



PRODUCT DESCRIPTION

RABIE Stationary air louver used for exhaust air & fresh intake air and is composed of a set of horizontal mounted fixed blades of 30° down inclination and spaced 40mm for small blade type model FAL-40, and spaced 55mm for medium blade type model FAL-55 and of 45° down inclination and spaced 90mm for the large blade types models FAL-90-W and FAL-90-D, which allows air to pass through it while keeping out unwanted elements such as water, dirt etc.

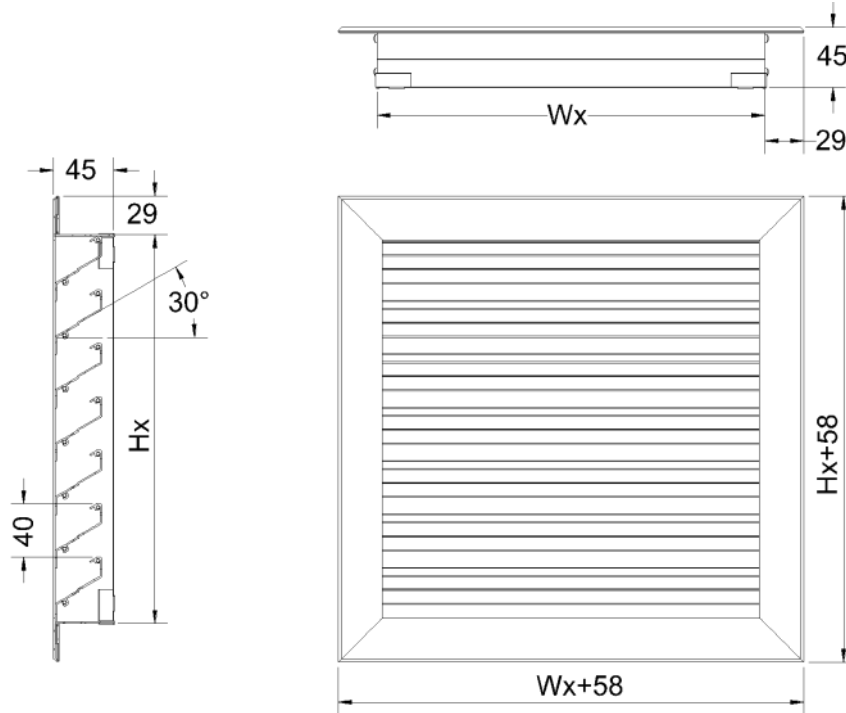
Frame and blades are manufactured from extruded aluminum alloy (6063-T6) and are delivered as Mill Finish or Polyester Powder Coated to RAL 9016 or 9010 (other colors available on request).

Options

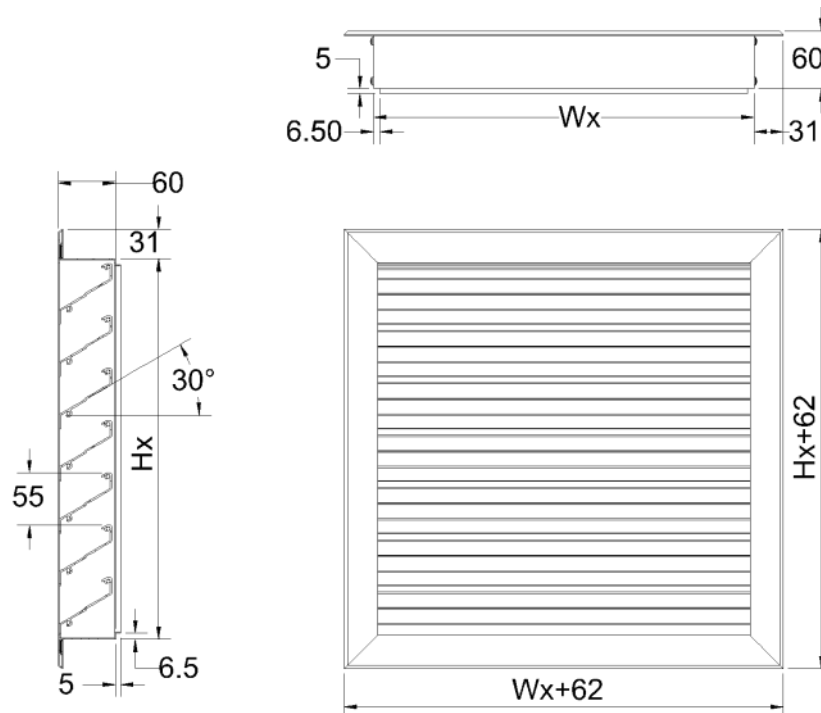
- Bird or insect screen (Galvanized steel)
- Opposed blade damper.
- Removable and washable air filters, 25 or 50 mm thick.

DIMENSIONS

FAL-40



FAL-55



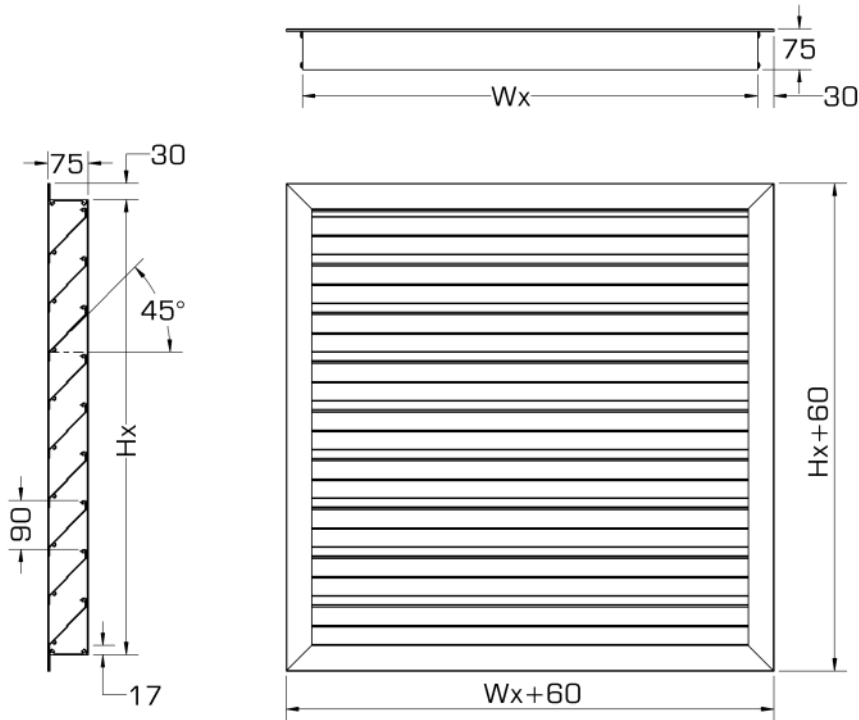
Notes:

- 1) All sizes are in mm
- 2) Wx is Exact Neck Width = W-10mm for FAL-40 and FAL-55, where W is nominal Width.
- 3) Hx is Exact Neck Height = H-10mm for FAL-40 and FAL-55, where H is nominal Height.

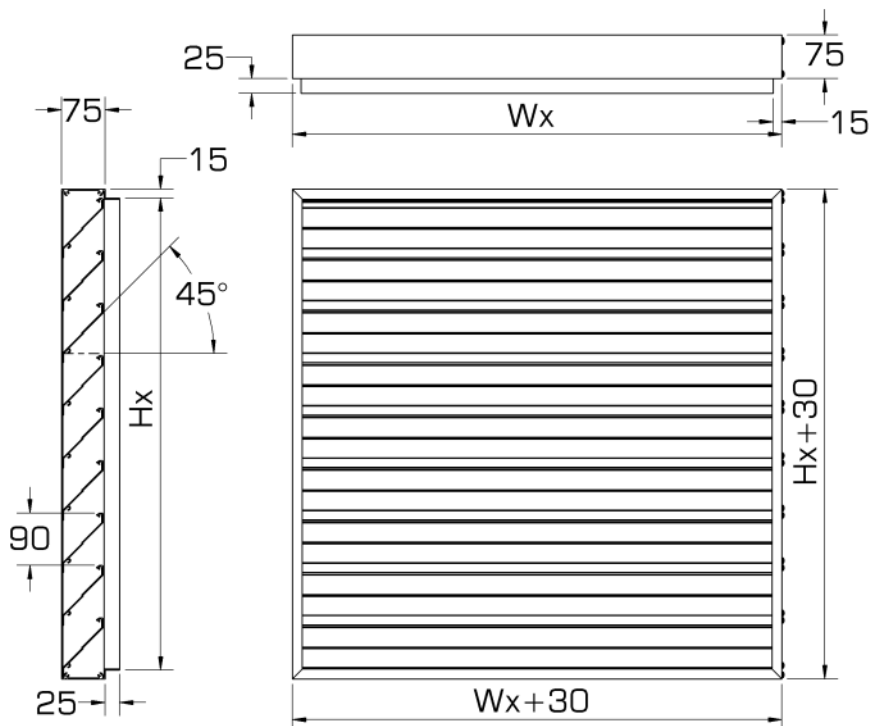


DIMENSIONS

FAL-90-W



FAL-90-D



Notes:

- 1) All sizes are in mm
- 2) Wx is Exact Neck Width = $W - 10\text{mm}$ for FAL-90-W, & $W - 5\text{mm}$ for FAL-90-D, where W is nominal Width.
- 3) Hx is Exact Neck Height = $H - 10\text{mm}$ for FAL-90-W, & $H - 5\text{mm}$ for FAL-90-D, where H is nominal Height.

PERFORMANCE

Free Area Table (FAL-40)

H	W													
mm	300	450	600	750	900	1050	1200	1350	1500	1650	1800	2000	2250	2500
300	0.033	0.050	0.067	0.084	0.101	0.118	0.135	0.152	0.169	0.182	0.199	0.222	0.250	0.279
450	0.054	0.083	0.111	0.140	0.168	0.196	0.225	0.253	0.281	0.304	0.332	0.370	0.417	0.465
600	0.076	0.116	0.156	0.195	0.235	0.275	0.314	0.354	0.394	0.426	0.465	0.518	0.584	0.651
750	0.095	0.145	0.194	0.244	0.294	0.343	0.393	0.442	0.492	0.532	0.581	0.648	0.730	0.813
900	0.114	0.174	0.233	0.293	0.353	0.412	0.472	0.531	0.591	0.638	0.698	0.777	0.877	0.976
1050	0.136	0.207	0.278	0.349	0.420	0.491	0.562	0.632	0.703	0.760	0.831	0.926	1.044	1.162
1200	0.158	0.240	0.322	0.405	0.487	0.569	0.651	0.734	0.816	0.882	0.964	1.074	1.211	1.348
1350	0.177	0.269	0.361	0.453	0.545	0.638	0.730	0.822	0.914	0.988	1.080	1.203	1.356	1.510
1500	0.196	0.298	0.400	0.502	0.604	0.706	0.809	0.911	1.013	1.095	1.197	1.333	1.503	1.673
1650	0.218	0.331	0.445	0.558	0.672	0.785	0.898	1.012	1.125	1.216	1.330	1.481	1.670	1.859
1800	0.239	0.364	0.489	0.614	0.739	0.863	0.988	1.113	1.238	1.338	1.463	1.629	1.837	2.045
2000	0.267	0.406	0.545	0.684	0.823	0.962	1.101	1.240	1.379	1.490	1.629	1.814	2.046	2.277
2250	0.299	0.455	0.611	0.767	0.923	1.079	1.235	1.391	1.547	1.672	1.828	2.036	2.296	2.556
2500	0.332	0.505	0.678	0.851	1.024	1.197	1.370	1.543	1.716	1.855	2.028	2.258	2.547	2.835

Free Area Table (FAL-55)

H	W													
mm	300	450	600	750	900	1050	1200	1350	1500	1650	1800	2000	2250	2500
300	0.032	0.049	0.067	0.084	0.101	0.119	0.136	0.154	0.171	0.188	0.206	0.226	0.255	0.284
450	0.056	0.086	0.117	0.147	0.178	0.208	0.238	0.269	0.299	0.330	0.360	0.395	0.446	0.496
600	0.078	0.120	0.163	0.205	0.248	0.290	0.333	0.375	0.418	0.460	0.503	0.551	0.622	0.693
750	0.098	0.151	0.204	0.258	0.311	0.364	0.418	0.471	0.524	0.577	0.631	0.691	0.780	0.869
900	0.119	0.185	0.250	0.315	0.380	0.446	0.511	0.576	0.641	0.707	0.772	0.846	0.955	1.063
1050	0.143	0.222	0.300	0.378	0.457	0.535	0.613	0.691	0.770	0.848	0.926	1.015	1.146	1.276
1200	0.164	0.254	0.343	0.433	0.523	0.612	0.702	0.791	0.881	0.971	1.060	1.162	1.311	1.461
1350	0.184	0.284	0.385	0.485	0.586	0.686	0.786	0.887	0.987	1.088	1.188	1.302	1.469	1.637
1500	0.207	0.320	0.433	0.546	0.659	0.773	0.886	0.999	1.112	1.225	1.338	1.466	1.655	1.843
1650	0.231	0.356	0.482	0.608	0.734	0.860	0.986	1.112	1.238	1.364	1.490	1.632	1.842	2.052
1800	0.250	0.387	0.524	0.660	0.797	0.934	1.071	1.207	1.344	1.481	1.617	1.772	2.000	2.228
2000	0.279	0.431	0.583	0.735	0.888	1.040	1.192	1.344	1.497	1.649	1.801	1.974	2.228	2.481
2250	0.317	0.490	0.663	0.836	1.009	1.182	1.355	1.528	1.701	1.874	2.047	2.243	2.531	2.820
2500	0.350	0.542	0.733	0.925	1.116	1.307	1.499	1.690	1.882	2.073	2.264	2.481	2.800	3.119

Notes:

- 1) Free Area is given in m², Based on nominal neck size with 10mm clearance.
- 2) FAL-40 AMCA Test sample had outer frame size of 1.220X1.220m which corresponds to 1.162X1.162m (WXH).
- 3) FAL-55 AMCA Test sample had outer frame size of 1.220X1.220m which corresponds to 1.158X1.158m (WXH).
- 4) Maximum Single Module size is 2.5X2.5m. Bigger sizes shall be constructed of multiple modules.
- 5) Maximum blade length for FAL-40 is 1.5m and for FAL-55 is 1.8m. For wider louvers middle Mullion (3cm wide) shall be used.

PERFORMANCE

Free Area Table (FAL-90-W)

H	W													
mm	300	450	600	750	900	1050	1200	1350	1500	1650	1800	2000	2250	2500
300	0.023	0.036	0.050	0.063	0.077	0.090	0.104	0.117	0.130	0.141	0.155	0.173	0.195	0.217
450	0.046	0.073	0.100	0.127	0.153	0.180	0.207	0.234	0.261	0.282	0.309	0.345	0.390	0.435
600	0.062	0.098	0.135	0.171	0.207	0.244	0.280	0.316	0.353	0.382	0.418	0.467	0.527	0.588
750	0.080	0.127	0.174	0.221	0.268	0.315	0.363	0.410	0.457	0.494	0.541	0.604	0.682	0.761
900	0.103	0.164	0.224	0.285	0.345	0.406	0.466	0.527	0.587	0.635	0.696	0.777	0.877	0.978
1050	0.119	0.189	0.259	0.329	0.399	0.469	0.539	0.609	0.679	0.735	0.805	0.898	1.015	1.131
1200	0.138	0.218	0.299	0.380	0.460	0.541	0.621	0.702	0.783	0.847	0.928	1.035	1.170	1.304
1350	0.161	0.255	0.349	0.443	0.537	0.631	0.725	0.819	0.913	0.988	1.083	1.208	1.365	1.522
1500	0.177	0.280	0.384	0.487	0.591	0.694	0.798	0.902	1.005	1.088	1.191	1.330	1.502	1.675
1650	0.195	0.309	0.423	0.538	0.652	0.766	0.880	0.995	1.109	1.200	1.315	1.467	1.657	1.848
1800	0.218	0.346	0.473	0.601	0.729	0.856	0.984	1.112	1.239	1.341	1.469	1.639	1.852	2.065
2000	0.241	0.382	0.523	0.664	0.805	0.946	1.088	1.229	1.370	1.483	1.624	1.812	2.047	2.282
2250	0.275	0.437	0.598	0.759	0.920	1.082	1.243	1.404	1.565	1.695	1.856	2.071	2.340	2.608
2500	0.305	0.484	0.663	0.842	1.021	1.200	1.379	1.558	1.737	1.880	2.059	2.298	2.596	2.895

Free Area Table (FAL-90-D)

H	W													
mm	300	450	600	750	900	1050	1200	1350	1500	1650	1800	2000	2250	2500
300	0.033	0.050	0.067	0.084	0.101	0.118	0.134	0.151	0.168	0.182	0.199	0.221	0.250	0.278
450	0.052	0.079	0.106	0.133	0.160	0.187	0.213	0.240	0.267	0.289	0.316	0.351	0.396	0.441
600	0.078	0.119	0.159	0.199	0.240	0.280	0.320	0.360	0.401	0.433	0.473	0.527	0.594	0.662
750	0.098	0.149	0.199	0.250	0.300	0.351	0.401	0.452	0.502	0.543	0.593	0.661	0.745	0.829
900	0.117	0.178	0.238	0.299	0.359	0.420	0.480	0.541	0.601	0.650	0.710	0.791	0.891	0.992
1050	0.143	0.217	0.291	0.365	0.439	0.513	0.587	0.661	0.735	0.794	0.868	0.966	1.090	1.213
1200	0.163	0.247	0.332	0.416	0.500	0.584	0.668	0.752	0.836	0.904	0.988	1.100	1.240	1.380
1350	0.183	0.277	0.371	0.465	0.559	0.653	0.747	0.841	0.935	1.010	1.104	1.230	1.387	1.544
1500	0.209	0.316	0.424	0.531	0.639	0.746	0.854	0.961	1.069	1.155	1.262	1.406	1.585	1.764
1650	0.228	0.346	0.464	0.582	0.699	0.817	0.935	1.053	1.170	1.265	1.382	1.539	1.735	1.932
1800	0.248	0.375	0.503	0.631	0.758	0.886	1.014	1.141	1.269	1.371	1.499	1.669	1.882	2.095
2000	0.278	0.421	0.564	0.707	0.850	0.993	1.136	1.279	1.423	1.537	1.680	1.871	2.110	2.348
2250	0.313	0.474	0.635	0.797	0.958	1.119	1.281	1.442	1.603	1.732	1.893	2.108	2.377	2.646
2500	0.352	0.533	0.715	0.896	1.078	1.259	1.441	1.622	1.804	1.949	2.130	2.372	2.674	2.977

Notes:

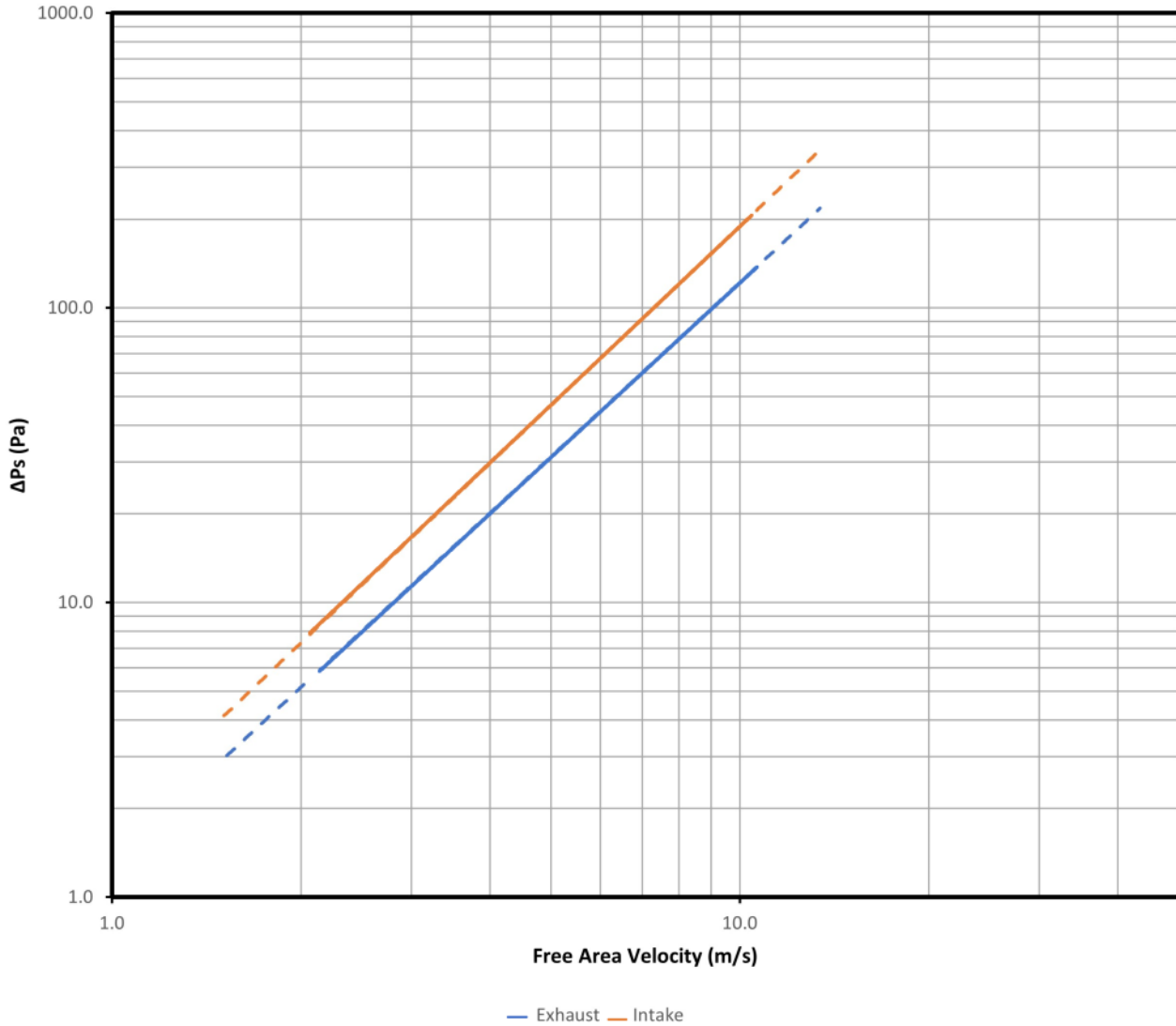
- 1) Free Area is given in m², Based on nominal neck size with 10mm clearance for FAL-90-F and 5mm for FAL-90-D.
- 2) FAL-90-W AMCA Test sample had outer frame size of 1.220X1.220m which corresponds to 1.160X1.160m (WXH).
- 3) FAL-90-D AMCA Test sample had outer frame size of 1.220X1.220m which corresponds to 1.195X1.195m (WXH).
- 4) Maximum Single Module size is 2.5X2.5m. Bigger sizes shall be constructed of multiple modules.
- 5) Maximum blade length for is 1.5m. For wider louvers middle Mullion (3cm wide) shall be used.



PERFORMANCE

Pressure Drop (FAL-40)

Test Sample was 1220X1220mm Outer Frame Size



Catalogue ID: FAL-2023 OCTOBER 2023



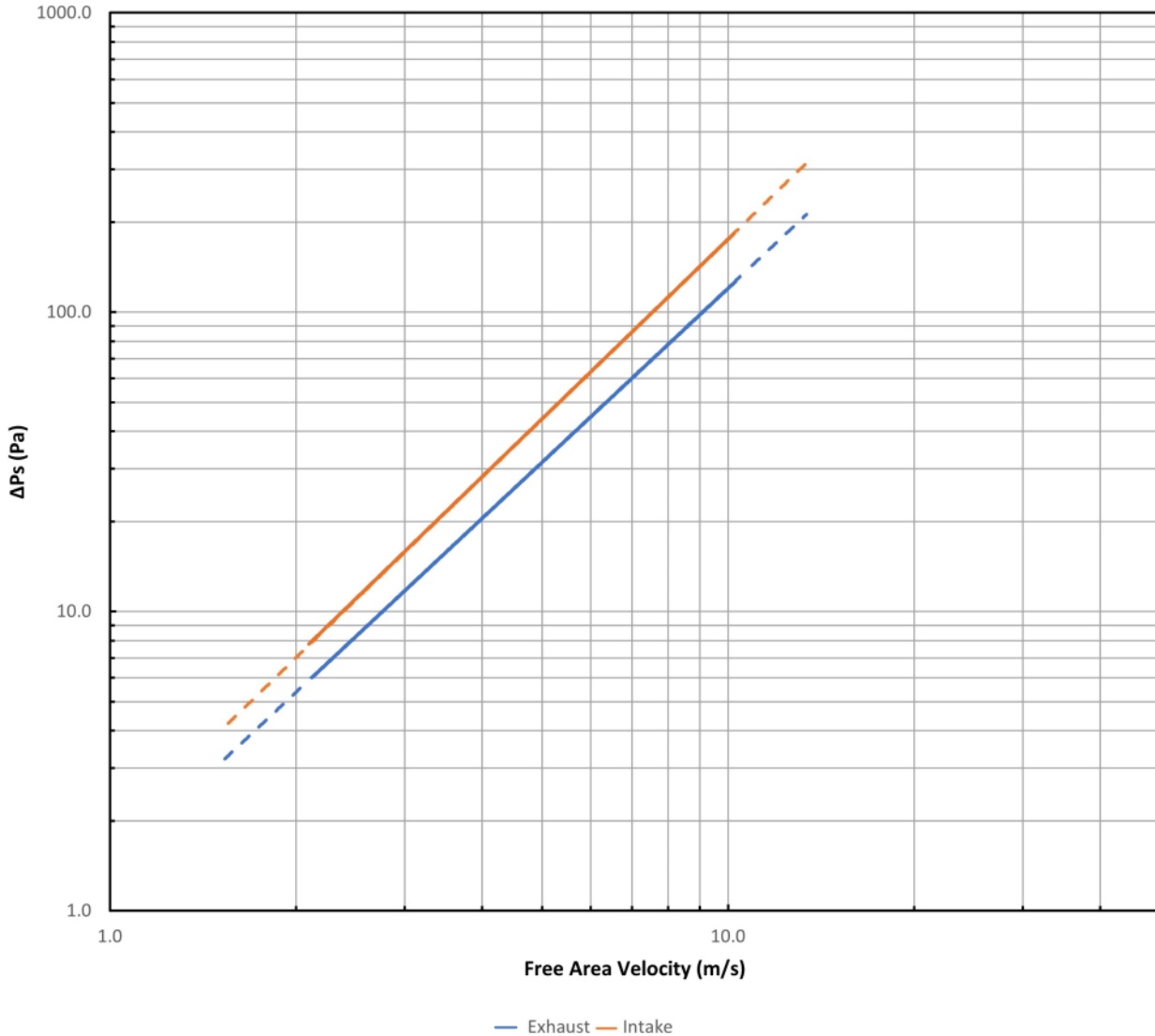
Rabie Al-Takyeef Factory certifies that the Stationary Air Louver Model FAL-40 shown herein is licensed to bear the AMCA Certified Ratings Program seal. The ratings shown are based on tests and procedures performed in accordance with ANSI / AMCA Standard 500-L-12 (Pressure Drop), Figure 5.5 and comply with the requirements of the AMCA Certified Rating Program. The AMCA Certified Rating Program seal applies to Air Performance ratings.



PERFORMANCE

Pressure Drop (FAL-55)

Test Sample was 1220X1220mm Outer Frame Size



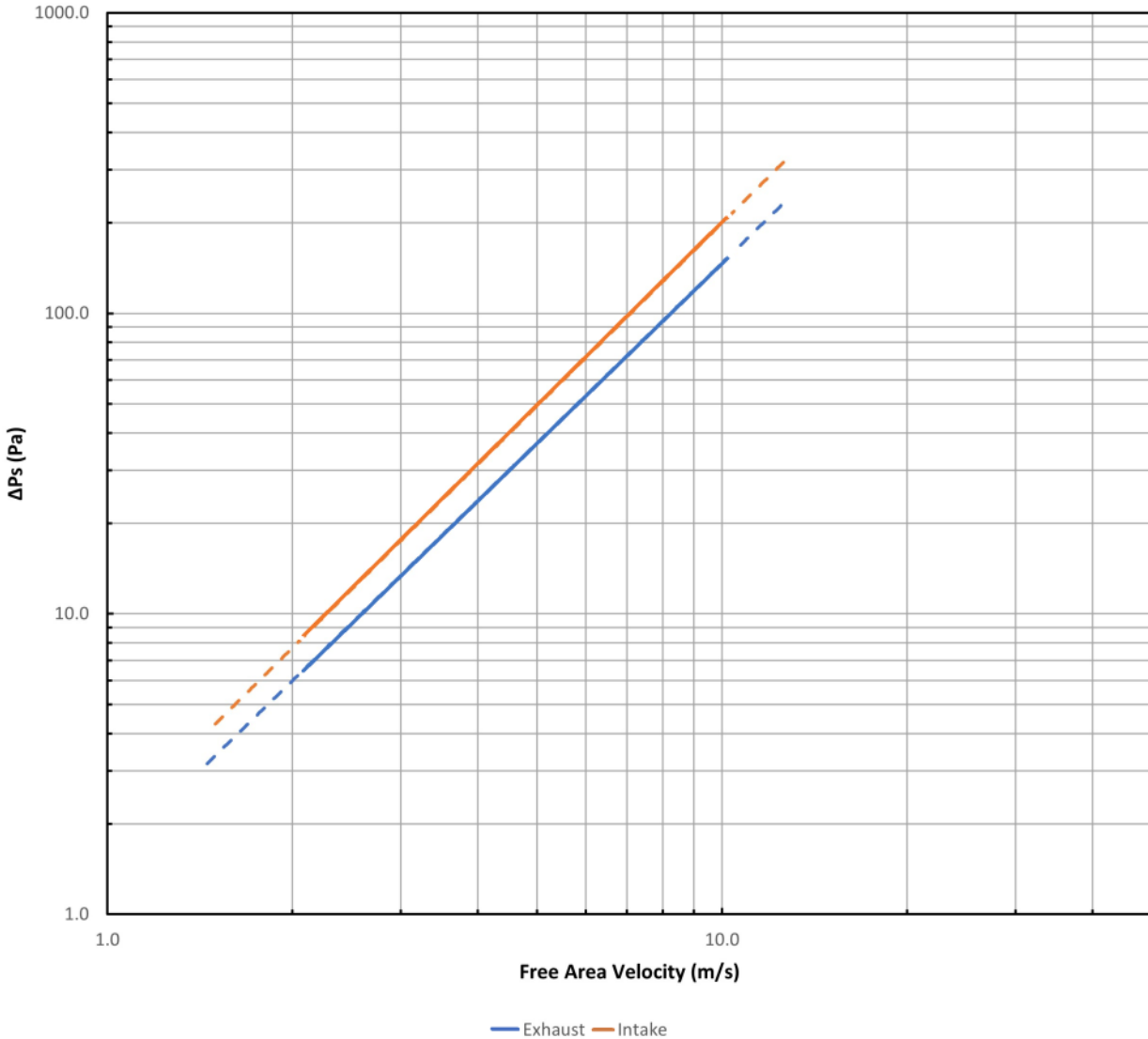
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PERFORMANCE


Pressure Drop (FAL-90-W)

Test Sample was 1220X1220mm Outer Frame Size



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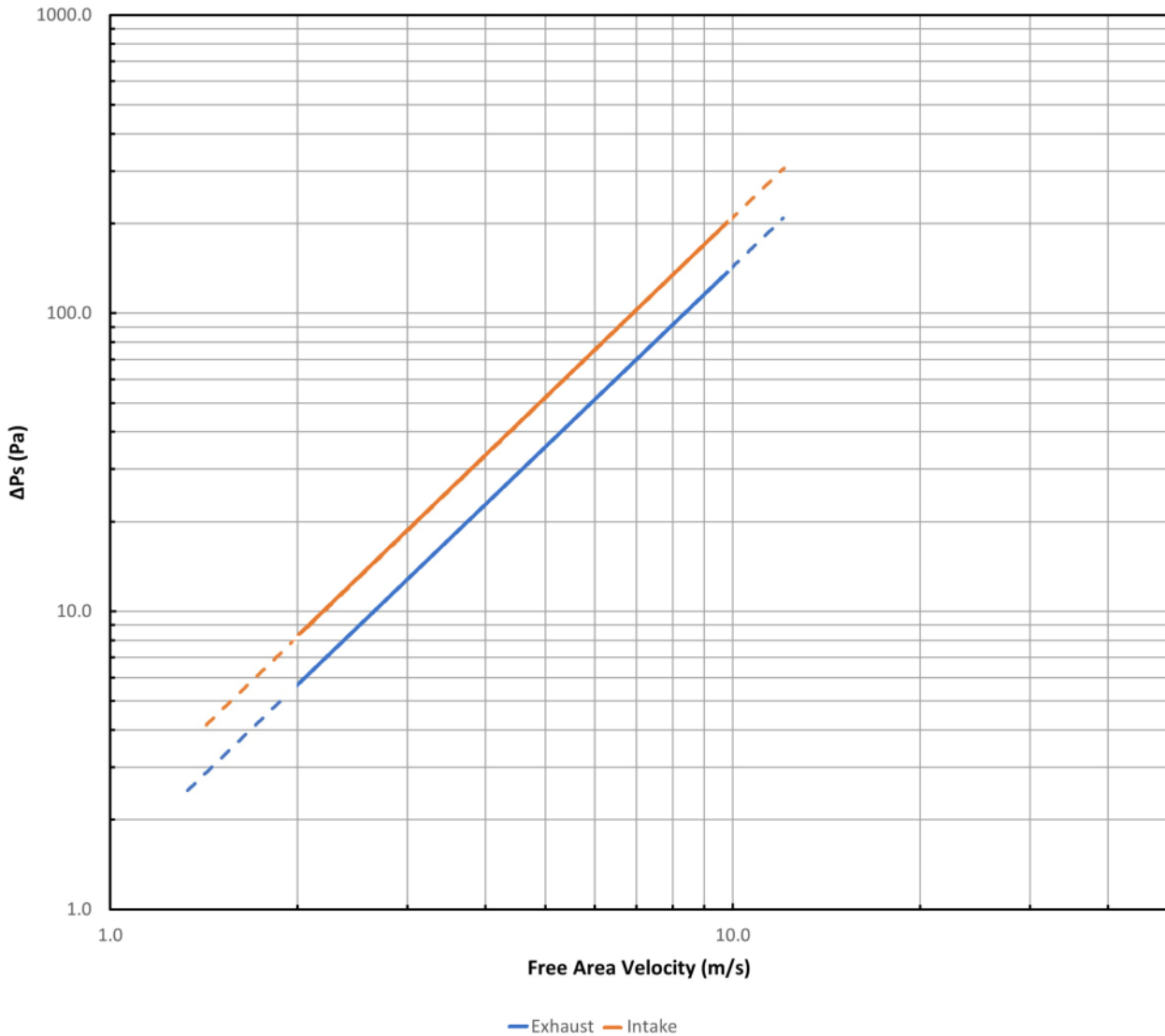
STATIONARY AIR LOUVER (FAL)



PERFORMANCE

Pressure Drop (FAL-90-D)

Test Sample was 1220X1220mm Outer Frame Size



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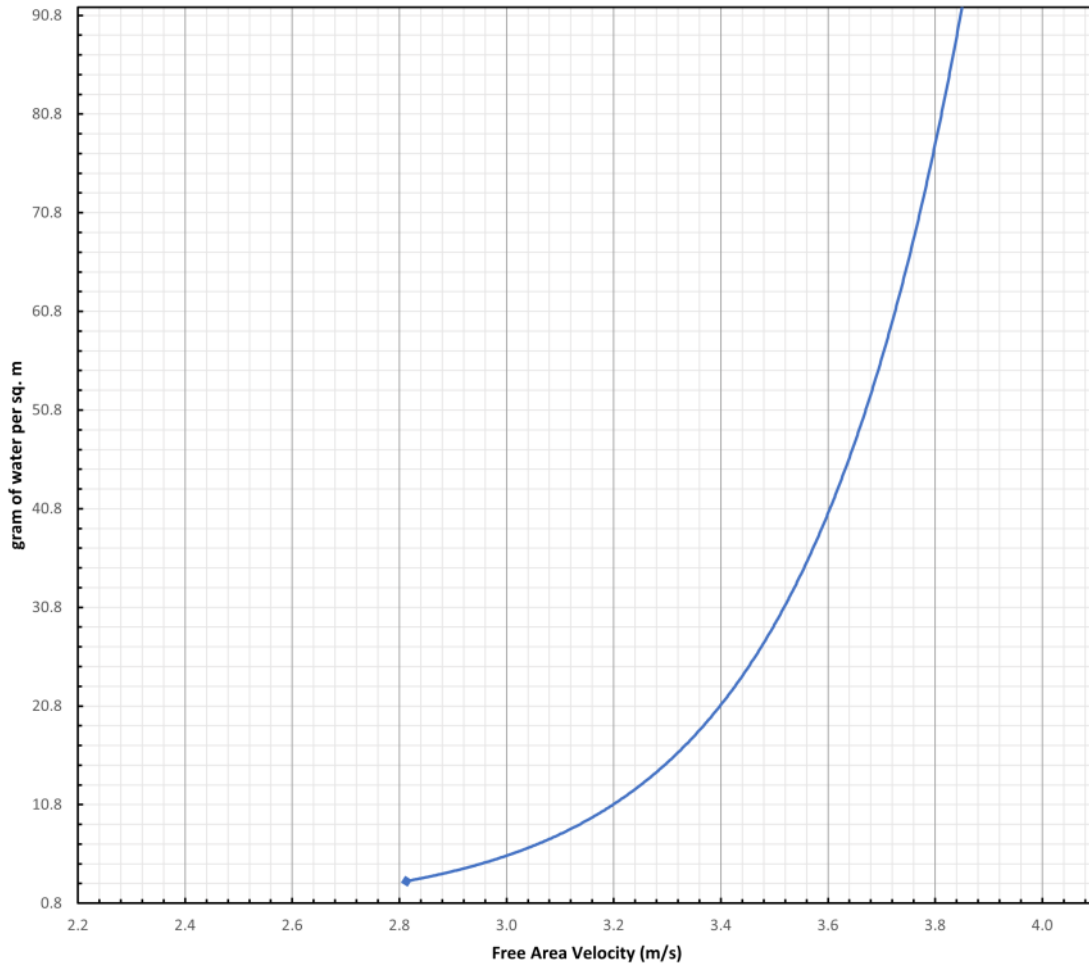
Catalogue ID: FAL-2023 OCTOBER 2023



PERFORMANCE

Water Penetration per Unit Free Area (FAL-40)

Test Sample was 1220X1220mm Outer Frame Size



• Beginning of Water Penetration — Water penetration per Free Area

Beginning of water penetration per AMCA measured free area = 2.812 m/s



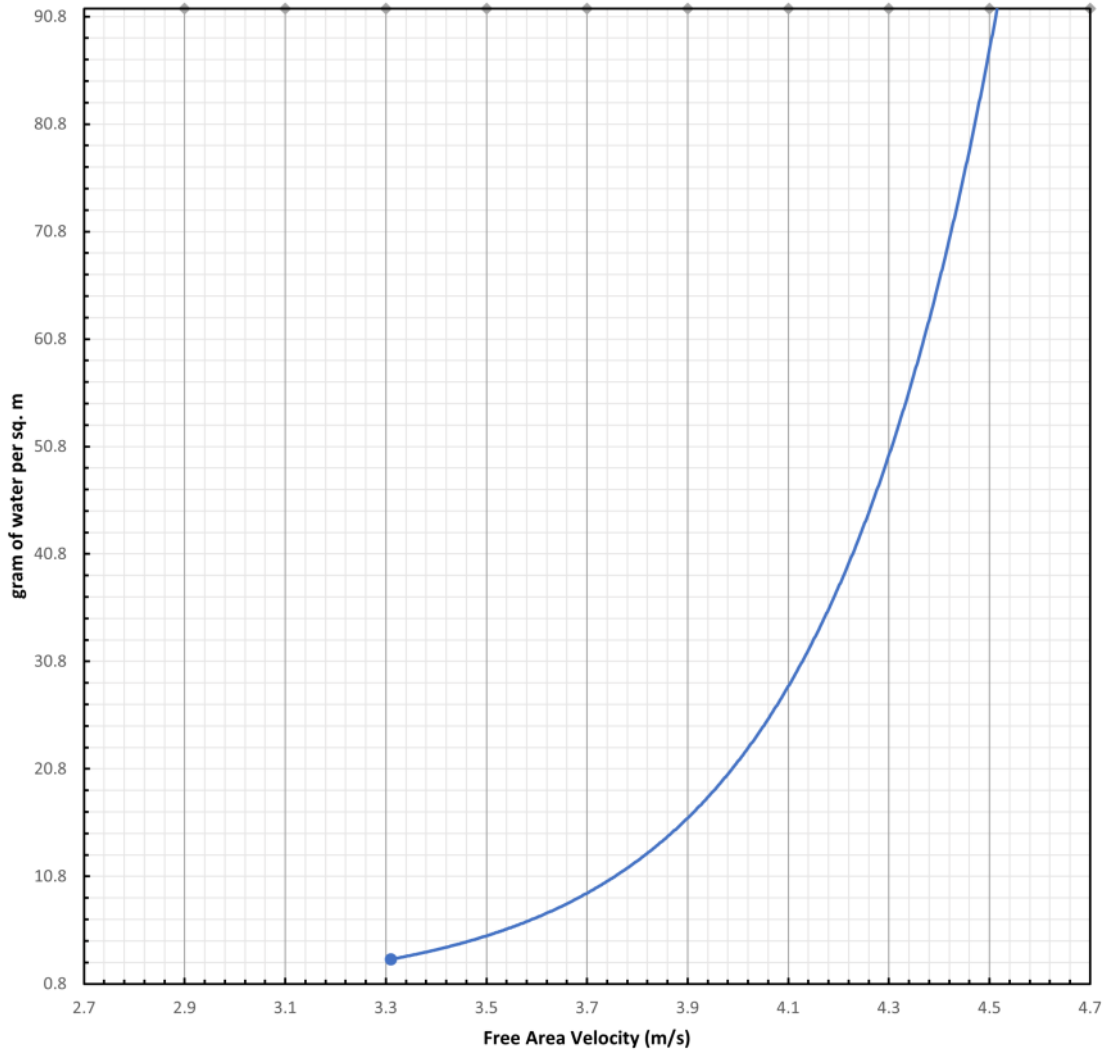
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PERFORMANCE

Water Penetration per Unit Free Area (FAL-55)

Test Sample was 1220X1220mm Outer Frame Size



• Beginning of Water Penetration — Water penetration per Free Area

Beginning of water penetration per AMCA measured free area = 3.31 m/s



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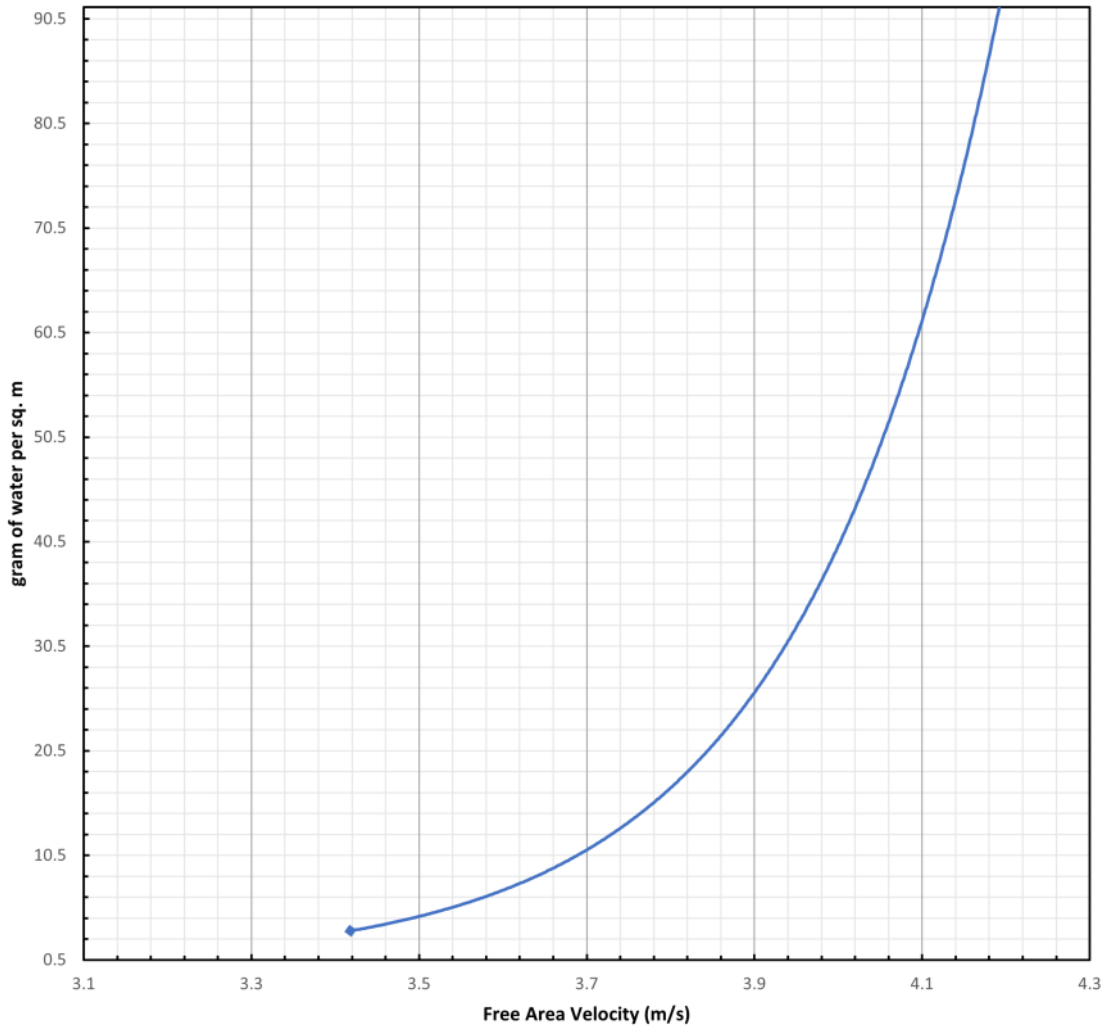
Catalogue ID: FAL-2023 OCTOBER 2023



PERFORMANCE

Water Penetration per Unit Free Area (FAL-90-W)

Test Sample was 1220X1220mm Outer Frame Size



- Beginning of Water Penetration
- Water penetration per Free Area

Beginning of water penetration per AMCA measured free area = 3.417 m/s



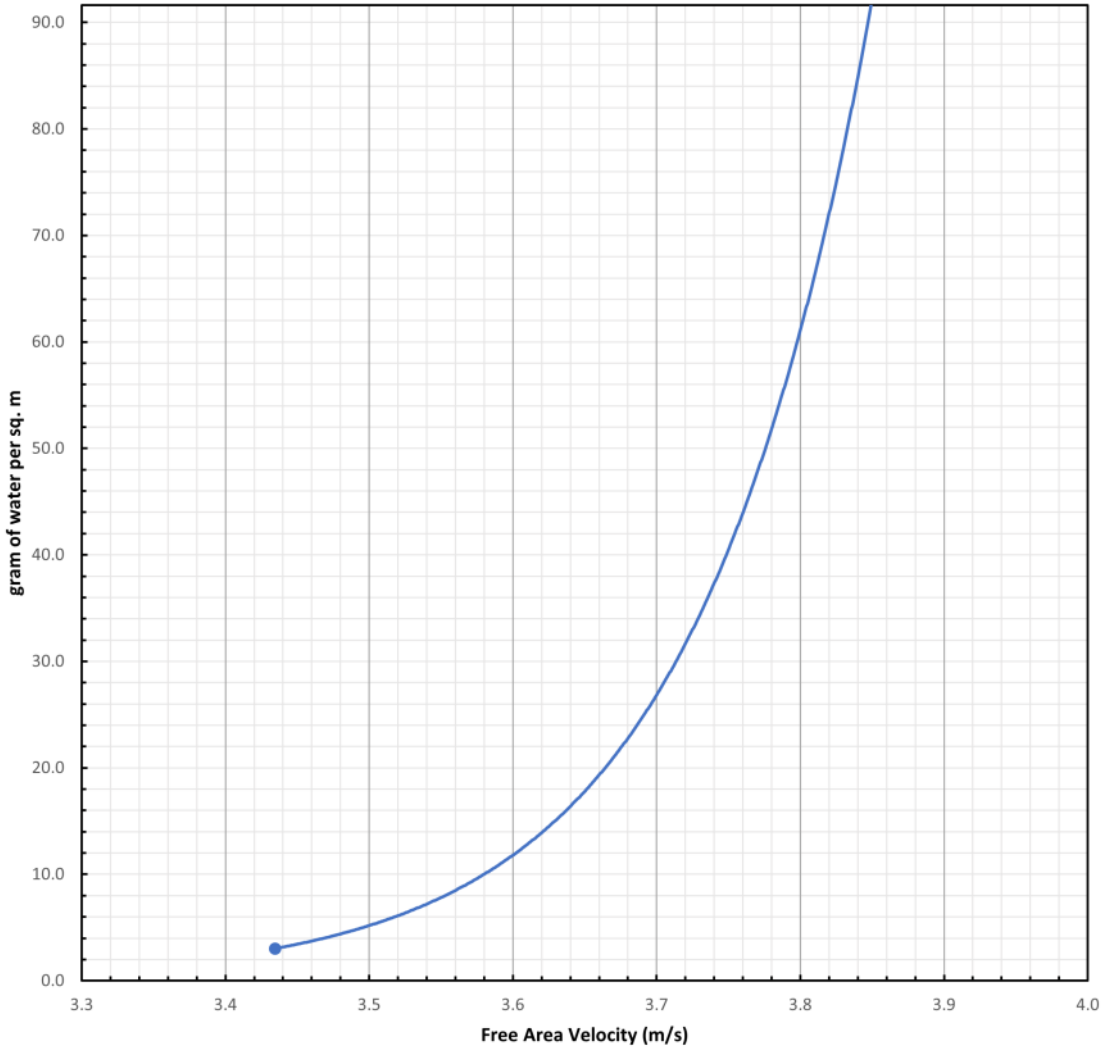
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PERFORMANCE

Water Penetration per Unit Free Area (FAL-90-D)

Test Sample was 1220X1220mm Outer Frame Size



• Beginning of Water Penetration — Water penetration per Free Area

Beginning of water penetration per AMCA measured free area = 3.434 m/s



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PERFORMANCE TEST METHODS

Air Performance (Pressure Drop) Test

The air louvers were tested following the test figure 5.5 of AMCA 500-L-12. Airflow was measured and accordingly the pressure drop at the louver face was taken simultaneously. A total of five airflows were taken each with its corresponding pressure drop at free area velocities ranging from approximately 2 and 10 m/s. The test was conducted with the sample as an Intake Louver and other one as an exhaust Louver.

Water Penetration Test

The air louvers were tested for water penetration following the Test Method of ANSI / AMCA Standard 500-L-12 (Water Penetration), Figure 5.6-6.3.

Several measurement were taken to find Water Penetration point per unit free area for each Louver and then water penetration curve was generated.

SELECTION GUIDE

Knowing the volumetric flow rate required and maximum allowable pressure drop, you can use the performance chart and Free area table to estimate an appropriate size.

Example:

If a fan requires to withdraw 3 m³/sec. through a louver with maximum pressure drop 60 Pa. Estimate the required size for an intake model of FAL-40.

Solution:

At the chart, pivot the pressure drop 60 Pa then intersect with "Intake" line to get the free air velocity as 5.65 m/s approximately.

- Free area = flow rate / free air velocity = 3 / 5.65 = 0.53 m²
- From the table, select any sizes giving at least 0.53 m² free area
e.g. 1.35×0.90m or 1.20×1.20m.