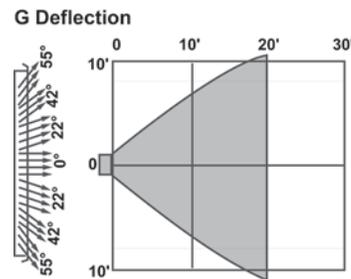
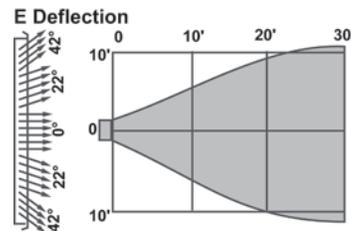
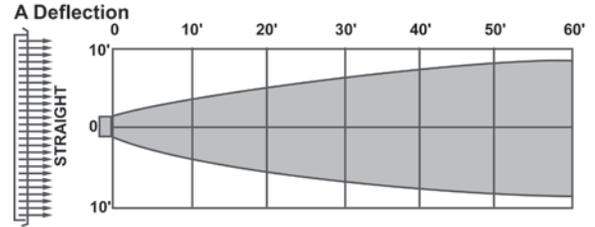


Recommended NC Criteria

	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



632 Stamped Ceiling/Wall Register

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
6 x 4	CFM	25	30	40	50	55	65	70	80
Ak .080	Throw	4.0	4.5	6.0	7.0	8.5	10.0	11.0	12.5
8 x 4	CFM	35	45	55	65	75	90	100	110
Ak .110	Throw	4.5	5.5	7.0	8.5	10.0	11.5	13.0	14.5
10 x 4 and 8 x 5	CFM	45	60	75	85	100	115	130	145
Ak .145	Throw	5.0	6.5	8.0	9.5	11.5	13.0	14.5	16.0
12 x 4 and 8 x 6	CFM	55	70	90	110	125	145	160	180
Ak .180	Throw	5.5	7.0	9.0	10.5	12.5	14.0	16.0	18.0
14 x 4	CFM	65	85	110	130	150	170	195	215
Ak .215	Throw	6.0	7.5	9.5	11.5	13.5	15.5	17.0	19.0
10 x 6 and 12 x 5	CFM	75	100	125	145	170	195	220	245
Ak .245	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
12 x 6 and 14 x 5	CFM	90	120	150	175	205	235	265	295
Ak .295	Throw	6.5	8.5	11.0	13.0	15.5	17.5	19.5	22.0
10 x 8	CFM	105	140	175	205	240	275	310	345
Ak .345	Throw	7.0	9.0	11.5	13.5	16.5	18.5	21.0	23.5
14 x 6	CFM	110	145	180	215	250	290	325	360
Ak .360	Throw	7.0	9.5	12.0	14.0	16.5	19.0	21.5	24.0

Terminal Velocity of 75 FPM

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
16 x 6 and 12 x 8	CFM	130	170	215	255	300	340	385	425
Ak .425	Throw	7.5	10.0	12.5	15.0	18.0	20.5	23.0	25.5
14 x 8	CFM	155	205	260	310	360	410	465	515
Ak .515	Throw	8.0	10.5	14.0	16.0	19.5	22.0	25.0	28.0
20 x 6	CFM	165	220	275	330	385	440	495	550
Ak .550	Throw	8.5	11.0	14.5	17.0	20.0	23.0	25.5	29.0
16 x 8	CFM	180	240	300	360	420	480	540	600
Ak .600	Throw	8.5	11.0	14.5	17.0	20.0	23.0	25.5	29.0
24 x 6 and 18 x 8	CFM	205	270	340	410	475	545	610	680
Ak .680	Throw	9.5	12.0	15.5	18.5	22.0	25.0	28.0	31.5
20 x 8	CFM	230	305	380	455	530	610	685	760
Ak .760	Throw	10.0	13.0	16.5	19.0	23.0	26.0	28.5	33.0
30 x 6	CFM	265	350	440	530	615	705	790	880
Ak .880	Throw	10.5	14.0	17.5	20.5	24.5	28.0	31.5	35.0
24 x 8	CFM	295	390	490	590	685	785	880	980
Ak .980	Throw	11.0	14.0	18.0	21.5	25.5	29.0	33.0	37.0
30 x 8	CFM	375	500	625	750	875	1000	1125	1250
Ak 1.250	Throw	12.0	16.0	20.0	24.0	28.5	32.0	37.0	41.0

653 Stamped Ceiling/Wall Register

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
8 x 4	CFM	33	44	55	66	77	88	100	110
Ak .110	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
10 x 4	CFM	40	54	67	80	95	110	120	135
Ak .135	Throw	6.5	8.5	10.5	12.5	15.0	17.5	19.0	21.0
12 x 4 and 8 x 6	CFM	55	72	90	108	125	145	162	180
Ak .180	Throw	7.5	10.0	12.5	15.0	17.5	20.5	23.0	25.0
10 x 6	CFM	70	92	115	140	160	185	205	230
Ak .230	Throw	9.0	11.5	14.5	17.5	20.0	23.0	25.5	29.0
12 x 6	CFM	85	115	145	175	205	230	260	290
Ak .290	Throw	10.0	13.0	17.0	20.0	23.5	26.5	30.0	33.0
14 x 6	CFM	102	135	170	205	240	270	305	340
Ak .340	Throw	11.0	14.5	18.0	22.0	25.5	29.0	32.5	36.0

Terminal Velocity of 75 FPM