



**ALSDS Spiral Diffuser**

**½" wide slot - nonducted**

1-Slot	Airflow Rate (CFM/Linear Foot)	7	10	13	17	20	23	27	30	33	37
	Static Pressure	.002	.003	.006	.009	.016	.018	.024	.030	.037	.045
	Horizontal Throw	7-4-2	11-6-4	15-7-5	19-9-6	22-11-7	26-13-9	30-15-10	33-17-11	37-19-12	41-20-14
	Noise Criteria	<15	<15	<15	<15	<15	<15	19	21	23	25
2-Slot	Airflow Rate (CFM/Linear Foot)	10	17	23	30	37	43	50	57	63	70
	Static Pressure	.001	.002	.004	.007	.011	.015	.020	.026	.032	.039
	Horizontal Throw	6-3-2	9-5-3	13-6-4	17-8-6	20-10-7	24-12-8	28-14-9	31-16-10	35-18-12	39-19-13
	Noise Criteria	<15	<15	<15	<15	<15	<15	19	23	27	31
3-Slot	Airflow Rate (CFM/Linear Foot)	13	23	33	43	53	63	73	83	93	103
	Static Pressure	.001	.002	.004	.006	.009	.012	.017	.021	.027	.033
	Horizontal Throw	5-3-2	10-5-3	14-7-5	18-9-6	22-11-7	26-13-9	30-15-10	34-17-11	38-19-13	42-21-14
	Noise Criteria	<15	<15	<15	<15	<15	18	21	25	30	33
4-Slot	Airflow Rate (CFM/Linear Foot)	17	30	43	57	70	83	97	110	123	137
	Static Pressure	.001	.002	.003	.005	.008	.012	.016	.020	.025	.031
	Horizontal Throw	6-3-2	10-5-3	15-8-5	20-10-7	24-12-8	29-14-10	31-17-11	38-19-13	43-21-14	47-24-16
	Noise Criteria	<15	<15	<15	<15	18	20	22	27	32	34

**¾" wide slot - nonducted**

1-Slot	Airflow Rate (CFM/Linear Foot)	10	15	20	25	30	35	40	45	50	55
	Static Pressure	.002	.004	.007	.011	.015	.020	.027	.034	.042	.050
	Horizontal Throw	6-3-2	9-5-3	12-6-4	15-8-5	18-9-6	22-11-7	25-12-8	28-14-9	31-15-10	34-17-11
	Noise Criteria	<15	<15	<15	<15	19	21	25	30	34	39
2-Slot	Airflow Rate (CFM/Linear Foot)	15	25	35	45	55	65	75	85	95	105
	Static Pressure	.001	.003	.005	.008	.012	.017	.022	.029	.036	.044
	Horizontal Throw	5-2-2	8-4-3	11-5-4	14-7-5	17-8-6	20-10-7	23-12-8	26-13-9	29-15-10	32-16-11
	Noise Criteria	<15	<15	<15	<15	19	26	32	35	38	41
3-Slot	Airflow Rate (CFM/Linear Foot)	20	35	50	65	80	95	110	125	140	155
	Static Pressure	.001	.002	.004	.007	.010	.014	.019	.024	.030	.037
	Horizontal Throw	5-2-2	8-4-3	11-6-4	15-7-5	18-9-6	22-11-7	25-12-8	28-14-9	32-16-11	35-18-12
	Noise Criteria	<15	<15	<15	18	23	28	33	37	40	43
4-Slot	Airflow Rate (CFM/Linear Foot)	25	45	65	85	105	125	145	165	185	205
	Static Pressure	.001	.002	.004	.006	.009	.013	.017	.023	.028	.035
	Horizontal Throw	5-2-2	9-4-3	13-6-4	16-8-5	20-10-7	24-12-8	28-14-9	32-16-11	38-19-12	40-20-13
	Noise Criteria	<15	<15	17	22	25	29	33	37	40	43

**1" wide slot - nonducted**

1-Slot	Airflow Rate (CFM/Linear Foot)	13	20	27	33	40	47	53	60	67	73
	Static Pressure	.002	.005	.009	.014	.020	.027	.036	.045	.056	.067
	Horizontal Throw	5-2-2	7-4-2	10-5-3	12-6-4	15-7-5	17-9-6	20-10-7	22-11-7	25-12-8	27-14-9
	Noise Criteria	<15	<15	<15	20	25	31	37	41	43	45
2-Slot	Airflow Rate (CFM/Linear Foot)	20	33	47	60	79	87	100	113	127	140
	Static Pressure	.001	.003	.007	.011	.016	.023	.030	.038	.048	.059
	Horizontal Throw	4-2-1	6-3-2	9-4-3	11-6-4	14-7-5	16-8-5	19-9-6	21-10-7	23-12-8	26-13-9
	Noise Criteria	<15	<15	<15	23	32	35	40	44	48	51
3-Slot	Airflow Rate (CFM/Linear Foot)	27	47	67	87	107	127	147	167	187	207
	Static Pressure	.001	.003	.005	.009	.013	.019	.025	.032	.040	.049
	Horizontal Throw	4-2-1	6-3-2	9-5-3	12-6-4	15-7-5	17-9-6	20-10-7	23-11-8	25-13-8	28-14-9
	Noise Criteria	<15	<15	<15	23	32	35	40	44	48	51
4-Slot	Airflow Rate (CFM/Linear Foot)	33	60	87	113	140	167	193	220	247	273
	Static Pressure	.001	.002	.005	.008	.012	.017	.023	.030	.038	.046
	Horizontal Throw	4-2-1	7-3-2	10-5-3	13-7-4	16-8-5	19-10-8	22-11-7	25-13-8	29-14-10	32-16-11
	Noise Criteria	<15	16	22	27	31	37	42	46	50	54

## ALSDS Spiral Diffuser

**Notes:**

- Tests conducted in accordance with ANSI/ASHRAE 70-1991 at isothermal conditions.
- Engineering Units: Airflow Rate = CFM/linear foot  
Static Pressure = in. w.c.  
Throw = ft. at 50, 100, and 150 FPM terminal velocity
- Noise Criteria is based on 10 dB room absorption (Re: 10<sup>12</sup> watts) evaluated at 125 through 4000 Hz octave bands.
- Throw data are based on a horizontal discharge in one direction only. For two-way discharge pattern, the throw is determined from the published engineering data based on the number of slots and CFM/linear feet discharging in each direction.
- Throw data are for 4-foot active diffuser lengths. For other active lengths, throw may be determined by applying the following multiplication factors.

Diffuser Length (Feet)	Multiplication Factor
1	0.50
2	0.85
3	0.95
4	1.00

- Sound data are for 4-foot active diffuser lengths. For other lengths, add or deduct the following values to or from the reported NC level.

Diffuser Length (Feet)	NC Correction
1	-2
2	-2
3	-1
4	0

## ALSDV, ALSDVH Spiral Diffuser

## UALSDV, UALSDVH Universal Spiral Diffuser

Face Velocity		300	400	500	600	700	800	1000	1200
Total Pressure		.016	.029	.046	.066	.090	.117	.183	.263
10 x 3 Ak .14	CFM	42	56	70	84	98	112	140	168
	Horizontal Throw	7-3	8-4	9-5	10-6	11-7	12-8	13-9	14-10
	Noise Criteria	-	-	-	-	-	23	29	35
12 x 3 Ak .18	CFM	54	72	90	108	126	144	180	216
	Horizontal Throw	8-5	9-6	10-7	11-8	12-8	13-9	14-10	16-11
	Noise Criteria	-	-	-	-	20	24	31	36
10 x 4 1/4 x 3 Ak .21	CFM	63	84	105	126	147	168	210	252
	Horizontal Throw	8-5	10-7	11-8	12-8	13-9	14-10	16-11	17-12
	Noise Criteria	-	-	-	-	21	25	31	37
16 x 3 1/2 x 4 Ak .25	CFM	75	100	125	150	175	200	250	300
	Horizontal Throw	9-5	11-7	12-8	13-9	14-10	15-11	17-12	19-13
	Noise Criteria	-	-	-	-	21	25	32	37
24 x 3 1/2 x 6 Ak .39	CFM	117	156	195	234	273	312	390	468
	Horizontal Throw	12-7	13-9	15-10	17-11	18-12	19-13	21-15	24-16
	Noise Criteria	-	-	-	-	23	27	34	39
24 x 4 1/2 x 6 Ak .52	CFM	156	208	260	312	364	416	520	624
	Horizontal Throw	13-8	16-11	18-12	19-13	21-14	22-15	25-17	27-19
	Noise Criteria	-	-	-	20	24	28	35	40
14 x 8 18 x 6 Ak .63	CFM	189	252	315	378	441	504	630	756
	Horizontal Throw	15-8	17-12	19-13	21-14	23-16	24-17	27-19	30-20
	Noise Criteria	-	-	-	20	25	29	36	41
20 x 6 Ak .66	CFM	198	264	330	396	462	528	660	792
	Horizontal Throw	15-9	18-12	20-13	22-15	24-16	25-17	28-19	31-21
	Noise Criteria	-	-	-	21	25	29	36	41
16 x 8 Ak .71	CFM	213	284	355	426	497	568	710	852
	Horizontal Throw	16-9	18-13	20-14	23-15	24-17	26-18	30-20	35-22
	Noise Criteria	-	-	-	21	26	30	36	42
24 x 6 18 x 8 Ak .88	CFM	264	352	440	528	616	704	880	1056
	Horizontal Throw	18-10	20-14	23-16	25-17	27-18	29-20	32-22	36-24
	Noise Criteria	-	-	-	22	26	30	37	43
20 x 8 16 x 10 Ak .98	CFM	294	392	490	588	686	784	980	1176
	Horizontal Throw	19-10	21-15	24-17	26-18	28-19	30-21	34-23	38-25
	Noise Criteria	-	-	-	23	27	31	38	44
18 x 10 Ak 1.11	CFM	333	444	555	666	777	888	1110	1332
	Horizontal Throw	20-11	23-16	25-18	28-19	30-21	32-22	36-25	40-27
	Noise Criteria	-	-	-	23	27	31	38	44
36 x 6 18 x 12 Ak 1.35	CFM	405	540	675	810	945	1080	1350	1620
	Horizontal Throw	22-12	25-17	28-19	31-21	34-23	36-24	40-27	44-30
	Noise Criteria	-	-	-	24	28	32	39	44
24 x 10 20 x 12 Ak 1.49	CFM	447	596	745	894	1043	1192	1490	1788
	Horizontal Throw	23-13	26-18	30-20	32-22	35-24	37-26	42-29	46-31
	Noise Criteria	-	-	-	24	29	33	39	45
24 x 12 Ak 1.82	CFM	546	728	910	1092	1274	1456	1820	2184
	Horizontal Throw	25-14	30-20	33-22	36-25	39-27	42-28	47-32	51-35
	Noise Criteria	-	-	-	25	30	34	40	46
36 x 10 30 x 12 Ak 2.29	CFM	687	916	1145	1374	1603	1832	2290	2748
	Horizontal Throw	29-16	33-22	37-25	41-28	44-30	47-32	53-36	61-42
	Noise Criteria	-	-	-	20	26	30	34	41
36 x 12 Ak 2.75	CFM	825	1100	1375	1650	1925	2200	2750	3300
	Horizontal Throw	31-18	36-25	41-28	44-30	48-33	51-35	57-39	63-43
	Noise Criteria	-	-	-	21	27	31	35	42

Terminal Velocity of 75 and 150 FPM, respectively

**Notes:**

- Total Pressure in inches water column.
- Throw data are in feet at terminal velocities of 75 and 150 FPM, respectively.
- Noise Criteria based on a 10 dB room attenuation (Re: 10<sup>12</sup> watts).