661	7.308	8.954	10.601	12.248	13.895	15.541	17.188	18.835	20.482	22.129	23.775	25.422	27.069	28.716	30.363	32.009
	84	2.487	4.217	5.947	7.677	9.407	11.137	12.867	14.597	16.327	18.057	19.787	21.517	23.247	24.977	26.707	28.437	30.167	31.897	33.627
	90	2.762	4.683	6.604	8.525	10.446	12.367	14.288	16.209	18.130	20.051	21.972	23.893	25.814	27.735	29.656	31.577	33.498	35.419	37.340
	96	2.860	4.849	6.839	8.828	10.818	12.807	14.797	16.786	18.776	20.765	22.755	24.744	26.734	28.723	30.713	32.702	34.692	36.681	38.671
	102	3.135	5.315	7.496	9.676	11.857	14.037	16.218	18.398	20.579	22.759	24.940	27.121	29.301	31.482	33.662	35.843	38.023	40.204	42.384
108	3.233	5.482	7.731	9.980	12.229	14.478	16.727	18.976	21.225	23.474	25.723	27.972	30.221	32.470	34.719	36.968	39.217	41.466	43.715	
114	3.519	5.968	8.416	10.864	13.312	15.761	18.209	20.657	23.105	25.554	28.002	30.450	32.898	35.347	37.795	40.243	42.691	45.140	47.588	
120	3.606	6.114	8.623	11.131	13.640	16.148	18.657	21.165	23.674	26.182	28.691	31.199	33.708	36.216	38.725	41.233	43.742	46.250	48.759	



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



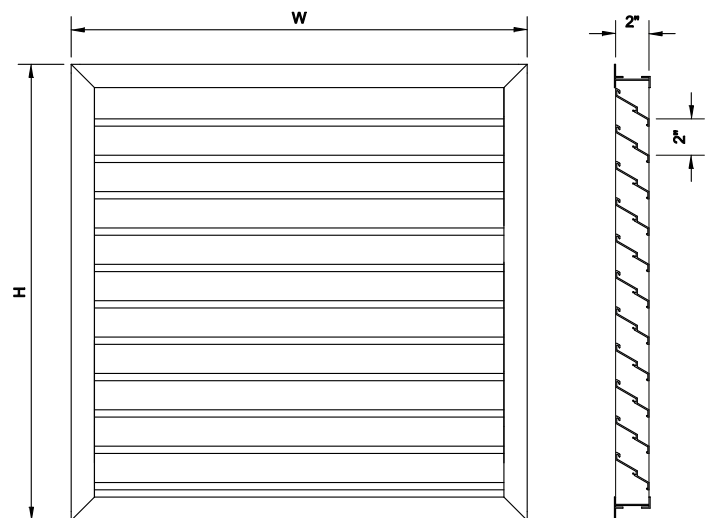
Al Mulla manufactured Louvers are carefully designed for prevention of Wind and rain water penetration.

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.

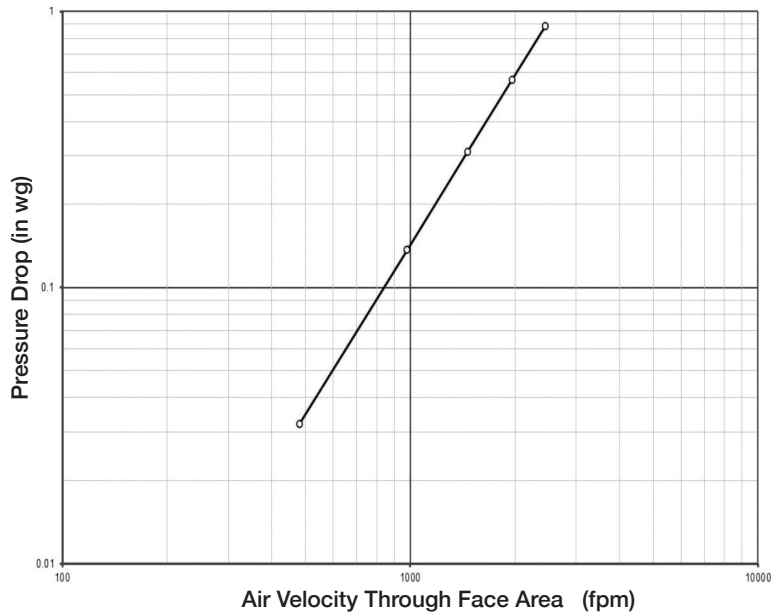
Technical Details:

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



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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

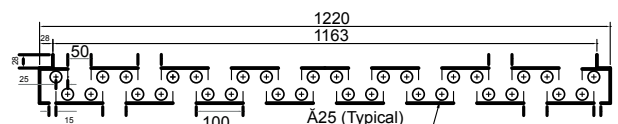
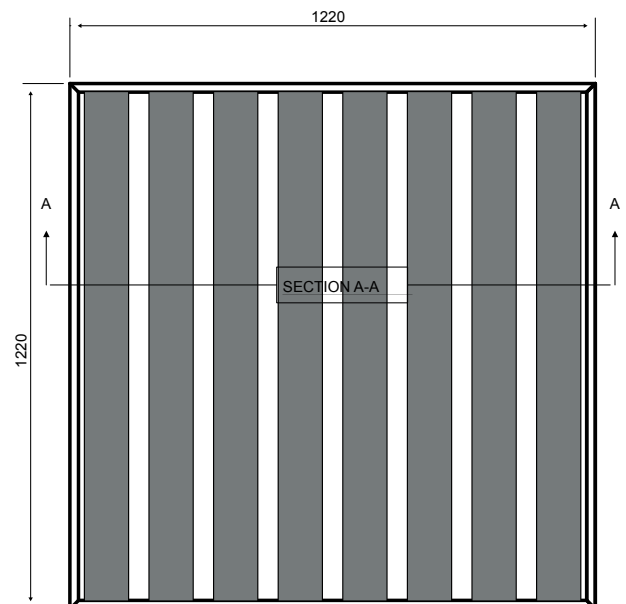
AM-L-ST

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:

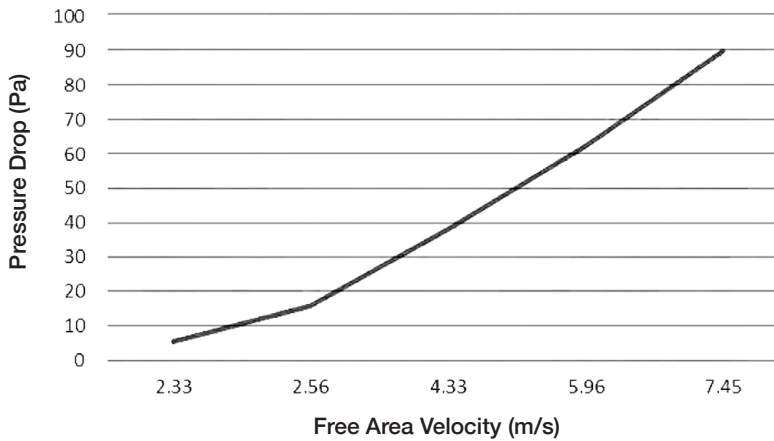
Component	Specification
Model No.	AM-L-ST
Blade Construction	Extruded Aluminum
Blade Depth	1" (25 mm)
Blade Profile	"C"
Fixed Blade Angle	90°
Finish	White Polyester powder coating finish (RAL9010 & 9016) is provided as standard
Blade Thickness	1.5mm
Frame Thickness	2.0 mm
Free Area	33% (Nominal)
Optional 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



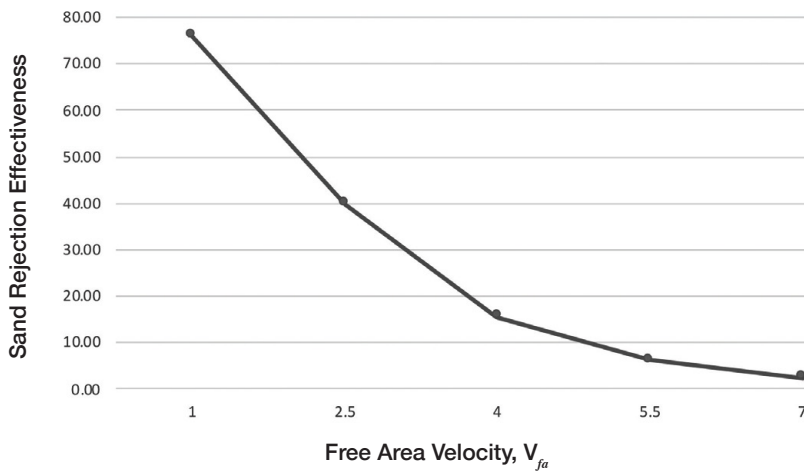
Al Mulla Industries certifies that the Sand trap Louver shown herein is licensed to bear the AMCA seal for model AM-L-ST .The rating shown are based on test and procedures performed in accordance with AMCA publication 511 and comply with the requirements of AMCA certified Rating Program.

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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