

LINEAR BAR GRILLES



ALB SERIES Architectural Linear Bar Grilles

For Ceiling, Sidewall, Sill, and Floor Installation

Series ALB (Architectural Linear Bar) Grilles are designed for installation in the sidewall, sill, floor, and ceiling, and are recommended for supplying heated, ventilated, or cooled air, and for returning or exhausting room air. Their reliable performance assures confident use of cooling temperature differentials up to 25°F at predicted low air motion of 35 fpm in the zone of occupancy. Series ALB Grilles perform efficiently with air loadings of 1 to 2½ CFM per sq.ft. and a sound level range of NC 25 to 35.

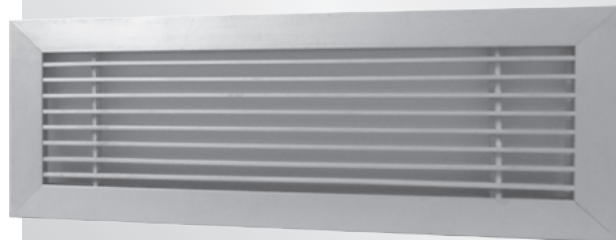
When installed in the sidewall near the ceiling, Series ALB Grilles provide a horizontal pattern above the occupied zone. Core deflections of 15° or 30° direct the air path upward to overcome the drop effect resulting from cool primary air. Use of the deflected cores also improves sight-tightness of the grille face.

When installed in the top of a sill or enclosure, Series ALB Grilles provide a vertical up pattern which is effective in overcoming uncomfortable cold downdrafts and offsetting the radiant effect of glass surfaces. Core deflections of 0°, 15°, and 30° directed toward the glass surface provide upward airflow to the ceiling toward the interior zone.

When installed in the ceiling, Series ALB Grilles provide a vertical downward air pattern which is effective in projection heating and cooling the building perimeter from ceiling heights above 12-15 ft. Application of downflow primary air should be limited in volume to insure against excessive drafts at the end of the throw. Core deflections of 0°, 15°, and 30° direct the air path angularly downward as required.

For floor installations, grilles are specially reinforced. Maximum listed width is 6" for constant traffic areas and areas where heavy loads such as copiers or other equipment may be rolled across grilles. In no case should equipment be "parked" on grilles. For occasional traffic areas, maximum listed width is 8". Maximum listed length is 60".

Series ALB Grilles are fabricated of high-quality aluminum extrusions. Components are mechanically interlocked for a blemish-free appearance. Key-ways and splice plates facilitate hair-line butting of 5 ft. sections to form continuous lengths. Opposable Blade Volume dampers are integrally fastened to Series ALB Grilles. Adjustable Air Equalizing Grids provide spread pattern deflection to shorten the throw. Friction spring fasteners on margins hold grilles to duct collar in sill installations. Mitered corner sections are furnished in one piece.



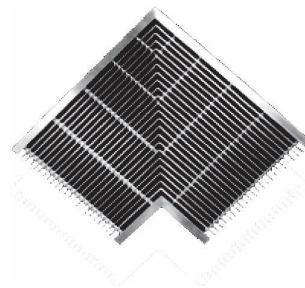
ALB10

FEATURES

- Six bar styles including Pencil Proof
- 0°, 15°, 30° bar deflections
- Friction margin spring fasteners to hold grilles to duct collars for sill installations
- Extruded Aluminum construction: Mechanical assembly
- Butts available in continuous lengths with key-way splices. Factory cut or field cut lengths for precise installation
- White color default. Available in Black colour, Silver aluminium colour, Brushed & lacquered finish, Mill finish, Primer, Satin Anodized finish. Custom colors and finishes available on request.

Accessories/Options

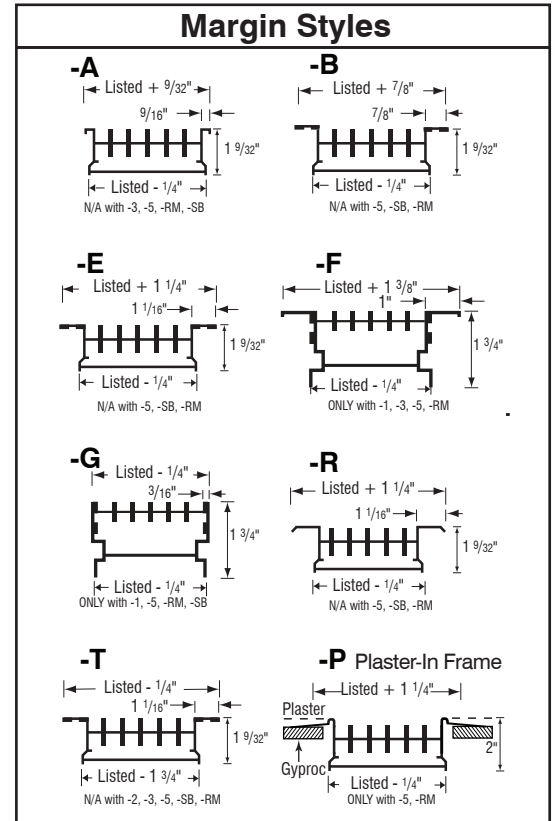
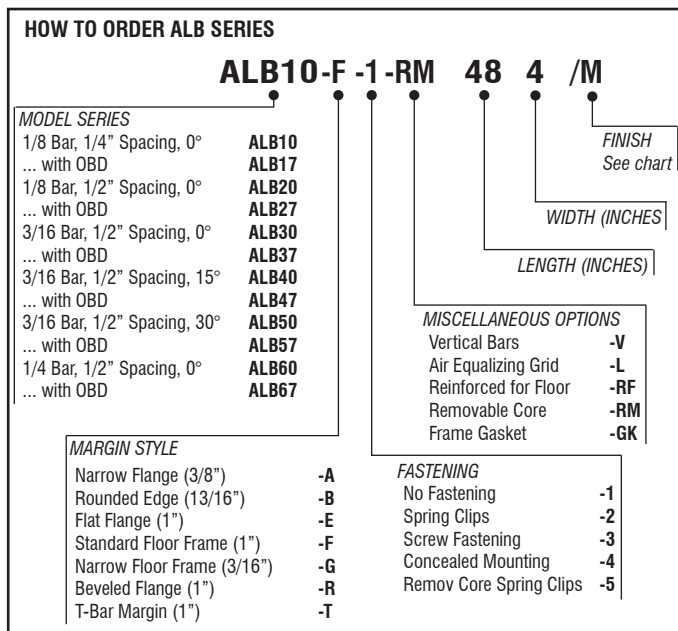
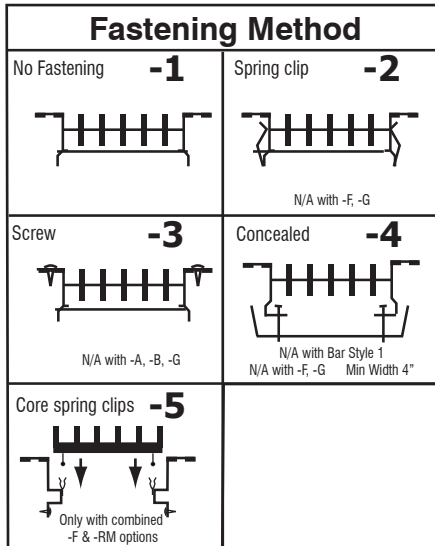
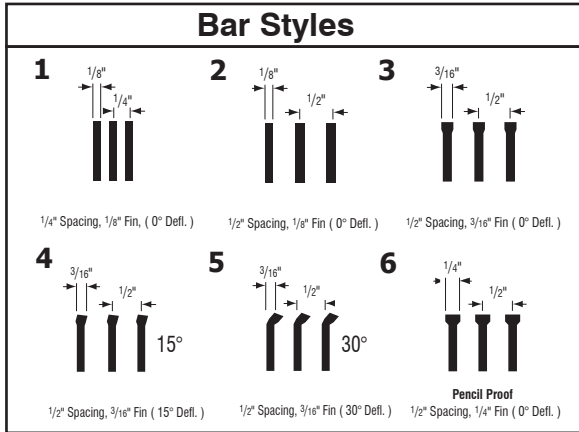
- Opposable Blade Damper
- Air Equalizing Grid (min. width 4")
- Removable core
- Reinforced floor application (max. width 8")
- Mitered corner sections furnished as on piece



Mitered Corner

ARCHITECTURAL STYLES

ALB SERIES



- L**
Air Equalizing Grid
(Minimum 4" wide)
- RF**
Reinforced Floor Application
(Up to 8" wide for occasional traffic)
- RM**
Removable Core Application
Only w/ -F, -G
- GK**
Frame Gasket

LISTED SIZES AVAILABLE

Min. (no OBD) LxW	Min. with OBD LxW	Max. LxW
6" x 1 1/2"	6" x 3"	60" x 16"

1/8 inch fractional increments in length
1/2 inch fractional increments in width (no OBD)
1 inch increments in width with OBD

Sizes longer than maximum will be furnished in multiple sections for field butting

All dimensions in inches.

6" maximum width for constant traffic. 8" maximum width for occasional traffic.

Series ALB products include a 1/32" tolerance for thermal expansion based on a +40°F temperature differential.

For every +20°F differential above +40°F, reduce required listed length by 1/64" per 5 feet of length.

ENGINEERING PERFORMANCE DATA

ALB SERIES



NOTES:

- Table 1 based on 4 ft. grille length. For longer lengths, correct throw and NC per Table 2.
- When using continuous grille lengths with alternate active and inactive sections, a reduction in throw can be obtained by omitting the factors contained in table 2.
- Bar style 1: Increase Table 1 NC + 5 NC.
- Supply air temperature effect on horizontal throw is shown in table 3. Vertical down-throw at varying supply temperatures is shown in Table 4.

- When spreading the air path with horizontal deflection of 22° per side in grille lengths up to 4 ft.:

Multiply Table 1 Throw x .75
 Increase Table 1 NC x 5 NC
 Multiply Table 1 P_s x 1.20
 Multiply Table 5 A_K x .90

- Terminal velocities (V_T) at the minimum and maximum Throw (T) values are rated at 125 FPM and 75 FPM respectively with corresponding room velocities (V_R) of 50 fpm and 35 FPM.

TABLE 2 CONTINUOUS GRILLE LENGTH FACTORS

Modify Table 1 by listed values for grille lengths above 4ft.		
Grille Length	Throw (T)	
	Sidewall Min.-Max.	Sill Min.-Max.
4' - 6'	No Change	
7' - 20'	T x 1.10	
21' - 100'	T x 1.15	
		NC
		+ 0
		+ 5
		+ 10

TABLE 3 SUPPLY AIR TEMPERATURE FACTORS

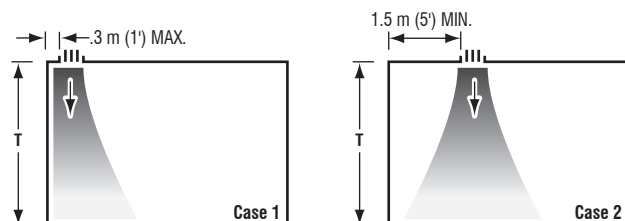
Multiply Throw in Table 1 (or factor in Table 2 if used) by listed value.			
	@ -29°C ΔT	@ -18°C ΔT	@ -4°C ΔT
	@ -20°F ΔT T x 1.10	@ 0°F ΔT T x 1.11	@ +25°F ΔT T x 1.12
Sidewall Sill			

TABLE 4 VERTICAL DOWN-THROW and Supply Air Temperature Supply Factors

Multiply Throw-Sidewall in Table 1 (or factor in Table 2 if used) by listed value.			
	@ -29°C ΔT	@ -18°F ΔT	@ -4°C ΔT
	@ -20°F ΔT	@ 0°F ΔT	@ +25°F ΔT
	Cooling	Ventilating	Heating
Case 1	T x 1.10	T x .90	T x .60
Case 2	T x .70	T x .60	T x .40

TABLE 5 SUPPLY GRILLES AREAS Per Ft. of Length

Listed Width in inches																		
A _N	1.5"	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	
	.13	.17	.21	.25	.33	.42	.50	.67	.84	1.0	1.2	1.3	1.5	1.7	2.0	2.5	3.0	
A _K	.04	.06	.09	.11	.16	.20	.25	.35	.45	.55	.68	.79	.90	1.0	1.3	1.6	2.1	
A _K	.03	.05	.08	.09	.14	.17	.21	.30	.38	.47	.58	.67	.77	.85	1.1	1.4	1.8	



AIR MEASUREMENT	
SUPPLY	RETURN
2220A VELOMETER JET V_K VELOCITY	

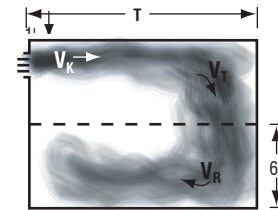
ENGINEERING PERFORMANCE DATA

ALB SERIES

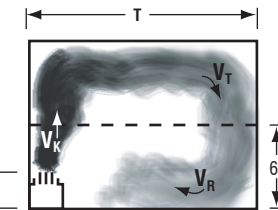


TABLE 1 SUPPLY AIR

CFM per Foot	Listed Width in Inches	Min. P _s in H ₂ O		Outlet Velocity (V _k) FPM		Throw (T) in Feet		Minimum Ceiling Height in Feet		NC
		Bar Style		Bar Style		Sidewall Min.-Max.	Sill Min.-Max.	@-18°F ΔT	@-25°F ΔT	
		2 & 3 & 4 & 5	1 & 6	2 & 3 & 4 & 5	1 & 6					
20	1½	.01	.01	500	575	6-9	1-2	8	9	<20
30	1½	.03	.04	750	865	7-10	2-3	9	10	25 20
	2	.01	.01	475	545	6-9	1-2			
40	1½	.05	.07	1000	1150	9-13	3-5	9	11	30 25 20
	2	.02	.03	635	730	8-11	2-4			
	2½	.01	.01	460	530	7-10	2-3			
50	1½	.09	.12	1250	1440	11-16	4-9	9½	11	30 25 20 20
	2	.03	.04	790	910	10-14	3-7			
	2½	.02	.03	575	660	9-13	2-6			
	3	<.01	.01	440	505	8-12	2-5			
60	2	.05	.07	950	1090	12-18	5-11	9½	12	30 25 20 20
	2½	.02	.03	690	795	11-16	4-9			
	3	.01	.01	530	610	10-14	3-7			
	4	<.01	.01	370	425	8-12	2-5			
70	2	.06	.08	1100	1275	14-20	7-13	10	12	30 30 25 20
	2½	.03	.04	810	935	13-19	6-12			
	3	.02	.03	660	760	11-16	4-9			
	4	<.01	.01	435	500	10-14	3-7			
80	2	.08	.10	1275	1450	16-23	9-16	10½	12½	30 30 25 20
	2½	.04	.05	920	1060	15-21	8-14			
	3	.03	.04	700	805	13-18	6-11			
	4	.01	.01	495	570	11-16	4-9			
90	2½	.05	.07	1030	1185	17-24	10-17	11	13	30 30 25 20
	3	.04	.05	785	905	15-21	8-14			
	4	.01	.02	550	635	13-18	6-11			
	5	<.01	.01	450	520	11-16	4-9			
100	2½	.06	.08	1150	1325	19-27	12-20	11	13	30 30 25 20
	3	.04	.05	875	1010	16-23	9-16			
	4	.02	.03	620	715	14-20	7-13			
	5	.01	.01	500	575	12-18	5-11			
120	3	.06	.08	1050	1210	19-28	11-20	11½	13	30 30 25 20
	4	.03	.04	745	855	17-24	9-16			
	5	.02	.03	600	680	15-22	7-14			
	6	<.01	.01	480	550	13-19	5-11			
140	3	.08	.11	1220	1410	22-32	14-24	11½	14	35 30 25 20
	4	.04	.05	870	1000	19-28	11-20			
	5	.02	.03	700	810	17-25	9-17			
	6	.01	.01	560	645	15-22	7-14			
160	4	.05	.07	990	1140	22-32	13-23	12	15	35 30 25 20
	5	.03	.04	800	925	19-29	10-20			
	6	.02	.03	640	735	18-26	9-17			
	8	.01	.01	460	530	15-22	6-13			
180	4	.07	.09	1110	1275	25-36	16-27	12	15	35 30 25 20
	5	.04	.05	900	1035	22-33	13-24			
	6	.03	.04	725	835	20-30	11-21			
	8	.02	.03	520	600	17-25	8-16			
200	4	.08	.11	1240	1425	28-41	-	12	15	40 35 30 25
	5	.05	.07	1000	1150	24-36	-			
	6	.04	.05	800	925	23-33	-			
	8	.02	.03	575	665	20-28	-			
250	5	.08	.11	1250	1440	30-46	-	13	15	40 35 30 25
	6	.05	.07	1000	1150	27-39	-			
	8	.03	.04	720	830	25-35	-			
	10	.01	.01	550	635	21-32	-			
300	6	.07	.09	1200	1375	33-48	-	13	15	40 35 30 25
	8	.04	.05	865	1000	29-42	-			
	10	.02	.03	665	765	25-39	-			
	12	.01	.01	545	630	23-33	-			
350	8	.05	.08	1020	1175	34-48	-	13	15	40 35 30
	10	.03	.04	780	900	29-45	-			
	12	.02	.03	640	735	26-38	-			
400	8	.08	.11	1170	1350	40-55	-	14	16	45 40 35
	10	.04	.05	890	1025	33-50	-			
	12	.03	.04	730	845	30-44	-			



SIDEWALL



SILL

Outlet Velocity (V _K) FPM										
500	600	700	800	900	1000	1200	1400	1600	1800	2000
Total Pressure (P _T) Inches H ₂ O										
.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25

SYMBOLS
V_T Terminal Velocity in fpm
V_R Room Velocity in fpm
V_K Outlet Velocity in fpm
A_K Outlet area in Sq. Feet
A_N Neck Area in Sq. Ft.
P_S Static Pressure H₂O
NC Re 8db Room attenuation
T Throw in feet at X and Y
ΔT Temperature Differential

ENGINEERING PERFORMANCE DATA

ALB SERIES



TABLE 2 RETURN AIR - CFM Per Foot of Length

Listed Width in Inches	A _K Area	Bar Style	NC 20-25 Non-Ducted		NC 25-30 Ducted		NC 30-40 Ducted	
			-.02" P _S	-.03" P _S	-.08" P _S	-.10" P _S	-.15" P _S	-.20" P _S
			CFM	CFM	CFM	CFM	CFM	CFM
1 1/2	.13	3 4 1	20	25	40	45	55	65
	.12	5	15	20	35	40	45	55
2	.18	3 4 1	30	40	65	70	90	100
	.17	5	25	35	55	60	75	85
2 1/2	.23	3 4 1	45	50	85	95	115	135
	.22	5	35	45	70	80	100	115
3	.27	3 4 1	55	65	105	120	145	165
	.25	5	45	55	90	100	120	140
4	.34	3 4 1	75	90	150	165	205	235
	.33	5	60	75	125	140	170	195
5	.41	3 4 1	95	120	190	215	260	305
	.39	5	80	100	160	180	220	255
6	.46	3 4 1	120	145	240	265	325	375
	.44	5	100	120	200	220	270	315

Listed Width in Inches	A _K Area	Bar Style	NC 20-25 Non-Ducted		NC 25-30 Ducted		NC 30-40 Ducted	
			-.02" P _S	-.03" P _S	-.08" P _S	-.10" P _S	-.15" P _S	-.20" P _S
			CFM	CFM	CFM	CFM	CFM	CFM
8	.57	3 4 1	160	200	325	360	445	515
	.54	5	135	165	270	305	370	430
10	.68	3 4 1	210	255	415	465	570	655
	.64	5	175	215	350	390	475	550
12	.76	3 4 1	255	310	510	565	695	800
	.72	5	210	260	425	475	580	670
16	.93	3 4 1	350	430	700	785	960	1100
	.86	5	285	350	570	635	780	900
20	1.1	3 4 1	445	545	885	990	1220	1410
	1.0	5	365	445	730	815	1000	1160
24	1.25	3 4 1	540	660	1080	1210	1475	1710
	1.15	5	440	540	880	985	1200	1390
30	1.45	3 4 1	670	820	1335	1495	1825	2110
	1.32	5	550	670	1090	1225	1500	1735
36	1.65	3 4 1	820	1010	1645	1835	2250	2600
	1.5	5	670	820	1335	1490	1825	2110

SYMBOLS

V_T Terminal Velocity in fpm
V_R Room Velocity in fpm
V_K Outlet Velocity in fpm

A_K Outlet area in Sq. Feet
P_T Total Pressure H₂O
P_S Static Pressure H₂O

NC Re 8db Room attenuation
T Throw in feet at X and Y
ΔT Temperature Differential



HOW TO SPECIFY ARCHITECTURAL LINEAR BAR GRILLES AND REGISTERS

Supply Register

Supply and mounting of linear bar register with attached opposed blade damper and 45 degree mitered corners, series **ALB**. Constructed from extruded aluminum, manufactured by Airvector.

Return Grille

Supply and mounting of linear bar grille with 45 degree mitered corners, series **ALB**. Constructed from extruded aluminum, manufactured by Airvector.