



AIR CONTROL INDUSTRY

LINEAR BAR GRILLES AND REGISTERS



QUALITY ASSURANCE

An ISO 9001:2015 certified company
Product tested and approved by ETL testing laboratories USA



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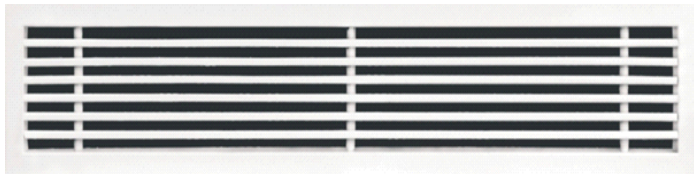
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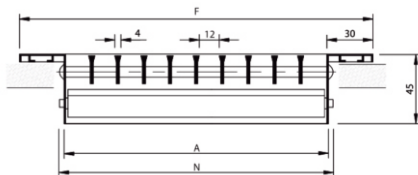


- ▶ Air Control Linear bar grille's combine architectural beauty with outstanding performance and versatility with fixed bar type blades parallel to the grille's longer dimension.
- ▶ Extruded aluminium anodised linear bars with aerofoil cross section for minimum turbulence (face bars with 0°, 15°-1 way throw and 15°-2 way throw are fixed rigidly to the frame with 8 mm pipes).
- ▶ Mullion bars across the blades provide additional strength.
- ▶ Suitable for ceiling, wall or console mounting.
- ▶ Vertical aluminium aerofoil blades are fixed at the rear side of the frame by nylon bushes. These blades can be adjusted manually and individually in the vertical plane to obtain optimum air distribution
- ▶ Registers have opposed blade dampers for minimum disturbance of air stream.
- ▶ For perfect, continuous line usage on a large variety of applications, joining strips are provided in proper lengths with no extra cost.
- ▶ Standard frame width is 30mm. ask for other options.
- ▶ Sponge gasket is provided on request for air tight fixing applications.

AVAILABLE MODELS FOR LINEAR BAR GRILLES AND REGISTERS

1. AC - SLG DD

- ▶ Without damper, used for return air.
- ▶ Fixed horizontal front linear bar core combined with rear vertical adjustable blades.
- ▶ 15° two way blade used for standard core blades.
- ▶ Also available in single deflection blade model – AC-SLG SD

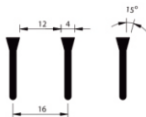
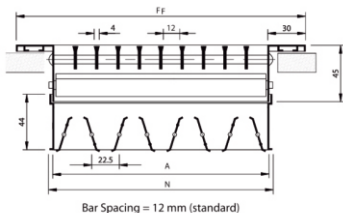


Bar Spacing = 12 mm (standard)



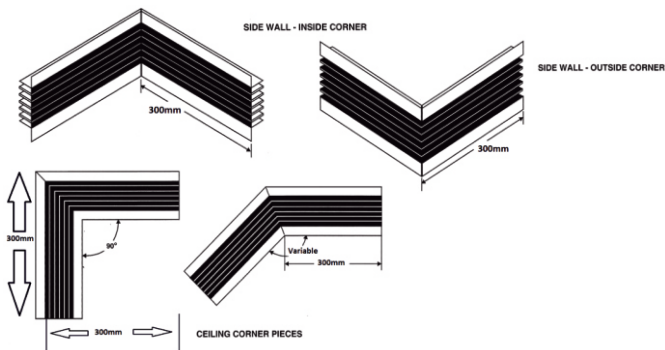
2. AC - SLR DD

- ▶ With (OBD) damper, used for supply air.
- ▶ Fixed horizontal front linear bar core combined with rear vertical adjustable blades.
- ▶ 15° two way blade used for standard core blades.
- ▶ Also available in single deflection blade model – AC-SLG SD



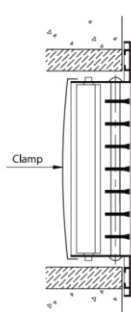
15° two way bars with 12 mm spacing .
Also available with spacing of 9 and 6 mm.

MITERED CORNERS





FIXING DETAILS



Clamp fixing
(concealed type)



Clip fixing
(concealed type)



Screw fixing
(visible type)



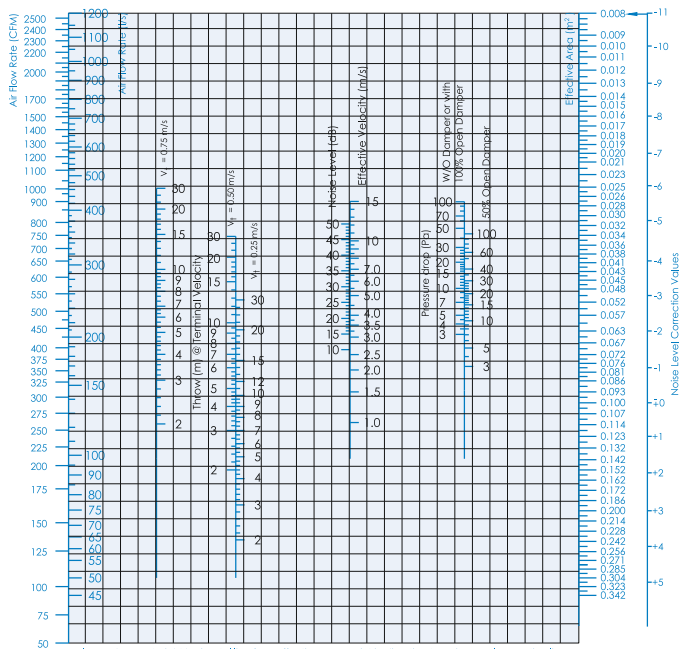
ENGINEERING & PERFORMANCE DATA

L ▼	SELECTED EFFECTIVE AREA VALUES FOR MODEL SLR DD and SLG DD BAR SPACING = 12 mm					SELECTED EFFECTIVE AREA VALUES FOR MODEL RLR SD and RLG SD BAR SPACING = 12 mm				
H ▶	100	150	200	250	300	100	150	200	250	300
500	0.024	0.037	0.049	0.062	0.075	0.032	0.050	0.068	0.085	0.103
550	0.026	0.040	0.054	0.068	0.083	0.036	0.055	0.075	0.094	0.114
600	0.029	0.045	0.060	0.076	0.091	0.039	0.061	0.082	0.104	0.125
650	0.031	0.048	0.065	0.082	0.099	0.043	0.066	0.089	0.113	0.136
700	0.034	0.053	0.071	0.089	0.108	0.046	0.072	0.097	0.122	0.147
750	0.037	0.056	0.076	0.096	0.115	0.050	0.077	0.104	0.131	0.158
800	0.039	0.061	0.082	0.103	0.124	0.053	0.082	0.111	0.140	0.169
850	0.041	0.063	0.085	0.108	0.130	0.056	0.087	0.117	0.148	0.178
900	0.044	0.068	0.091	0.115	0.139	0.060	0.092	0.125	0.157	0.190
950	0.046	0.071	0.096	0.121	0.146	0.063	0.098	0.132	0.166	0.201
1000	0.049	0.076	0.102	0.128	0.155	0.067	0.103	0.139	0.176	0.212
1050	0.052	0.079	0.107	0.135	0.163	0.070	0.108	0.147	0.185	0.223
1100	0.054	0.084	0.113	0.142	0.171	0.074	0.114	0.154	0.194	0.234
1150	0.057	0.087	0.118	0.148	0.179	0.077	0.119	0.161	0.203	0.245
1200	0.059	0.091	0.122	0.154	0.186	0.080	0.124	0.167	0.211	0.254
1250	0.061	0.094	0.127	0.160	0.193	0.084	0.129	0.174	0.220	0.265
1300	0.064	0.099	0.133	0.168	0.202	0.087	0.134	0.182	0.229	0.276
1350	0.067	0.102	0.138	0.174	0.210	0.091	0.140	0.189	0.238	0.287
1400	0.069	0.107	0.144	0.181	0.219	0.094	0.145	0.196	0.247	0.299
1450	0.072	0.110	0.149	0.188	0.226	0.098	0.151	0.204	0.257	0.310
1500	0.075	0.115	0.155	0.195	0.235	0.101	0.156	0.211	0.266	0.321
1550	0.077	0.118	0.160	0.201	0.243	0.105	0.161	0.218	0.275	0.332
1600	0.080	0.123	0.166	0.208	0.251	0.108	0.167	0.226	0.284	0.343
1650	0.082	0.126	0.171	0.215	0.259	0.112	0.172	0.233	0.293	0.354
1700	0.085	0.131	0.176	0.222	0.268	0.115	0.178	0.240	0.303	0.365
1750	0.087	0.134	0.181	0.228	0.275	0.119	0.183	0.247	0.312	0.376
1800	0.090	0.139	0.187	0.236	0.284	0.122	0.188	0.255	0.321	0.387
1850	0.093	0.142	0.192	0.242	0.292	0.126	0.194	0.262	0.330	0.398
1900	0.095	0.147	0.198	0.249	0.301	0.129	0.199	0.269	0.339	0.410
1950	0.098	0.150	0.203	0.256	0.308	0.133	0.205	0.277	0.349	0.421
2000	0.101	0.155	0.209	0.263	0.317	0.136	0.210	0.284	0.358	0.432
2050	0.103	0.158	0.214	0.269	0.325	0.140	0.215	0.291	0.367	0.443
2100	0.106	0.163	0.220	0.276	0.333	0.143	0.221	0.299	0.376	0.454
2150	0.108	0.166	0.225	0.283	0.341	0.147	0.226	0.306	0.385	0.465
2200	0.111	0.171	0.230	0.290	0.350	0.150	0.232	0.313	0.395	0.476
2250	0.113	0.174	0.235	0.296	0.357	0.154	0.237	0.320	0.404	0.487
2300	0.116	0.179	0.241	0.304	0.366	0.157	0.242	0.328	0.413	0.498
2350	0.129	0.182	0.246	0.310	0.374	0.161	0.248	0.335	0.422	0.509
2400	0.121	0.187	0.252	0.317	0.383	0.164	0.253	0.342	0.431	0.521
2450	0.124	0.190	0.257	0.324	0.390	0.168	0.259	0.350	0.441	0.532
2500	0.127	0.195	0.263	0.331	0.399	0.171	0.264	0.357	0.450	0.543

- L & H dimensions are in mm, Areas in m².
- Damper at full open position.



SELECTION DIAGRAM FOR MODELS - AC- SLG & SLR DD



Correction Multipliers / Values :

Blades Deflection	22 1/2 °	45 °
Velocity	x 1.20	x 1.40
Pressure Drop	x 1.30	x 1.60
Throw	x 0.80	x 0.60
Noise Level	+ 2.0	+ 3.0



SELECTION EXAMPLE

Case I : Size and Air Flow Rate are given

Illustrative Example :

Given Data : Required Model : SLR DD

Bar Spacing : 12 mm
Nominal Size : 1500 x 200 mm
Air Flow Rate : 750 CFM

Assume Damper at full open position.

See Page No. LG - 10 Table No. LG - 09, Effective

Area = 0.155 m^2 ,

Apply the CFM and Effective Area values to the diagram and draw a straight line connecting both of them, easily from the intersection you can read all the related data as below :-

V_{eff} = 2.6 m/s (intersection point of drawn line with V_{eff} vertical line).

Noise Level < 15 dB (the Value where the drawn line intersecting the Noise Level Vertical line after checking Noise Level correction values).

Pressure Drop < 3 Pa (from the same V_{eff} point draw a horizontal line intersecting the opposite Pressure Drop vertical line and read this value).

Throw @ $V_t = 0.25 \text{ m/s} > 30 \text{ m}$ (Intersection point of drawn line with Throw vertical line @ $V_t = 0.25 \text{ m/s}$).

@ $V_t = 0.50 \text{ m/s} = 14.0 \text{ m}$ (Intersection point of drawn line with Throw vertical line @ $V_t = 0.50 \text{ m/s}$).

@ $V_t = 0.75 \text{ m/s} = 8.0 \text{ m}$ (where the drawn line intersecting the Throw vertical line @ $V_t = 0.25$ and 0.50 m/s draw a horizontal straight line toward the opposite Throw vertical line @ $V_t = 0.75 \text{ m/s}$ and read this value).

Case II : Air Flow Rate and Noise Level are given

Illustrative Example :

Given Data : Required Model : RLG SD

Bar Spacing : 6 mm
Air Flow Rate : 600 CFM
Noise Level : not to exceed 30 dB

Assume $V_{eff} = 3.0 \text{ m/s}$ to find that Noise Level = (14 - 0) = 14 (Not exceeding 30 dB), then other related data can be read as below :-

Effective Area = 0.09 m^2 .

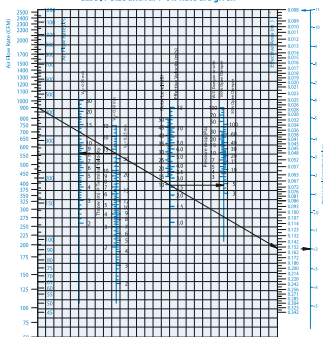
See page No. LG - 09 table No. LG - 08, (@ Bar Spacing = 6 mm) if you choose 4" grille height, the Effective Area for the same = 0.055 m^2 per one meter length, so the required grille length will be $0.09/0.055 = 1.64 \text{ m}$.

Grilles Nominal Size = 1640 x 100 mm.

Pressure Drop = 3.0 Pa.

Throw Values : not required for Return Air Grilles.

Case I : Size and Air Flow Rate are given



Case II : Air Flow Rate and Noise Level are given

