



# Model ASD Performance Data For 1" Slot.

## Return Air Performance Data Per Foot

NEGATIVE STATIC PRESSURE							NEGATIVE STATIC PRESSURE								
-.019 -.039 -.052 -.083 -.22							-.019 -.039 -.052 -.083 -.22								
Number of Slots	A <sub>k</sub>	CAPACITY IN CFM					Number of Slots	A <sub>k</sub>	CAPACITY IN CFM						
1	.054	NC	> 20	> 20	20	25	37	6	.28	NC	> 20	> 20	28	31	40
		CFM	25	35	40	50	80			CFM	150	210	240	300	480
2	.097	NC	> 20	> 20	22	25	39	7	.326	NC	> 20	> 20	30	33	42
		CFM	50	70	80	100	160			CFM	175	245	280	350	560
3	.14	NC	> 20	> 20	23	26	40	8	.372	NC	> 20	> 20	31	34	46
		CFM	75	105	120	150	240			CFM	200	280	320	400	640
4	.186	NC	> 20	> 20	25	27	42	9	.432	NC	> 20	> 20	33	36	52
		CFM	100	140	160	200	320			CFM	225	305	345	425	720
5	.246	NC	> 20	> 20	27	29	45	10	.492	NC	> 20	> 20	35	38	55
		CFM	125	175	200	250	400			CFM	250	330	370	450	800

**NOTES:** Air capacities are based on pattern control mechanism removed.  
Air capacity is reduced by 60% if pattern control mechanism is used.

### NOTES ON TEST DATA

- All tests were conducted in strict accordance with ADC 1062 R4 test methods. Data was generated for static pressure, area factor (A<sub>k</sub>), throw characteristics and sound power level.
- Tests were conducted at 25, 35, 40 and 50 CFM per foot per slot to show performance characteristics at various CFM levels. Static pressure levels were taken 1 1/2 duct diameters upstream of the plenum inlet as required.
- All data based on supply air 20° below room air temperature.
- Maximum throw shown is based on a terminal velocity (VT) of 50 fpm with minimum throw based on VT of 150 fpm. Throw data applies to ceiling applications. Sidewall and sill installations reduce throw readings by 35%.
- For two way throw, break down the CFM per slot and use the 1 way data as shown.
- All sound data reflects 10dB room absorption as per current testing methods. All sound data is based on four foot lengths. Corrections for longer and shorter lengths are as follows:

Active length	
2'-3'	- 2dB
4'	0
5'	+ 1dB
6'-8'	+ 2dB
9' or more	+ 5dB

### A<sub>k</sub> Per Foot (with pattern controller installed)

Number of Slots	A <sub>k</sub>	Number of Slots	A <sub>k</sub>
1	.035	6	.181
2	.063	7	.212
3	.091	8	.242
4	.121	9	.281
5	.16	10	.32

$$CFM = V_k (\text{outlet velocity}) \times A_k$$

$$V_k = \frac{CFM}{A_k}$$

### Results of test conducted to determine suitability of PVC Pattern Controller

The national fire code, Volume 9, 1981, Page 90A-18, Paragraph 2-3.3 states in part the following:

Air inlet and air outlet ceiling devices constructed of combustible materials and located at duct openings shall be permitted only if the installation of such devices conforms to all of the following:

A. The devices shall be of such material and installed in such a manner as will assure their falling from position before igniting.

Tests were conducted by ETL Testing Laboratories, Inc. to give verifiable results relative to the NFPA recommendations. Results from ETL report number 455978 dated 30 April 1982 state in part, "deflector vanes did melt and fall out of the fixture and did not ignite." A temperature of 400°F was reached before any softening occurred in the vane.

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