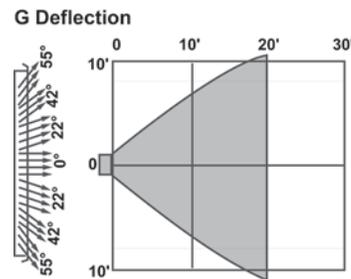
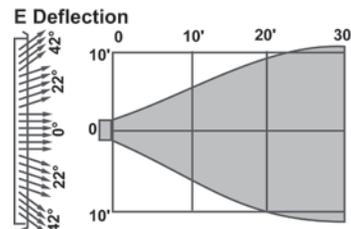
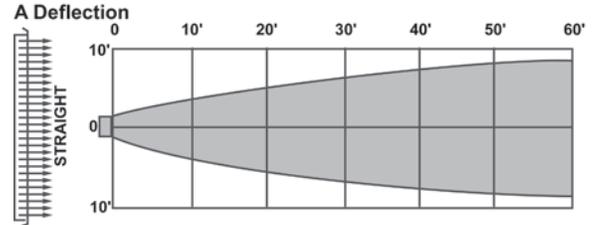


**Recommended NC Criteria**

	Communication Environment	Typical Occupancy
< NC 25	Extremely quiet environment; suppressed speech is quite audible; suitable for acute pickup of all sounds.	Broadcasting studios, concert halls, music rooms.
NC 30	Very quiet office; suitable for large conferences; telephone use satisfactory.	Residences, theaters, libraries, executive offices, directors rooms.
NC 35	Quiet office; satisfactory for conference at a 15-foot table; normal voice 10 to 30 feet; telephone use satisfactory.	Private offices, schools, hotel guestrooms, courtrooms, churches, hospital rooms.
NC 40	Satisfactory for conferences at a 6-to 8-foot table; normal voice 6 to 12 feet; telephone use satisfactory.	General office, labs, dining rooms.
NC 45	Satisfactory for conferences at a 4- to 5-foot table; normal voice 3 to 6 feet; raised voice 6 to 12 feet; telephone use occasionally difficult.	Retail stores, cafeterias, lobby areas, large drafting and engineering offices, reception areas.
> NC 50	Unsatisfactory for conference of more than two or three persons; normal voice 1 to 2 feet; raised voice 3 to 6 feet; telephone use slightly difficult.	Computer rooms, stenographic pools, print machine rooms, process areas.

**Air Pattern Obtained with Various Deflection Settings**



**Velocity Limitations for Various Applications**

The sound caused by an air outlet in operation is directly proportional to the velocity of the air passing through it. By selecting outlets of proper sizes, face velocities can be controlled within safe sound limits.

The following recommended face velocities are within the safe sound limits for most applications, when NC data are not available.

Application	Recommended Velometer Velocities
Broadcasting Studios	500 FPM
Residences	500 to 750 FPM
Apartments	500 to 750 FPM
Churches	500 to 750 FPM
Hotel Guestrooms	500 to 750 FPM
Legitimate Theaters	500 to 1000 FPM
Private Offices, acoustically treated	500 to 1000 FPM
Private Offices, not treated	1000 to 1250 FPM
Motion Picture Theaters	1000 to 1250 FPM
General Offices	1250 to 1500 FPM
Stores, upper floors	1500 FPM
Stores, main floors	1500 FPM
Industrial Buildings	1500 to 2000 FPM



**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 14 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 12 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 12 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 16 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	47
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	47

Terminal Velocity of 75 and 150 FPM, respectively

**Notes:**

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