SLOT DIFFUSERS

AIRVECTOR®

ALS SERIES SLOT DIFFUSER

For Ceiling, Sidewall and Sill Installation

Series **ALS** Architectural Linear Slot Diffusers are designed for installation in the ceiling, sidewall or sill and are recommended for supplying heated, ventilated or cooled air and for returning or exhausting room air. Air pattern directional changes through 180° are effected by the integral "Uniflex" combination pattern and volume controller, permitting pattern adjustment to meet changing requirements. Their 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. Series ALS Supply Diffusers perform efficiently with air loadings of 1 to 3 CFM per square feet of floor area or 6 to 18 air changes per hour (based on 10ft. ceiling height) at a sound level range of NC 25 to 35.

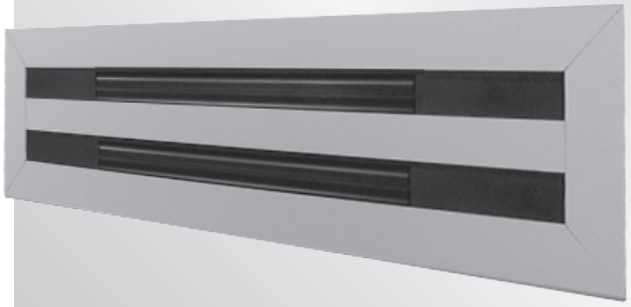
When installed in the ceiling, Series ALS Diffusers provide a horizontal air path that is adjustable through 180° in each slot opening. One to ten slot ALS Diffusers can be adjusted to provide one-way or two-way air patterns by directing the controller as required to either side.

Vertical downward air pattern can be adjusted from all slots. A combination horizontal pattern and vertical down pattern can be effected from a two (or more) slot diffuser.

Series ALS diffusers are fabricated of high-quality aluminum extrusions. The pattern controller is coated dull black to accent the slot opening. Components are mechanically interlocked together for a blemish-free appearance. Keyways and splice plates facilitate sections over 72” to form continuous lengths. Ninety degree mitered corner sections are furnished in one piece.

Concealed mounting brackets fit in a hemmed duct collar to positively hold the diffuser in ceiling and sidewall installations. Series ALS diffusers used for return or exhaust air are identical to supply sections except the pattern controller is removed to increase air capacity.

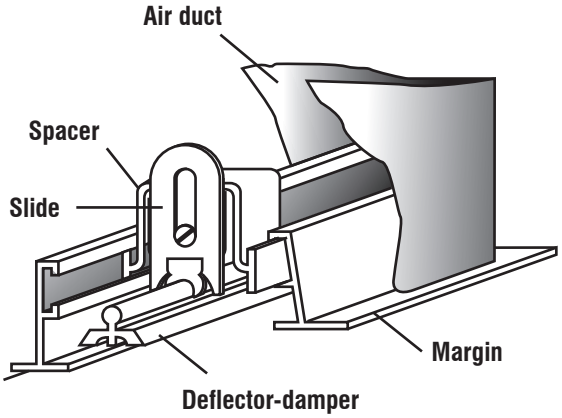
The Airvector® exclusive UNIFLEX pattern and volume controller



ALS37

FEATURES
- THREE SLOT SIZES, 1/2", 3/4" and 1".
- ONE TO EIGHT slots wide for air volume of 10-350 CFM per foot.
- EXTRUDED ALUMINUM construction: mechanical assembly.
- White powder paint finish-standard.
- OVERLAPPING OR T-BAR MARGINS.

ACCESSORIES
- Mitered Corner Sections
- AVAILABLE BUTTS in continuous lengths with key-way splices. Factory cut or field cut lengths for precise installation.
- 180° "UNIFLEX" ADJUSTABLE PATTERN AND VOLUME CONTROLLER provides positive positioning, constant static pressure, constant outlet area.



ALS SERIES SLOT DIFFUSER

AIRVECTOR®

LISTED SIZES AVAILABLE
Any fractional inch increment of length 12" to 72"
One to ten slots
Lengths longer than 72" will be furnished in multiple sections for field butting.
Custom Paint - Lengths over 60" will be furnished in multiple sections

STYLE DETAILS	
MARGIN ONLY	Return
MARGIN, DAMPER AND PATTERN CONTROLLER	Supply

HOW TO ORDER ALS SERIES

ALS37 -E -4 -GK 48 2 /W

MODEL SERIES
- 1" Slot Diffuser **ALS17**
- 1" Slot Return **ALS10**
- 1/2" Slot Diffuser **ALS27**
- 1/2" Slot Return **ALS20**
- 3/4" Slot Diffuser **ALS37**
- 3/4" Slot Return **ALS30**

MARGIN STYLE
- Sidewall **-E**
- T-Bar Lay-In **-T**

FASTENING
- No Fastening **-1**
- Screw Fastening **-3**
- Concealed Mounting **-4**

Frame Gasket **-GK**

LENGTH (INCHES)

NUMBER OF SLOTS **1-8**

FINISH (OPTIONAL) *Standard is White (/**W**)* *See chart for more*

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

FASTENING METHOD

No Fastening -1	Screw -3	Concealed -4
	N/A with -T	

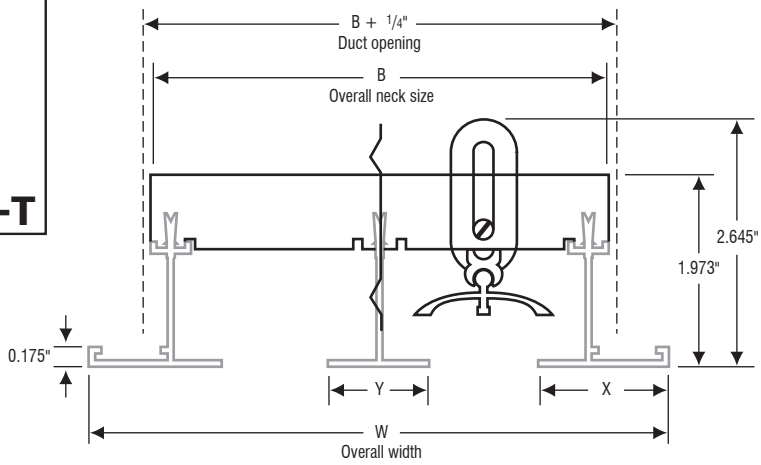
DIMENSIONAL DATA - LENGTH

Surface mounting **-E**

Nominal + 7/8"

Nominal - 1/4"

T-bar mounting (N/A with -3) **-T**



1/2" SLOT		3/4" SLOT		1" SLOT	
X	Y	X	Y	X	Y
1 1/8"	11/16"	1 1/8"	11/16"	1 1/4"	1"

1/2" SLOT

SLOTS	B	W
1	1 9/16"	2 23/32"
2	2 3/4"	3 29/32"
3	3 15/16"	5 3/32"
4	5 1/8"	6 9/32"
5	6 5/16"	7 15/32"
6	7 1/2"	8 21/32"
7	8 11/16"	9 27/32"
8	9 7/8"	11 1/32"

3/4" SLOT

SLOTS	B	W
1	1 13/16"	2 31/32"
2	3 1/4"	4 13/32"
3	4 11/16"	5 27/32"
4	6 1/8"	7 9/32"
5	7 9/16"	8 23/32"
6	9 "	10 5/32"
7	10 7/16"	11 19/32"
8	11 7/8"	13 1/32"

1" SLOT

SLOTS	B	W
1	2 3/8"	3 17/32"
2	4 3/8"	5 17/32"
3	6 3/8"	7 17/32"
4	8 3/8"	9 17/32"
5	10 3/8"	11 17/32"
6	12 3/8"	13 17/32"
7	14 3/8"	15 17/32"
8	16 3/8"	17 17/32"

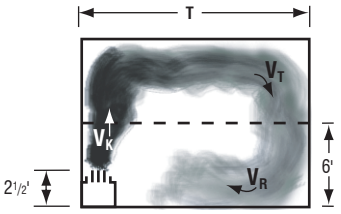
ALS17 1" SLOT SUPPLY DIFFUSER

AIRVECTOR®

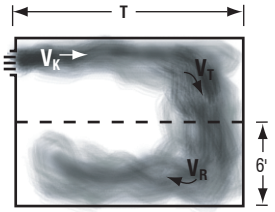
TABLE 1 SUPPLY AIR

CFM per Foot in Direction of T	No. of Slots	Min. P_S In. H_2O	Outlet Velocity (V_K) FPM	Throw (T) in Feet			Minimum Ceiling Height in Feet		NC
				Ceiling	Sidewall	Sill			
				Min.-Max.	Min.-Max.	Min.-Max.	@ -18F ΔT	@ -25F ΔT	
20	1	.02	500	6-8	4-7	1-2	8	9	20
30	1 2	.03 .02	750 500	9-13 7-9	7-10 5-7	2-3 1-2	9	10	20 20
40	1 2	.06 .03	1000 670	10-14 8-10	9-14 6-9	4-6 2-3	9	11	25 20
50	1 2 3	.09 .04 .02	1250 835 555	12-15 10-14 9-11	10-14 8-12 7-10	3-5 3-4 2-3	9½	11	31 20 20
60	2 3 4	.06 .03 .02	1000 665 500	15-18 10-13 8-11	9-13 7-11 6-9	4-6 2-4 2-3	9½	12	30 20 20
70	2 3 4	.09 .04 .02	1165 780 585	13-17 11-16 10-14	11-15 9-14 7-11	5-8 4-6 3-4	10	12	30 25 20
80	2 3 4 5	.11 .05 .03 .02	1335 890 665 533	15-19 12-17 10-14 9-13	14-17 10-14 8-12 7-11	6-10 4-7 3-5 2-4	10½	12½	35 25 20 20
90	3 4 5 6	.06 .04 .02 .02	1000 750 600 500	14-19 13-18 12-16 11-15	11-17 11-15 10-14 9-13	5-10 4-8 3-7 3-6	11	13	30 20 20 20
100	3 4 5 6	.08 .04 .03 .02	1110 835 665 555	16-21 15-20 14-18 13-17	14-20 13-18 12-16 11-15	7-12 6-11 5-9 4-8	11	13	30 25 20 20
120	3 4 5 6 7	.11 .06 .04 .03 .02	1335 1000 800 665 570	18-25 17-24 16-23 15-21 14-20	16-22 15-20 14-21 13-19 12-17	8-13 7-13 6-12 5-11 4-10	11½	13	35 30 25 20 20
140	4 5 6 7 8	.09 .05 .04 .03 .02	1165 935 780 665 585	18-25 18-26 17-25 16-23 15-20	16-21 16-22 15-22 14-20 13-20	8-15 8-14 7-14 6-12 5-10	11½	14	30 30 25 20 20
160	4 5 6 7 8 9	.11 .07 .05 .04 .03 .02	1335 1065 890 760 665 590	19-27 18-26 17-25 16-23 15-20 14-19	17-24 16-23 15-22 14-20 13-18 12-17	10-16 8-15 7-14 6-12 5-10 4-9	12	15	35 30 25 25 20 20
180	5 6 7 8 9 10	.09 .06 .05 .04 .03 .02	1200 1000 850 750 665 600	20-30 19-28 18-26 16-24 15-21 14-19	18-27 17-25 16-23 14-21 13-19 12-18	10-19 9-17 8-15 6-13 5-11 4-10	12	15	35 30 25 20 20 20
200	5 6 7 8 9 10	.11 .08 .06 .04 .03 .03	1335 1110 950 835 740 665	23-33 21-32 20-31 18-27 17-26 16-25	20-30 19-29 18-27 16-24 15-23 14-22	12-21 10-20 9-18 8-16 6-14 5-10	12	**5**	35 30 30 25 20 20
250	6 7 8 9 10	.12 .09 .07 .05 .04	1390 1190 1040 925 833	24-35 23-34 21-32 20-31 19-30	21-31 20-30 19-28 18-27 17-26	- - - - -	13	15	35 35 30 25 25
300	7 8 9 10	.13 .10 .08 .06	1430 1250 1110 1000	25-40 24-36 23-34 22-32	23-35 22-32 20-30 19-28	- - - -	13	16	35 35 30 30
350	8 9 10	.13 .11 .09	1460 1300 1165	27-47 26-45 25-42	24-43 23-41 22-39	- - -	14	16	40 35 30

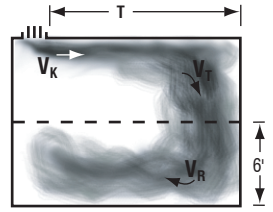
9 and 10 slots not available



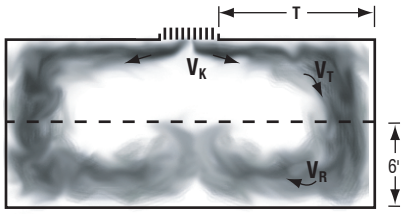
SILL



SIDEWALL



CEILING ONE WAY



CEILING TWO WAY

ALS17 1" SLOT SUPPLY DIFFUSER

AIRVECTOR®

NOTES:

a. Table 1 based on 4 ft. 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 alternating active and inactive sections, a reduction in throw can be obtained by omitting the factors contained in Table 2.
d. P_S 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 4.
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 2 CONTINUOUS DIFFUSER LENGTH FACTORS

Modify Table 1 by factors for diffuser lengths above 4ft.				
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 3 SUPPLY AIR TEMPERATURE FACTORS

Multiply Throw in Table 1 (or factor in Table 2 if used) by listed value.			
Ceiling Sidewall Sill	@ - 11°C ΔT	@ 0°C ΔT	@ + 14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@ + 25F ΔT
	T x 1.0	T x 1.1	T x 1.2

TABLE 4 VERTICAL DOWN-THROW and Supply Temperature Factors

Multiply Throw-Sidewall in Table 1 (or factor in Table 2 if used) by listed value.			
	@ - 11°C ΔT	@ 0°C ΔT	@ + 14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@ + 25F ΔT
	Cooling	Ventilating	Heating
Case 1	T x 1.0	T x .90	T x .60
Case 2	T x .70	T x .60	T x .40

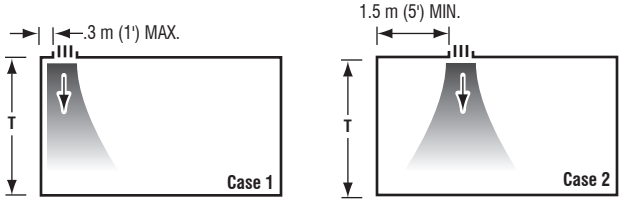
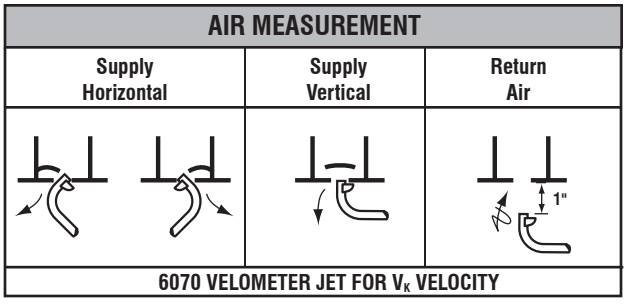


TABLE 5 SUPPLY DIFFUSERS AREAS Per Ft. of Length

No. of Slots								
	1	2	3	4	5	6	7	8
A_N Area	.04	.06	.09	.12	.15	.18	.21	.24
	.17	.33	.50	.67	.83	1.00	1.17	1.33



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

CFM = A_K x length in feet x V_K

ALS10 1" SLOT RETURN

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TABLE 1 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" P_S	- .03" P_S	- .08" P_S	- .10" P_S	- .15" P_S	- .20" P_S
		CFM	CFM	CFM	CFM	CFM	CFM
1	.06	35	43	70	80	95	110
2	.11	70	85	140	155	190	220
3	.17	105	130	210	235	285	330
4	.23	140	170	280	310	380	440
5	.28	175	215	350	390	475	550
6	.33	210	255	420	465	570	660
7	.39	245	300	490	545	665	770
8	.44	280	340	560	620	760	880

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

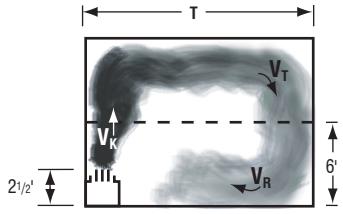
ALS27 1/2" SUPPLY SLOT DIFFUSER

AIRVECTOR®

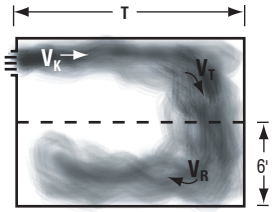
TABLE 1 SUPPLY AIR

CFM per Foot in Direction of T	No. of Slots	Min. P_S In. H_2O	Outlet Velocity (V_K) FPM	Throw (T) in Feet			Minimum Ceiling Height in Feet		NC
				Ceiling	Sidewall	Sill			
				Min.-Max.	Min.-Max.	Min.-Max.	@ -18F ΔT	@ -25F ΔT	
10	1 2	.02 <.01	500 335	5-7 4-6	3-5 2-4	1-2 1-2	7 1/2	9	<20 <20
20	1 2 3	.08 .02 .01	1000 670 400	10-13 8-11 6-9	8-11 6-9 4-7	1-3 2-3 1-2	8	9	20 <20 <20
30	1 2 3 4	.18 .05 .02 .01	1500 1000 600 430	11-16 10-14 8-11 7-9	10-14 8-12 6-9 5-7	4-6 3-4 2-3 1-2	9	10	25 20 <20 <20
40	2 3 4 5	.08 .04 .02 .01	1330 800 570 445	13-17 10-14 9-12 8-11	11-15 8-12 7-10 6-9	4-6 3-5 2-3 2-3	9	11	25 20 20 <20
50	3 4 5 6	.06 .03 .02 .01	1000 710 560 500	11-15 10-14 9-13 8-12	9-13 8-12 7-11 7-10	4-6 3-4 2-4 1-3	9 1/2	11	25 20 20 <20
60	3 4 5 6 7	.08 .05 .03 .02 .01	1200 855 670 600 500	13-17 12-16 11-15 10-14 9-13	11-15 10-14 9-13 8-12 7-11	5-8 4-7 3-6 3-5 2-4	9 1/2	12	25 25 20 <20 <20
70	3 4 5 6 7	.12 .06 .04 .03 .02	1400 1000 780 700 580	15-20 13-18 12-16 11-15 10-15	13-18 11-16 10-14 9-13 8-13	6-11 5-9 4-7 3-6 2-5	10	12	25 25 20 20 20
80	4 5 6 7 8	.08 .05 .04 .03 .02	1140 890 800 670 570	14-20 13-19 13-18 13-17 12-16	12-18 11-17 11-16 11-15 10-14	6-11 5-10 5-9 4-8 3-7	10 1/2	12 1/2	25 25 25 20 20
90	4 5 6 7 8 9	.10 .07 .05 .04 .03 .02	1280 1000 900 750 640 600	17-24 16-22 16-21 15-20 14-18 13-17	15-21 14-20 14-19 13-18 12-16 11-15	8-14 7-13 7-12 6-11 5-9 4-8	11	13	30 25 25 25 20 20
100	5 6 7 8 9 10	.09 .06 .05 .03 .03 .02	1120 1000 830 710 670 590	18-25 17-24 16-23 14-20 13-19 12-18	16-22 15-21 14-20 12-18 11-17 10-16	9-15 8-14 7-13 6-11 5-10 5-10	11	13	25 25 25 20 20 <20
120	6 7 8 9 10	.09 .07 .05 .04 .03	1200 1000 860 800 705	19-27 18-26 17-25 16-24 15-22	17-24 16-23 15-22 14-21 13-19	10-16 8-15 7-14 6-13 5-11	11 1/2	13	30 25 25 20 20
140	7 8 9 10	.10 .06 .05 .04	1170 1000 930 825	20-30 19-28 18-27 17-25	18-27 17-25 16-24 15-22	10-19 9-17 8-16 7-14	11 1/2	14	25 25 20 20
160	8 9 10	.08 .07 .05	1140 1070 940	21-32 20-30 19-28	19-29 18-27 17-25	10-20 9-18 8-17	12	15	25 25 20
180	8 9 10	.08 .07 .05	1280 1200 1060	24-35 23-34 22-32	21-31 20-30 19-29	12-22 11-21 10-20	12	15	30 25 25
200	9 10	.10 .08	1335 1175	25-39 24-37	22-35 21-33	-	12	15	30 25

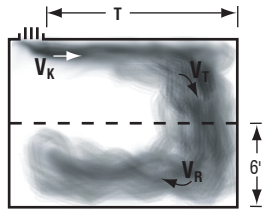
9 and 10 slots not available



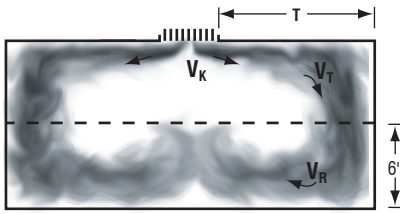
SILL



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_2O										
.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 H_2O
- NC Re 8db Room attenuation
- T Throw in feet at X and Y
- ΔT Temperature Differential

ALS27 1/2" SLOT SUPPLY DIFFUSER

AIRVECTOR®

NOTES:

a. Table 1 based on 4 ft. 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 alternating active and inactive sections, a reduction in throw can be obtained by omitting the factors contained in Table 2.
d. P_S 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 4.
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 2 CONTINUOUS DIFFUSER LENGTH FACTORS

Modify Table 1 by factors for diffuser lengths above 4ft.				
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 3 SUPPLY AIR TEMPERATURE FACTORS

Multiply Throw in Table 1 (or factor in Table 2 if used) by listed value.			
Ceiling Sidewall Sill	@ - 11°C ΔT	@ 0°C ΔT	@+14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@+25F ΔT
	T x 1.0	T x 1.1	T x 1.2

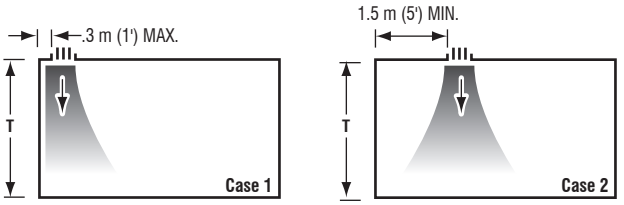


TABLE 4 VERTICAL DOWN-THROW and Supply Temperature Factors

Multiply Throw-Sidewall in Table 1 (or factor in Table 2 if used) by listed value.			
	@ - 11°C ΔT	@ 0°C ΔT	@+14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@+25F ΔT
	Cooling	Ventilating	Heating
Case 1	T x 1.0	T x .90	T x .60
Case 2	T x .70	T x .60	T x .40

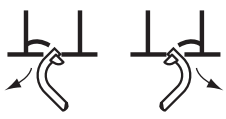
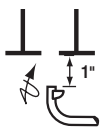
AIR MEASUREMENT		
Supply Horizontal	Supply Vertical	Return Air
		
6070 VELOMETER JET FOR V_K VELOCITY		

TABLE 5 SUPPLY DIFFUSERS AREAS Per Ft. of Length

No. of Slots								
	1	2	3	4	5	6	7	8
A_N Area	.02	.03	.05	.07	.09	.10	.12	.14
A_K Area	.08	.17	.25	.33	.42	.50	.58	.67

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

CFM = A_K x length in feet x V_K

ALS20 1/2" SLOT RETURN

AIRVECTOR®

TABLE 1 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" P_S CFM	- .03" P_S CFM	- .08" P_S CFM	- .10" P_S CFM	- .15" P_S CFM	- .20" P_S CFM
1	.03	15	20	30	35	40	45
2	.06	35	45	70	80	95	110
3	.08	55	70	110	125	150	175
4	.11	70	85	140	155	190	220
5	.14	90	110	180	200	245	285
6	.16	110	135	220	245	300	345
7	.20	130	160	260	290	355	410
8	.22	140	170	280	310	385	440

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

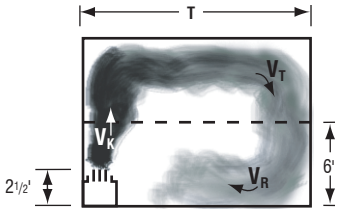
ALS37 3/4" SUPPLY SLOT DIFFUSER

AIRVECTOR®

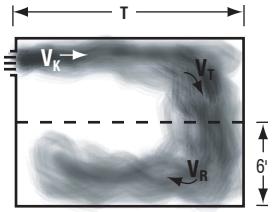
TABLE 1 SUPPLY AIR

CFM per Foot in Direction of T	No. of Slots	Min. P_S In. H_2O	Outlet Velocity (V_K) FPM	Throw (T) in Feet			Minimum Ceiling Height in Feet		NC
				Ceiling	Sidewall	Sill			
				Min.-Max.	Min.-Max.	Min.-Max.	@ -18F ΔT	@ -25F ΔT	
10	1	.01	335	4-6	2-4	1-2	7 1/2	9	<20
20	1 2	.04 <.01	670 400	8-11 6-9	6-9 4-7	2-3 1-2	8	9	20 <20
30	1 2 3	.09 .02 <.01	1000 600 430	10-14 8-11 7-9	8-12 6-9 5-7	3-4 2-3 1-2	9	10	25 20 <20
40	1 2 3 4	.16 .04 .02 .01	1340 800 575 445	13-7 10-14 9-12 8-11	11-15 8-12 7-10 6-9	4-6 3-4 2-3 2-3	9	11	30 25 20 <20
50	2 3 4 5	.06 .03 .02 <.01	1000 715 555 415	11-15 10-14 9-13 7-12	9-13 8-12 7-11 6-10	4-6 3-4 2-3 2-3	9 1/2	11	25 20 <20 <20
60	2 3 4 5	.09 .04 .02 .01	1200 860 665 500	13-17 12-16 11-15 9-13	11-15 10-14 9-13 7-11	5-8 4-7 3-6 3-4	9 1/2	12	30 25 20 <20
70	2 3 4 5 6	.13 .06 .03 .02 .01	1400 1000 775 585 500	15-20 13-18 12-16 10-15 9-14	13-18 11-16 10-14 8-13 7-12	6-11 5-9 4-7 3-5 2-5	10	12	30 25 20 <20 <20
80	3 4 5 6 7	.07 .04 .03 .02 <.01	1140 885 665 575 500	14-20 13-19 13-17 12-16 11-15	12-18 11-17 11-15 10-14 9-13	6-11 5-10 4-8 3-7 3-6	10 1/2	12 1/2	30 25 20 <20 <20
90	3 4 5 6 7	.09 .05 .03 .02 .01	1290 1000 750 645 560	17-24 16-22 15-20 14-18 13-17	15-21 14-20 13-18 12-16 11-15	8-14 7-13 6-11 5-9 4-8	11	13	30 25 20 <20 <20
100	3 4 5 6 7	.13 .06 .04 .03 .02	1430 1110 830 715 630	19-26 18-25 16-23 14-20 13-19	17-23 16-22 14-20 12-18 11-17	10-16 9-15 7-13 6-11 5-10	11	13	30 25 20 20 <20
120	4 5 6 7 8	.09 .06 .04 .03 .02	1330 1000 860 750 630	19-27 18-26 17-25 16-23 15-20	17-24 16-23 15-22 14-20 13-18	10-16 8-15 7-14 6-12 5-10	11 1/2	13	35 30 25 20 <20
140	5 6 7 8 9	.08 .06 .04 .03 .02	1170 1000 875 740 665	20-30 19-28 18-26 16-24 15-21	18-27 17-25 16-23 14-21 13-19	10-19 9-17 8-15 6-13 5-11	11 1/2	14	30 25 25 20 <20
160	6 7 8 9 10	.07 .05 .04 .03 .02	1150 1000 840 760 695	21-32 20-30 18-27 17-26 16-25	19-29 18-27 16-24 15-23 14-22	10-20 9-18 8-16 6-14 5-13	12	15	25 25 20 <20 <20
180	6 7 8 9 10	.09 .07 .05 .04 .03	1290 1130 950 860 780	24-35 23-34 20-31 19-30 18-29	21-31 20-30 18-28 17-27 16-26	12-22 11-21 9-19 8-18 7-17	12	15	30 30 25 20 <20
200	6 7 8 9 10	.11 .08 .06 .05 .04	1440 1250 1110 955 870	26-40 25-38 24-36 22-33 21-31	23-36 22-34 21-32 20-30 19-28	-	12	15	30 30 25 25 20
250	8 9 10	.10 .07 .06	1315 1190 1085	26-46 25-42 24-39	23-41 22-38 21-35	-	13	15	35 30 25

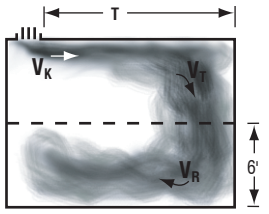
9 and 10 slots not available



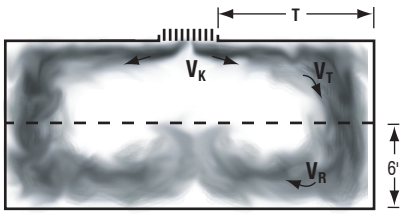
SILL



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_2O										
.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 H_2O
NC	Re 8db Room attenuation
T	Throw in feet at X and Y
ΔT	Temperature Differential

ALS37 3/4" SLOT SUPPLY DIFFUSER

AIRVECTOR®

NOTES:

a. Table 1 based on 4 ft. 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 alternating active and inactive sections, a reduction in throw can be obtained by omitting the factors contained in Table 2.
d. P_S 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 4.
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 2 CONTINUOUS DIFFUSER LENGTH FACTORS

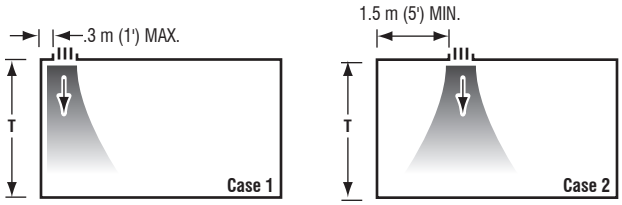
Modify Table 1 by factors for diffuser lengths above 4ft.				
Diffuser Length	Throw (T)			NC
	Ceiling Min.-Max.	Sidewall Min.-Max.	Sill Min.-Max.	
4' - 6'	No Change			+ 0
7' - 20'	T x 1.10			+ 5
21' - 100'	T x 1.15			+ 10

TABLE 3 SUPPLY AIR TEMPERATURE FACTORS

Multiply Throw in Table 1 (or factor in Table 2 if used) by listed value.			
Ceiling Sidewall Sill	@ - 11°C ΔT	@ 0°C ΔT	@+14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@+25F ΔT
	T x 1.0	T x 1.1	T x 1.2

TABLE 4 VERTICAL DOWN-THROW and Supply Temperature Factors

Multiply Throw-Sidewall in Table 1 (or factor in Table 2 if used) by listed value.			
	@ - 11°C ΔT	@ 0°C ΔT	@+14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@+25F ΔT
	Cooling	Ventilating	Heating
Case 1	T x 1.0	T x .90	T x .60
Case 2	T x .70	T x .60	T x .40



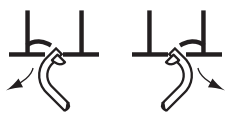
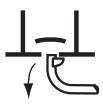
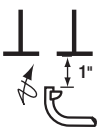
AIR MEASUREMENT		
Supply Horizontal	Supply Vertical	Return Air
		
6070 VELOMETER JET FOR V_K VELOCITY		

TABLE 5 SUPPLY DIFFUSERS AREAS Per Ft. of Length

No. of Slots								
	1	2	3	4	5	6	7	8
A_N Area	.03	.05	.07	.09	.12	.14	.16	.19
A_K Area	.12	.24	.36	.48	.60	.72	.84	.96

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

CFM = A_K x length in feet x V_K

ALS30 3/4" SLOT RETURN

AIRVECTOR®

TABLE 1 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" P_S CFM	- .03" P_S CFM	- .08" P_S CFM	- .10" P_S CFM	- .15" P_S CFM	- .20" P_S 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

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

HOW TO SPECIFY ARCHITECTURAL LINEAR SLOT DIFFUSERS

Supply Diffuser

Supply and mounting of linear slot diffuser with uniflex pattern and volume controller, series **ALS**. Constructed from powder coater extruded aluminum with 45 degree mitered corners, manufactured by Airvector.

Return

Supply and mounting of linear slot return, series **ALS**. Constructed from powder coater extruded aluminum with 45 degree mitered corners, manufactured by Airvector.