

ARCHITECTURAL GRILLES



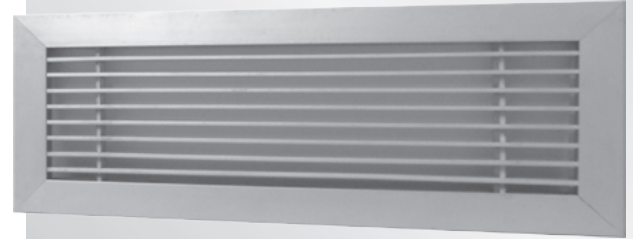
ARCH SERIES Architectural Sidewall Linear Bar Grilles and Registers

Series ARCH - Architectural Sidewall Linear Bar Grilles are designed for installation in the sidewall and are recommended for supplying heated, ventilated, or cooled air, and for returning or exhausting room air. Series ARCH provide a slick look, extreme durability, quick installation and easy access to duct for cleaning and maintenance. All those features combined are what make Series ARCH a best value option for high end residential and commercial applications.

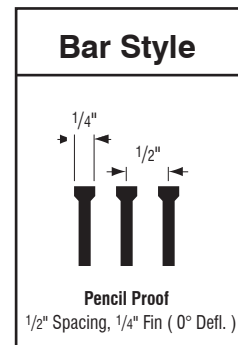
Offered in various finishes to suit all applications, Series ARCH feature a concealed fastening method with no apparent screw holes for a better look. Frame is secured with hidden screw holes in the neck. Removable core is held firmly with sturdy spring clips to avoid any rattling. The Pencil Proof bar style (1/4" bar, 1/2" center-to-center spacing) offers a 50% free area for an optimized balance between aesthetic, security and performance.

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 ARCH Grilles perform efficiently with air loadings of 1 to 2 1/2 CFM per sq.ft. and a sound level range of NC 25 to 35. When installed in the sidewall near the ceiling, Series ARCH Grilles provide a horizontal pattern above the occupied zone.

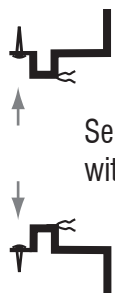
Series ARCH Grilles are fabricated of high-quality aluminum extrusions. Components are mechanically interlocked for a blemish-free appearance. Opposable Blade Volume dampers are integrally fastened to ARCH7 Registers.



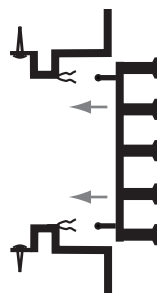
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Concealed Screw Holes & Removable Core with Spring Clips - Two Steps Installation



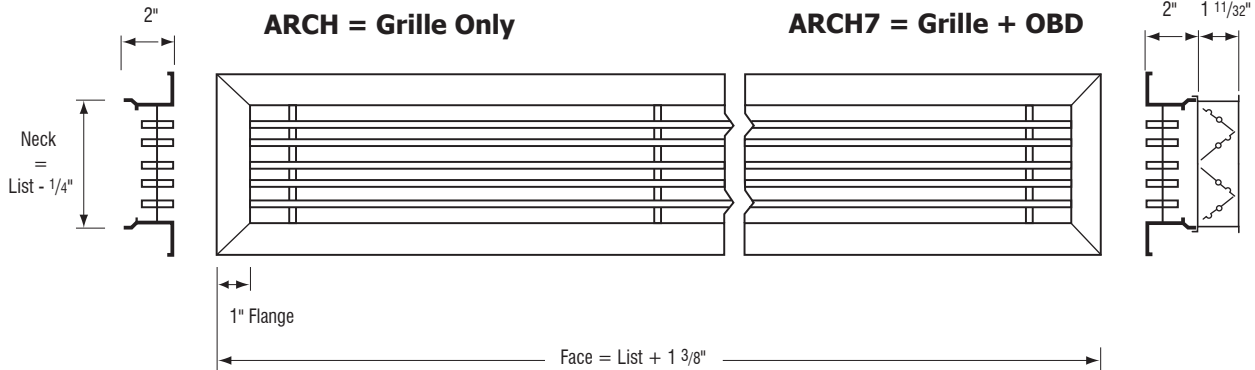
Secure frame in plenum with supplied screws.



Clip in removable core.

ARCHITECTURAL STYLES

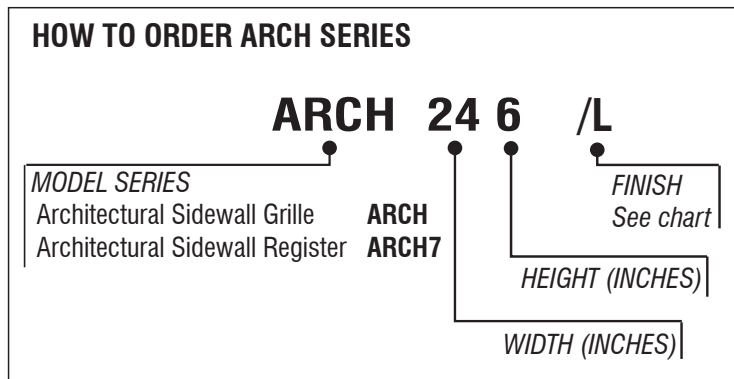
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All dimensions in inches.
 Series ARCH products include a 1/32" tolerance for thermal expansion based on a +40°F temperature differential.
 For every +20°F differential above +40°F, reduce required listed length by 1/64" per 5 feet of length.

How to Specify ARCH Series

Supply and mounting of Airvector® Series ARCH architectural sidewall linear bar grille with concealed screw fastening and removable core with clips. Constructed from heavy gauge extruded aluminum.



ENGINEERING PERFORMANCE DATA

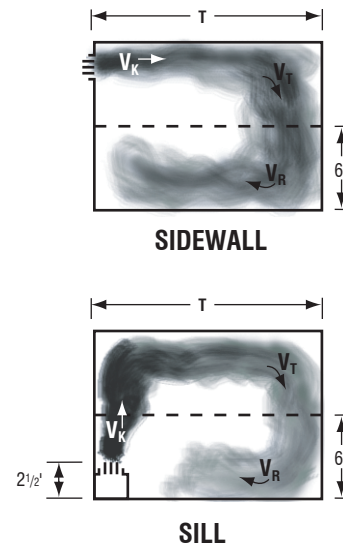
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TABLE 1 SUPPLY AIR

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
				Sidewall Min.-Max.	Sill Min.-Max.	@-18°F ΔT	@-25°F ΔT	
60	4	.01	425	8-12	2-5	9 1/2	12	<20
70	4	.01	500	10-14	3-7	10	12	<20
80	4	.01	570	11-16	4-9	10 1/2	12 1/2	20
90	4 5	.02 .01	635 520	13-18 11-16	6-11 4-9	11	13	25 20
100	4 5	.03 .01	715 575	14-20 12-18	7-13 5-11	11	13	25 20
120	4 5 6	.04 .03 .01	855 680 550	17-24 15-22 13-19	9-16 7-14 5-11	11 1/2	13	30 25 20
140	4 5 6	.05 .03 .01	1000 810 645	19-28 17-25 15-22	11-20 9-17 7-14	11 1/2	14	30 25 20
160	4 5 6 8	.07 .04 .03 .01	1140 925 735 530	22-32 19-29 18-26 15-22	13-23 10-20 9-17 6-13	12	15	35 30 25 20
180	4 5 6 8	.09 .05 .04 .03	1275 1035 835 600	25-36 22-33 20-30 17-25	16-27 13-24 11-21 8-16	12	15	35 30 25 20
200	4 5 6 8	.11 .07 .05 .03	1425 1150 925 665	28-41 24-36 23-33 20-28	-	12	15	40 35 30 25
250	5 6 8 10	.11 .07 .04 .01	1440 1150 830 635	30-46 27-39 25-35 21-32	-	13	15	40 35 30 25
300	6 8 10 12	.09 .05 .03 .01	1375 1000 765 630	33-48 29-42 25-39 23-33	-	13	15	40 35 30 25
350	8 10 12	.08 .04 .03	1175 900 735	34-48 29-45 26-38	-	13	15	40 35 30
400	8 10 12	.11 .05 .04	1350 1025 845	40-55 33-50 30-44	-	14	16	45 40 35

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.



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

TABLE 2 RETURN AIR (CFM Per Foot of Length)

Listed Width in Inches	A _k Area	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
4	.34	75	90	150	165	205	235
5	.41	95	120	190	215	260	305
6	.46	120	145	240	265	325	375
8	.57	160	200	325	360	445	515
10	.68	210	255	415	465	570	655
12	.76	255	310	510	565	695	800

- 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
 - P_T Total Pressure H₂O
 - NC Re 8db Room attenuation
 - T Throw in feet at X and Y
 - ΔT Temperature Differential

ENGINEERING PERFORMANCE DATA

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TABLE 3 SUPPLY AIR TEMPERATURE FACTORS

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

TABLE 4 SUPPLY GRILLES AREAS Per Ft. of Length

Listed Width in inches																	
A_H	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_L	.03	.05	.08	.09	.14	.17	.21	.30	.38	.47	.58	.67	.77	.85	1.1	1.4	1.8

