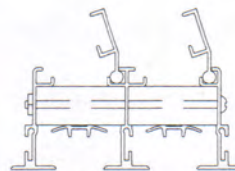
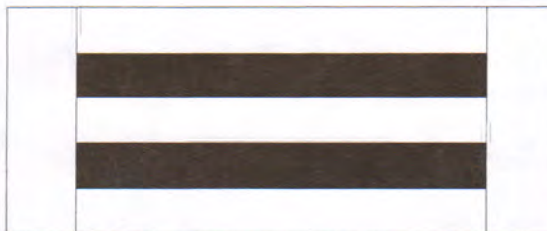


PRODUCT DESCRIPTION

Reliable Slot Diffusers are designed for ceiling, sidewall or sill installation. Direction changes up to 180° are possible by lateral adjustments of the extruded aluminum black-coated pattern controller to meet changing requirements without changing NC level, static pressure resistance (Ps) effective outlet area (Ak) or face appearance of the diffusers. Its reliable performance assures confident use of cooling temperature differentials up to 25° F at predicted low air motion (35 fpm) in the zone of occupancy. Reliable Slot Diffusers perform efficiently with air loadings of 1 to 3 cfm per square foot of floor area or 6 to 18 air changes per hour (based on 10-foot ceiling height) at a sound level range of NC 25 to 35.

**9400 SLOT**

Fabricated of high quality anodized aluminum extrusions, Reliable Linear Slot Diffusers are also available in white baked enamel finish. Structural components are mechanically interlocked and bolted together, with keyway and splines to form continuous lengths. Spring loaded volume dampers are furnished in each slot; accessible through the slot opening, they may be used to adjust and equalize air flow along the diffuser or to internally blank-off dummy sections in continuous lengths. One-piece mitered corner sections are available.

Reliable Slot Diffusers can be specified for surface mounting using face screw mounting holes in the outer frame borders, or by utilizing a concealed mounting system of leveling screws and mounting brackets which fit in a hemmed duct collar or a subframe. When mounting brackets are used, pattern controllers and dampers are shortened to give access to leveling screws through the diffuser face, with adjustable cover strips provided to preserve the one-piece appearance of the pattern controllers. Two auxiliary subframes are available for flush, plaster or tile ceiling applications. The pattern controller and damper are omitted from return air or exhaust diffusers to provide maximum air capacity.

Continuous runs are available in virtually any length; however, the maximum length of an individual unit is limited to 72". Unless otherwise specified, the factory reserves the right to determine individual unit lengths comprising a continuous run installation.

HOW TO MEASURE:

Surface mount (SM) units should be specified by the standard nominal (neck) dimension. For TeeBar Lay-in (TB) or Concealed Spline (CS) applications, specify the ceiling module size. Continuous runs (other than straight lengths) must always include a sketch showing configuration of units, mitered corners with degree of miter, end caps, etc.

TABLE 2 CONTINUOUS DIFFUSER LENGTH FACTORS

Modify Table 1 by factors for diffuser lengths above 4 feet.

Diffuser Length	THROW (T)			NC
	Ceiling Min.-Max.	Sidewall Min.-Max.	Sill Min.-Max.	
4'-6'	No change			+ 0
7'-20'	T x 1.10			+ 5
21'-100'	T x 1.15			+ 10

TABLE 5 VERTICAL DOWN-THROW and Supply Temperature Factors

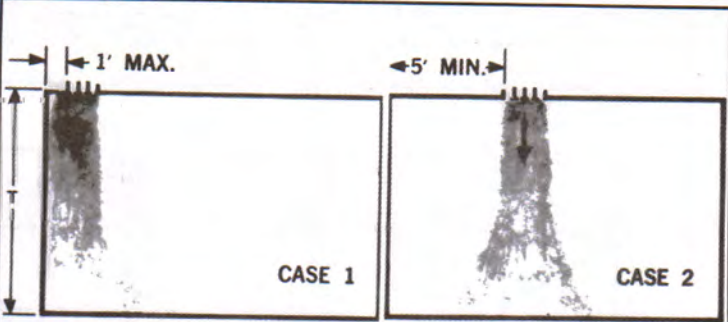


TABLE 3 SUPPLY AIR TEMPERATURE FACTORS

Multiply Throw in Table 1 (or factor in Table 2 if used) by listed value.

Sidewall Ceiling Sill	@ -20F ΔT	@ 0F ΔT	@ +25F ΔT
		T x 1.0	T x 1.1

Multiply Throw-Sidewall in Table 1 (or factor in Table 2 if used) by listed value.

	@ -20F ΔT Cooling	@ -0F ΔT Ventilating	@ +25F ΔT Heating
Case 1	T x 1.0	T x .90	T x .60
Case 2	T x .70	T x .60	T x .40

TABLE 4 SUPPLY DIFFUSER AREAS Per Foot of Length

	No. of Slots									
	1	2	3	4	5	6	7	8	9	10
A _K Area	.03	.05	.07	.09	.12	.14	.16	.19	.21	.23
A _N Area	.12	.24	.36	.48	.60	.72	.84	.96	1.1	1.2

A_K constant for horizontal 1-way, 2-way and vertical pattern.

$$CFM = A_K \times \text{length in feet} \times V_K$$

SYMBOLS

- V_K Outlet Velocity in FPM
- A_K Outlet Area in Sq. Ft.
- A_N Neck Area in Sq. Ft.
- NC re 10db Room Attenuation
- T Throw in Feet
- ΔT Temperature Differential

TABLE 6 RETURN AIR CFM Per Foot of Length

No. of Slots	A _K Area	NC 20-25 Application Non-Ducted		NC 30 Application Ducted		NC 35-40 Application Ducted	
		- .02" Ps	- .03" Ps	- .08" Ps	- .10" Ps	- .15" Ps	- .20" Ps
		CFM	CFM	CFM	CFM	CFM	CFM
1	.04	25	35	50	65	75	90
2	.08	50	60	100	110	135	160
3	.12	80	100	160	180	220	250
4	.16	100	120	200	225	275	320
5	.20	130	160	260	295	360	420
6	.24	160	195	320	360	440	510
7	.28	175	215	350	390	475	550
8	.32	200	245	400	445	545	630
9	.36	235	290	470	525	640	740
10	.40	260	320	520	580	710	820

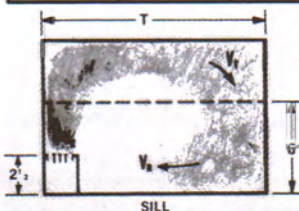
Capacity based on diffuser without pattern controller. When pattern controller is used, cfm capacities are reduced by 65% at listed Ps, NC, and A_K.

NOTES:

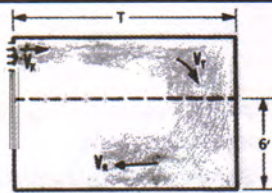
- a. Table 1 based on 4-foot diffuser length. For longer lengths, correct throw and NC per Table 2.
- b. For 2-way ceiling throw, proportion cfm and number of slots in each direction of T and select from 1-way data, Table 1.
- c. When using continuous diffuser lengths with alternate active and inactive sections, a reduction in throw can be obtained by omitting the factors contained in Table 2.
- d. Ps constant for horizontal 1-way, 2-way, and vertical pattern adjustment.
- e. Supply air temperature effect on horizontal throw is shown in Table 3. Vertical throw at varying supply air temperatures is shown in Table 5.
- f. Terminal velocities (V_T) at the minimum and maximum throw (T) positions are rated at 150 fpm and 100 fpm respectively with corresponding room velocities (V_R) of 50 fpm and 35 fpm.

TABLE 1 SUPPLY AIR

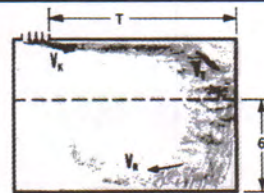
CFM Per Foot In Direction of T	No. of Slots	Min. Ps In H ₂ O	Outlet Velocity (V _k) FPM	Throw (T) in Feet			Minimum Ceiling Height in Feet		NC	
				Ceiling	Sidewall	Sill	@ - 18F ΔT	@ - 25F ΔT		
				Min.-Max.	Min.-Max.	Min.-Max.				
10	1	.01	335	4-6	2-4	1-2	7½	9	<20	
20	1	.04	670	8-11	6-9	2-3	8	9	20	
	2	<.01	400	6-9	4-7	1-2			<20	
30	1	.09	1000	10-14	8-12	3-4	9	10	20	
	2	.02	600	8-11	6-9	2-3			<20	
	3	<.01	430	7-9	5-7	1-2			<20	
40	1	.16	1340	13-17	11-15	4-6	9	11	25	
	2	.04	800	10-14	8-12	3-4			<20	
	3	.02	575	9-12	7-10	2-3			<20	
	4	.01	445	8-11	6-9	2-3			<20	
50	2	.06	1000	11-15	9-13	4-6	9½	11	<20	
	3	.03	715	10-14	8-12	3-4			<20	
	4	.02	555	9-13	7-11	2-4			<20	
	5	<.01	415	7-12	6-10	2-3			<20	
	2	.09	1200	13-17	11-15	5-8			9½	12
3	.04	860	12-16	10-14	4-7	<20				
4	.02	665	11-15	9-13	3-6	<20				
5	.01	500	9-13	7-11	3-4	<20				
70	2	.13	1400	15-20	13-18	6-11	10	12	25	
	3	.06	1000	13-18	11-16	5-9			20	
	4	.03	775	12-16	10-14	4-7			<20	
	5	.02	585	10-15	8-13	3-5			<20	
	6	.01	500	9-14	7-12	2-5			<20	
	3	.07	1140	14-20	12-18	6-11			10½	12½
4	.04	885	13-19	11-17	5-10	20				
5	.03	665	13-17	11-15	4-8	<20				
6	.02	575	12-16	10-14	3-7	<20				
7	<.01	500	11-15	9-13	3-6	<20				
3	.09	1290	17-24	15-21	8-14	11	13	25		
4	.05	1000	16-22	14-20	7-13			20		
5	.03	750	15-20	13-18	6-11			<20		
6	.02	645	14-18	12-16	5-9			<20		
7	.01	560	13-17	11-15	4-8			<20		
3	.13	1430	19-26	17-23	10-16			11	13	30
4	.06	1110	18-25	16-22	9-15					25
5	.04	830	16-23	14-20	7-13	20				
6	.03	715	14-20	12-18	6-11	<20				
7	.02	630	13-19	11-17	5-10	<20				
4	.09	1330	19-27	17-24	10-16	11½	13			25
5	.06	1000	18-26	16-23	8-15					20
6	.04	860	17-25	15-22	7-14			<20		
7	.03	750	16-23	14-20	6-12			<20		
8	.02	630	15-20	13-18	5-10			<20		
5	.08	1170	20-30	18-27	10-19			11½	14	25
6	.06	1000	19-28	17-25	9-17					20
7	.04	875	18-26	16-23	8-15	<20				
8	.03	740	16-24	14-21	6-13	<20				
9	.02	685	15-21	13-19	5-11	<20				
6	.07	1150	21-32	19-29	10-20	12	15			25
7	.05	1000	20-30	18-27	9-18					25
8	.04	840	18-27	16-24	8-16			20		
9	.03	760	17-26	15-23	6-14			<20		
10	.02	695	16-25	14-22	5-13			<20		
6	.09	1290	24-35	21-31	12-22			12	15	25
7	.07	1130	23-34	20-30	11-21					25
8	.05	950	20-31	18-28	9-19	25				
9	.04	860	19-30	17-27	8-18	20				
10	.03	780	18-29	16-26	7-17	<20				
6	.11	1440	26-40	23-36	—	12	15			30
7	.08	1250	25-38	22-34	—					30
8	.06	1110	24-36	21-32	—			25		
9	.05	955	22-33	20-30	—			25		
10	.04	870	21-31	19-28	—			20		
8	.10	1315	26-46	23-41	—			13	15	35
9	.07	1190	25-42	22-38	—					30
10	.06	1085	24-39	21-35	—	25				



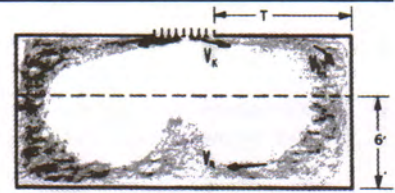
SILL



SIDEWALL



CEILING ONE WAY



CEILING TWO WAY

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. Ft.
- A_N Neck Area in Sq. Ft.
- P_s Static Pressure in H₂O
- NC re 10 db Room Attenuation
- T Throw in Feet
- ΔT Temperature Differential