



**PRODUCTS TESTING**

The following tables include the results of tests conducted on three linear slot diffusers. The test result include Noise Criteria (NC), static pressure versus air flow, throw and Ak. The diffusers were selected and supplied by Beta in October 1991. The extrapolations and interpolations were made to cover a full range of sizes and parameters according to ETL testing laboratories Inc. who made the tests.

**TEST METHOD**



The air diffusers were tested in accordance with the Air diffusion council test code for grilles, registers and diffusers No. ADC 1062:GRD-84, the test was conducted in ETL testing laboratories.

The diffusers were installed in the ADC facility and supplied with measured volume of air. The static pressure was measured (1-1.5) duct diameters upstream of the diffuser inlet.

Acoustical data was obtained employing Bruel and Kjaer digital frequency analyzers, and analyzed by computer. Sound power levels were plotted on a graph of noise criteria curves which are in ADC codes.

**NOTES**

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VERTICAL DISCHARGE

SLD / RLD - SUPPLY

SLOTS	CFM PER METER	SLOT WIDTH											
		3/5"				4/5"				1"			
		A <sub>k</sub> /m (Ft <sup>2</sup> /m)	P <sub>s</sub> (IWG)	Throw (Ft)	NC	A <sub>k</sub> /m (Ft <sup>2</sup> /m)	P <sub>s</sub> (IWG)	Throw (Ft)	NC	A <sub>k</sub> /m (Ft <sup>2</sup> /m)	P <sub>s</sub> (IWG)	Throw (Ft)	NC
1	50	0.066	0.036	1 - 3 - 5	<15	0.082	0.023	1 - 3 - 5	<15	0.102	0.010	1 - 3 - 5	<15
	75		0.081	2 - 5 - 7	16		0.052	2 - 5 - 7	15		0.023	2 - 5 - 7	<15
	100		0.144	3 - 7 - 9	23		0.092	3 - 6 - 9	22		0.041	3 - 5 - 8	<15
	125		0.225	5 - 8 - 11	29		0.144	4 - 7 - 10	27		0.061	3 - 6 - 9	18
	150		0.328	5 - 9 - 12	36		0.210	5 - 8 - 11	33		0.086	4 - 7 - 10	23
	175		0.445	7 - 10 - 12	40		0.285	6 - 9 - 12	36		0.113	5 - 8 - 11	26
	200		0.589	8 - 11 - 14	46		0.377	7 - 10 - 13	41		0.150	6 - 9 - 12	30
2	50	0.175	0.013	1 - 1 - 2	<15	0.221	0.008	1 - 1 - 2	<15	0.270	0.006	1 - 1 - 1	<15
	100		0.047	2 - 3 - 4	17		0.030	1 - 1 - 2	16		0.012	1 - 1 - 2	<15
	150		0.105	3 - 4 - 6	23		0.067	1 - 3 - 5	22		0.039	1 - 2 - 3	17
	200		0.188	4 - 6 - 8	35		0.120	3 - 5 - 7	32		0.082	2 - 4 - 6	22
	250		0.292	5 - 7 - 9	41		0.187	4 - 6 - 8	37		0.126	3 - 5 - 7	26
	300		0.422	6 - 8 - 10	49		0.270	5 - 7 - 9	43		0.194	4 - 6 - 8	31
	350		0.578	7 - 9 - 11	54		0.370	6 - 8 - 10	47		0.266	5 - 7 - 9	34
3	100	0.254	0.022	1 - 2 - 3	<15	0.321	0.014	1 - 1 - 2	<15	0.393	0.009	1 - 1 - 1	<15
	150		0.048	2 - 3 - 4	17		0.031	1 - 2 - 3	16		0.024	1 - 1 - 2	<15
	200		0.086	3 - 5 - 6	23		0.055	2 - 4 - 6	22		0.038	2 - 3 - 5	16
	250		0.134	4 - 6 - 8	31		0.086	4 - 5 - 7	29		0.049	3 - 4 - 6	20
	300		0.194	5 - 7 - 9	38		0.124	5 - 6 - 8	34		0.081	4 - 5 - 7	24
	350		0.263	6 - 8 - 10	43		0.168	6 - 7 - 9	38		0.109	5 - 6 - 8	27
	400		0.344	8 - 9 - 11	48		0.220	7 - 8 - 10	42		0.142	6 - 7 - 9	30
4	150	0.320	0.030	1 - 2 - 5	<15	0.402	0.019	1 - 2 - 5	<15	0.495	0.009	1 - 1 - 2	<15
	200		0.052	3 - 4 - 6	17		0.033	2 - 3 - 5	16		0.020	1 - 2 - 3	<15
	250		0.081	4 - 5 - 7	23		0.052	3 - 4 - 6	22		0.036	2 - 3 - 4	<15
	300		0.117	5 - 6 - 7	28		0.075	4 - 5 - 6	26		0.043	3 - 4 - 5	18
	350		0.159	6 - 7 - 8	34		0.102	4 - 6 - 7	31		0.077	4 - 5 - 6	22
	400		0.208	7 - 8 - 9	36		0.133	5 - 7 - 8	33		0.102	4 - 6 - 7	23
	450		0.266	8 - 9 - 10	41		0.170	6 - 8 - 9	37		0.121	5 - 7 - 8	26
5	200	0.389	0.034	2 - 4 - 6	<15	0.490	0.022	1 - 3 - 5	<15	0.602	0.013	1 - 2 - 4	<15
	250		0.053	3 - 4 - 7	16		0.034	2 - 3 - 6	15		0.021	1 - 2 - 5	<15
	300		0.077	4 - 5 - 8	20		0.049	3 - 4 - 6	20		0.039	2 - 3 - 5	15
	350		0.105	5 - 6 - 8	26		0.067	4 - 5 - 7	25		0.051	3 - 4 - 6	17
	400		0.136	6 - 7 - 9	30		0.087	5 - 6 - 8	28		0.069	4 - 5 - 7	19
	450		0.172	7 - 8 - 9	34		0.110	6 - 7 - 8	31		0.074	5 - 6 - 7	22
	500		0.213	8 - 9 - 10	39		0.136	7 - 8 - 9	35		0.111	6 - 7 - 8	25
6	250	0.455	0.038	2 - 3 - 6	<15	0.578	0.024	1 - 2 - 5	<15	0.708	0.017	1 - 1 - 3	<15
	300		0.055	3 - 4 - 6	16		0.035	2 - 3 - 5	15		0.026	1 - 2 - 4	<15
	350		0.075	4 - 5 - 7	19		0.048	3 - 4 - 6	18		0.033	2 - 3 - 5	<15
	400		0.097	5 - 6 - 8	23		0.062	4 - 5 - 7	22		0.048	3 - 4 - 6	16
	450		0.123	6 - 7 - 9	26		0.079	5 - 6 - 8	25		0.058	4 - 5 - 7	17
	500		0.153	7 - 8 - 10	29		0.098	6 - 7 - 9	27		0.067	5 - 6 - 8	18
	600		0.219	8 - 9 - 11	39		0.140	7 - 8 - 10	35		0.106	6 - 7 - 9	25

**SYMBOLS**

CFM Per Meter : Air volume in cubic feet per 1 meter length  
 Ak : Effective face area in square feet per meter  
 Ps : Static pressure in inch water gauge  
 Th : Throw in feet  
 NC : Noise Criteria

**CONDITIONS**

\* Supply  
 \* Vertical Discharge flow pattern  
 \* Noise Criteria Values are based on (10 dB) room attenuation.  
 \* Damper is fully open  
 \* The tested specimens were of 1 meter length

**NOTES**

\* The large throw values are based on the minimum terminal velocity of 50 fpm.  
 \* The middle throw values are based on the middle terminal velocity of 100 fpm  
 \* The small throw values are based on the maximum terminal velocity of 150 fpm.





# PERFORMANCE DATA

## LINEAR SLOT DIFFUSERS



HORIZONTAL DISCHARGE

SLD / RLD - SUPPLY

SLOTS	CFM PER METER	SLOT WIDTH											
		3/5"				4/5"				1"			
		A <sub>k</sub> / m (Ft <sup>2</sup> / m)	P <sub>s</sub> (IWG)	Throw (Ft)	NC	A <sub>k</sub> / m (Ft <sup>2</sup> / m)	P <sub>s</sub> (IWG)	Throw (Ft)	NC	A <sub>k</sub> / m (Ft <sup>2</sup> / m)	P <sub>s</sub> (IWG)	Throw (Ft)	NC
1	50	0.046	0.048	1 - 4 - 8	17	0.059	0.031	1 - 4 - 8	18	0.076	0.020	1 - 3 - 7	<15
	75		0.109	4 - 7 - 11	26		0.070	3 - 6 - 10	25		0.045	3 - 5 - 9	17
	100		0.195	6 - 10 - 15	36		0.125	5 - 9 - 14	33		0.080	5 - 8 - 13	23
	125		0.305	9 - 15 - 23	43		0.195	8 - 13 - 21	38		0.125	7 - 12 - 19	27
	150		0.438	14 - 19 - 29	49		0.280	12 - 17 - 26	43		0.179	10 - 15 - 23	31
2	50	0.119	0.016	3 - 6 - 9	18	0.150	0.010	3 - 5 - 8	<15	0.185	0.006	3 - 5 - 7	<15
	100		0.063	5 - 11 - 19	20		0.040	4 - 10 - 17	20		0.026	3 - 9 - 15	<15
	150		0.141	6 - 13 - 25	34		0.090	5 - 12 - 22	31		0.058	4 - 11 - 20	22
	200		0.247	10 - 20 - 30	45		0.158	8 - 18 - 28	40		0.101	7 - 16 - 25	29
	250		0.391	14 - 25 - 35	51		0.250	12 - 23 - 33	45		0.160	10 - 21 - 30	33
3	100	0.191	0.031	4 - 6 - 12	16	0.240	0.020	3 - 5 - 11	17	0.297	0.013	3 - 5 - 10	<15
	150		0.069	6 - 10 - 20	24		0.044	5 - 9 - 18	23		0.028	4 - 8 - 15	15
	200		0.122	7 - 15 - 25	34		0.078	6 - 13 - 23	31		0.050	5 - 12 - 21	22
	250		0.191	10 - 20 - 32	43		0.122	9 - 18 - 29	38		0.078	8 - 16 - 26	27
	300		0.291	15 - 24 - 36	48		0.186	13 - 22 - 34	42		0.119	12 - 20 - 31	30
4	150	0.257	0.039	5 - 7 - 17	19	0.324	0.025	4 - 6 - 15	19	0.399	0.016	3 - 5 - 13	<15
	200		0.069	6 - 11 - 19	26		0.044	5 - 10 - 18	25		0.028	4 - 9 - 16	17
	250		0.108	7 - 15 - 24	33		0.069	6 - 13 - 22	30		0.044	5 - 11 - 20	21
	300		0.156	10 - 20 - 30	39		0.100	9 - 18 - 28	35		0.064	8 - 16 - 25	25
	350		0.211	14 - 25 - 37	45		0.135	12 - 23 - 34	40		0.086	10 - 21 - 31	29
5	200	0.323	0.053	6 - 8 - 18	21	0.410	0.034	5 - 7 - 16	21	0.508	0.022	4 - 6 - 14	<15
	250		0.081	8 - 13 - 22	28		0.052	7 - 11 - 20	26		0.033	6 - 10 - 18	18
	300		0.117	10 - 16 - 25	33		0.075	9 - 14 - 23	30		0.048	8 - 12 - 21	21
	350		0.159	13 - 21 - 32	38		0.102	11 - 19 - 29	34		0.065	10 - 17 - 26	24
	400		0.209	15 - 25 - 36	44		0.134	13 - 23 - 33	39		0.086	11 - 21 - 30	28
6	250	0.389	0.063	6 - 10 - 18	23	0.494	0.040	5 - 8 - 16	22	0.611	0.026	4 - 7 - 14	<15
	300		0.089	8 - 12 - 23	30		0.057	7 - 11 - 20	28		0.036	6 - 10 - 18	19
	350		0.122	10 - 17 - 27	34		0.078	9 - 15 - 24	31		0.050	8 - 13 - 21	22
	400		0.159	11 - 21 - 33	39		0.102	10 - 19 - 30	35		0.065	9 - 17 - 27	25
	450		0.203	13 - 25 - 37	43		0.130	12 - 23 - 34	38		0.083	11 - 21 - 31	27

### SYMBOLS

CFM Per Meter : Air volume in cubic feet per 1 meter length  
 Ak : Effective face area in square feet per meter  
 Ps : Static pressure in inch water gauge  
 Th : Throw in feet  
 NC : Noise Criteria

### CONDITIONS

\* Supply  
 \* Horizontal Discharge flow pattern  
 \* Noise Criteria Values are based on (10 dB) room attenuation.  
 \* Damper is fully open  
 \* The tested specimens were of 1 meter length

### NOTES

\* The large throw values are based on the minimum terminal velocity of 50 fpm.  
 \* The middle throw values are based on the middle terminal velocity of 100 fpm  
 \* The small throw values are based on the maximum terminal velocity of 150 fpm.





SLD / RLD - RETURN

SLOTS	CFM PER METER	SLOT WIDTH					
		3/5"		4/5"		1"	
		Neg. P <sub>s</sub> (IWG)	NC	Neg. P <sub>s</sub> (IWG)	NC	Neg. P <sub>s</sub> (IWG)	NC
1	75	0.133	19	0.085	19	0.054	<15
	100	0.234	26	0.150	25	0.096	17
	125	0.359	35	0.230	32	0.147	22
	150	0.544	44	0.348	39	0.223	28
	175	0.734	50	0.470	44	0.301	32
2	150	0.156	19	0.100	19	0.064	<15
	175	0.228	26	0.146	25	0.093	17
	200	0.283	31	0.181	29	0.116	20
	250	0.438	40	0.280	36	0.179	26
	300	0.625	48	0.400	42	0.256	30
3	200	0.156	20	0.100	20	0.064	<15
	250	0.244	28	0.156	26	0.100	18
	300	0.352	34	0.225	31	0.144	22
	350	0.478	41	0.306	37	0.196	26
	450	0.794	49	0.508	43	0.325	31
4	300	0.250	23	0.160	22	0.102	<15
	350	0.339	30	0.217	28	0.139	19
	400	0.438	35	0.280	32	0.179	22
	500	0.661	43	0.423	38	0.271	27
	600	0.981	50	0.628	44	0.402	32
5	300	0.175	21	0.112	21	0.072	<15
	400	0.309	30	0.198	28	0.127	19
	500	0.484	38	0.310	34	0.198	24
	600	0.695	43	0.445	38	0.285	27
	700	0.945	50	0.605	44	0.387	32
6	400	0.244	24	0.156	23	0.100	15
	500	0.380	31	0.243	29	0.156	20
	600	0.547	39	0.350	35	0.224	25
	700	0.742	44	0.475	39	0.304	28
	800	0.972	50	0.622	44	0.398	32

**SYMBOLS**

CFM Per Meter : Air volume in cubic feet per 1 meter length  
 P<sub>s</sub> : Negative static pressure in inch water gauge  
 NC : Noise Criteria

**CONDITIONS**

\* Return  
 \* Noise Criteria Values are based on (10 dB) room attenuation.  
 \* Damper is fully open  
 \* The tested specimens were of 1 meter length

