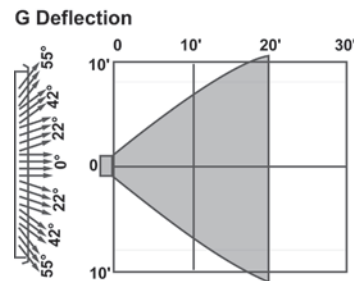
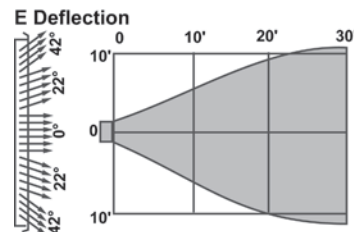
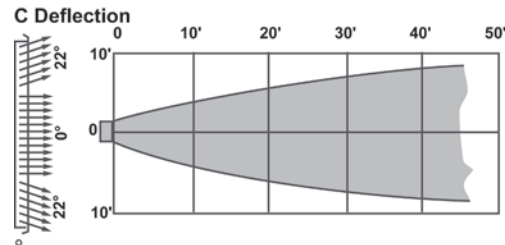
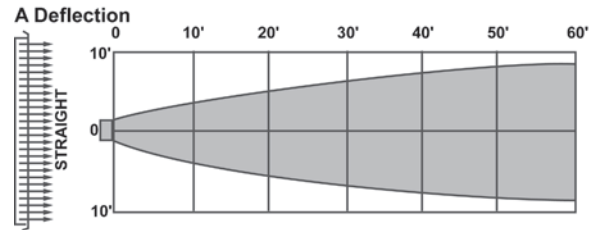


Recommended NC Criteria

	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



Series 500 / AL500, Series CB Stamped-Face Supply Register

501 / AL501 / CB1

Face Velocity		300	400	500	600	700	800	900	1000
6 x 4 Ak .09	CFM	30	35	45	55	65	75	85	95
	Ps	.007	.013	.020	.029	.040	.052	.066	.081
	Throw	6.0	8.0	9.0	11.0	13.0	15.0	17.0	19.0
8 x 4 Ak .11	CFM	30	45	55	65	75	85	95	105
	Ps	.007	.013	.021	.030	.041	.053	.067	.083
	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
8 x 6 Ak .12	CFM	35	50	60	75	85	100	110	125
	Ps	.007	.013	.021	.030	.040	.053	.067	.082
	Throw	7.0	9.0	11.0	13.0	15.0	17.0	19.0	22.0
10 x 4 Ak .12	CFM	35	50	60	70	85	95	110	120
	Ps	.008	.013	.021	.030	.041	.054	.068	.084
	Throw	6.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0
10 x 6 Ak .14	CFM	40	55	70	80	95	110	120	135
	Ps	.008	.014	.021	.031	.042	.054	.069	.085
	Throw	7.0	9.0	11.0	14.0	16.0	18.0	20.0	23.0
10 x 8 Ak .19	CFM	55	75	95	115	130	150	170	190
	Ps	.008	.014	.022	.031	.043	.056	.071	.087
	Throw	8.0	11.0	13.0	16.0	19.0	21.0	24.0	27.0
10 x 10 Ak .24	CFM	70	95	120	145	170	190	215	240
	Ps	.008	.014	.021	.030	.042	.054	.069	.085
	Throw	8.0	11.0	14.0	16.0	19.0	22.0	24.0	27.0
12 x 6 Ak .18	CFM	55	75	95	110	130	150	165	185
	Ps	.008	.015	.023	.033	.045	.059	.074	.091
	Throw	7.0	9.0	11.0	13.0	16.0	18.0	20.0	22.0
12 x 8 Ak .22	CFM	65	85	110	130	150	170	195	215
	Ps	.008	.014	.022	.032	.043	.056	.071	.088
	Throw	8.0	11.0	13.0	16.0	19.0	21.0	24.0	26.0
12 x 12 Ak .30	CFM	90	120	150	180	210	235	265	295
	Ps	.008	.014	.022	.032	.044	.057	.073	.090
	Throw	10.0	13.0	16.0	19.0	22.0	25.0	28.0	31.0
14 x 6 Ak .22	CFM	65	85	110	130	150	175	195	215
	Ps	.008	.014	.022	.031	.042	.055	.070	.087
	Throw	7.0	9.0	12.0	14.0	16.0	19.0	21.0	23.0
14 x 8 Ak .24	CFM	75	95	120	145	170	195	220	240
	Ps	.008	.014	.022	.032	.043	.057	.072	.089
	Throw	9.0	12.0	14.0	17.0	20.0	23.0	26.0	29.0
16 x 6 Ak .22	CFM	65	85	110	130	150	175	195	215
	Ps	.008	.014	.022	.032	.043	.056	.071	.088
	Throw	9.0	12.0	14.0	17.0	20.0	23.0	26.0	28.0
16 x 8 Ak .25	CFM	75	100	125	150	175	200	225	250
	Ps	.008	.015	.023	.033	.045	.059	.075	.092
	Throw	9.0	12.0	15.0	18.0	21.0	25.0	28.0	31.0

Terminal Velocity of 75 FPM

502H / AL502H / CB2

Face Velocity		300	400	500	600	700	800	900	1000
6 x 4 Ak .09	CFM	25	35	40	5	6	70	75	85
	Ps	.012	.021	.033	.048	.065	.085	.108	.134
	Throw	3.0	4.0	5.0	6.0	7.0	7.0	8.0	9.0
8 x 4 Ak .11	CFM	30	40	50	65	75	85	95	105
	Ps	.012	.021	.033	.047	.064	.083	.106	.133
	Throw	3.0	4.0	6.0	7.0	8.0	9.0	10.0	11.0
8 x 6 Ak .13	CFM	40	50	65	75	90	100	115	125
	Ps	.012	.020	.032	.046	.063	.082	.104	.128
	Throw	4.0	5.0	6.0	7.0	8.0	9.0	11.0	12.0
10 x 4 Ak .13	CFM	35	50	60	75	85	100	110	125
	Ps	.012	.021	.032	.046	.063	.082	.104	.128
	Throw	3.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
10 x 6 Ak .17	CFM	50	65	85	100	115	130	150	165
	Ps	.011	.020	.031	.045	.062	.080	.102	.126
	Throw	4.0	6.0	7.0	8.0	9.0	11.0	12.0	13.0
10 x 8 Ak .23	CFM	65	90	110	135	155	180	200	225
	Ps	.011	.020	.031	.044	.061	.079	.100	.124
	Throw	5.0	7.0	8.0	10.0	11.0	13.0	14.0	15.0
10 x 10 Ak .27	CFM	80	110	135	160	190	215	240	270
	Ps	.011	.020	.031	.044	.060	.078	.099	.123
	Throw	5.0	7.0	9.0	10.0	12.0	13.0	15.0	17.0
12 x 6 Ak .21	CFM	60	80	100	125	145	165	185	205
	Ps	.011	.020	.031	.045	.061	.079	.101	.124
	Throw	5.0	6.0	8.0	9.0	10.0	12.0	13.0	15.0
12 x 8 Ak .27	CFM	80	105	130	160	185	210	240	265
	Ps	.011	.020	.031	.044	.060	.079	.099	.123
	Throw	5.0	7.0	9.0	10.0	12.0	14.0	15.0	17.0
12 x 12 Ak .39	CFM	115	155	190	230	270	310	345	385
	Ps	.011	.019	.030	.044	.059	.078	.098	.121
	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
14 x 6 Ak .24	CFM	70	95	115	140	165	190	210	235
	Ps	.011	.020	.031	.044	.060	.079	.100	.123
	Throw	5.0	7.0	8.0	10.0	11.0	13.0	14.0	16.0
14 x 8 Ak .31	CFM	90	120	150	185	215	245	275	305
	Ps	.011	.020	.031	.044	.060	.078	.099	.122
	Throw	6.0	8.0	9.0	11.0	13.0	14.0	16.0	18.0
16 x 6 Ak .27	CFM	80	105	132	160	185	210	240	265
	Ps	.011	.020	.031	.044	.060	.079	.099	.123
	Throw	5.0	7.0	8.0	10.0	12.0	13.0	15.0	16.0
16 x 8 Ak .35	CFM	105	140	170	205	240	275	310	345
	Ps	.011	.019	.030	.044	.060	.078	.098	.122
	Throw	6.0	8.0	10.0	11.0	13.0	15.0	17.0	19.0

Terminal Velocity of 75 FPM



Series 500 / AL500, Series CB Stamped-Face Supply Register

502 / AL502 Standard

Face Velocity		300	400	500	600	700	800	900	1000
6 x 4 Ak .06	CFM	20	25	30	40	45	50	60	65
	Ps	.017	.030	.047	.068	.092	.121	.153	.189
	Throw	3.0	4.0	4.0	5.0	6.0	7.0	8.0	9.0
8 x 4 Ak .09	CFM	25	35	45	50	60	70	80	85
	Ps	.013	.024	.037	.054	.073	.095	.121	.149
	Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
8 x 6 Ak .13	CFM	40	50	65	75	90	100	115	125
	Ps	.012	.021	.033	.048	.065	.085	.108	.133
	Throw	4.0	5.0	6.0	7.0	9.0	10.0	11.0	12.0
10 x 4 Ak .11	CFM	30	45	55	65	75	85	95	110
	Ps	.012	.021	.033	.047	.064	.084	.106	.131
	Throw	3.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
10 x 6 Ak .17	CFM	50	65	85	100	115	130	150	165
	Ps	.009	.016	.025	.036	.050	.065	.082	.101
	Throw	4.0	6.0	7.0	8.0	10.0	11.0	13.0	14.0
10 x 8 Ak .22	CFM	65	85	110	130	150	175	195	215
	Ps	.009	.017	.026	.037	.051	.066	.084	.103
	Throw	5.0	7.0	8.0	10.0	11.0	13.0	14.0	16.0
10 x 10 Ak .27	CFM	80	110	135	160	190	215	240	270
	Ps	.009	.016	.025	.036	.049	.064	.081	.100
	Throw	6.0	7.0	9.0	11.0	13.0	14.0	16.0	18.0
12 x 6 Ak .19	CFM	60	80	95	115	135	155	175	195
	Ps	.010	.017	.026	.038	.052	.068	.086	.106
	Throw	5.0	6.0	8.0	9.0	11.0	12.0	14.0	15.0
12 x 8 Ak .26	CFM	80	105	130	155	180	205	235	260
	Ps	.009	.016	.025	.036	.049	.064	.081	.100
	Throw	5.0	7.0	9.0	11.0	12.0	14.0	16.0	17.0
12 x 12 Ak .39	CFM	115	155	195	235	270	310	350	390
	Ps	.008	.015	.023	.034	.046	.060	.076	.094
	Throw	4.0	5.0	7.0	8.0	9.0	11.0	12.0	13.0
14 x 6 Ak .23	CFM	70	90	115	135	160	180	205	225
	Ps	.009	.016	.026	.037	.050	.065	.083	.102
	Throw	5.0	7.0	8.0	10.0	11.0	13.0	15.0	16.0
14 x 8 Ak .30	CFM	90	120	150	180	210	240	270	300
	Ps	.009	.016	.024	.035	.048	.062	.079	.097
	Throw	6.0	8.0	10.0	11.0	13.0	15.0	17.0	19.0
16 x 6 Ak .26	CFM	80	105	130	155	180	205	235	260
	Ps	.009	.016	.025	.036	.049	.064	.081	.100
	Throw	5.0	7.0	9.0	11.0	12.0	14.0	16.0	17.0
16 x 8 Ak .34	CFM	105	140	175	205	240	275	310	345
	Ps	.009	.015	.024	.034	.047	.061	.077	.095
	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0

Terminal Velocity of 75 FPM

503 / AL503 / CB3

Face Velocity		300	400	500	600	700	800	900	1000
6 x 4 Ak .08	CFM	25	35	20	50	60	65	75	85
	Ps	.016	.029	.046	.066	.090	.117	.148	.183
	Throw	4.0	6.0	7.0	8.0	10.0	11.0	13.0	14.0
8 x 4 Ak .10	CFM	30	40	50	65	75	85	95	105
	Ps	.015	.027	.041	.060	.081	.106	.134	.166
	Throw	5.0	6.0	8.0	9.0	11.0	12.0	14.0	15.0
8 x 6 Ak .14	CFM	40	55	70	85	100	115	125	140
	Ps	.015	.026	.041	.059	.080	.104	.132	.163
	Throw	6.0	7.0	9.0	11.0	13.0	15.0	16.0	18.0
10 x 4 Ak .12	CFM	35	50	60	75	85	100	110	125
	Ps	.014	.025	.039	.056	.076	.100	.126	.156
	Throw	5.0	7.0	9.0	10.0	12.0	14.0	15.0	17.0
10 x 6 Ak .17	CFM	50	70	85	105	120	140	155	175
	Ps	.015	.027	.043	.062	.084	.110	.139	.171
	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
10 x 8 Ak .22	CFM	65	90	110	135	155	180	200	225
	Ps	.012	.022	.034	.049	.066	.086	.109	.135
	Throw	7.0	9.0	12.0	14.0	16.0	18.0	21.0	23.0
10 x 10 Ak .31	CFM	95	125	155	185	220	250	280	310
	Ps	.015	.027	.043	.062	.084	.110	.139	.172
	Throw	8.0	11.0	14.0	16.0	19.0	22.0	24.0	27.0
12 x 6 Ak .21	CFM	60	85	105	125	145	165	185	205
	Ps	.012	.022	.034	.049	.066	.086	.109	.135
	Throw	7.0	9.0	11.0	13.0	15.0	18.0	20.0	22.0
12 x 8 Ak .26	CFM	80	105	130	160	185	210	240	265
	Ps	.008	.014	.022	.032	.044	.057	.072	.089
	Throw	8.0	10.0	13.0	15.0	17.0	20.0	22.0	25.0
12 x 12 Ak .40	CFM	115	155	190	230	270	305	345	385
	Ps	.008	.014	.023	.033	.044	.058	.073	.090
	Throw	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
14 x 6 Ak .20	CFM	60	80	100	120	145	165	185	205
	Ps	.009	.017	.026	.037	.051	.066	.084	.104
	Throw	7.0	9.0	11.0	13.0	15.0	17.0	20.0	22.0
14 x 8 Ak .30	CFM	90	120	150	185	215	245	275	305
	Ps	.008	.014	.022	.032	.044	.057	.073	.090
	Throw	8.0	11.0	13.0	16.0	19.0	21.0	24.0	27.0
16 x 6 Ak .26	CFM	80	105	130	160	185	210	240	265
	Ps	.008	.014	.022	.032	.044	.057	.072	.089
	Throw	8.0	10.0	12.0	15.0	17.0	20.0	22.0	25.0
16 x 8 Ak .29	CFM	100	130	165	195	230	260	295	325
	Ps	.010	.017	.027	.039	.052	.069	.087	.107
	Throw	8.0	11.0	14.0	17.0	19.0	22.0	25.0	27.0

Terminal Velocity of 75 FPM

504 / AL504 / CB4

Face Velocity		300	400	500	600	700	800	900	1000
6 x 6 Ak .16	CFM	50	65	80	95	110	125	145	160
	Ps	.040	.072	.112	.161	.219	.287	.363	.448
	Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
8 x 8 Ak .22	CFM	65	85	110	130	155	175	195	220
	Ps	.024	.043	.067	.096	.130	.170	.216	.266
	Throw	4.0	5.0	6.0	7.0	8.0	10.0	11.0	12.0
10 x 10 Ak .28	CFM	85	115	140	170	200	225	255	285
	Ps	.016	.029	.045	.064	.087	.114	.144	.178
	Throw	4.0	6.0	7.0	8.0	10.0	11.0	12.0	14.0
12 x 12 Ak .40	CFM	120	160	200	235	275	315	355	395
	Ps	.012	.022	.032	.047	.064	.084	.107	.133
	Throw	5.0	7.0	8.0	10.0	11.0	13.0	14.0	16.0
14 x 14 Ak .48	CFM	145	190	240	285	335	380	430	475
	Ps	.009	.016	.025	.037	.049	.065	.081	.102
	Throw	6.0	7.0	9.0	11.0	12.0	14.0	16.0	18.0

Terminal Velocity of 75 FPM