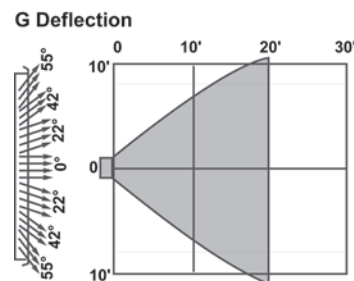
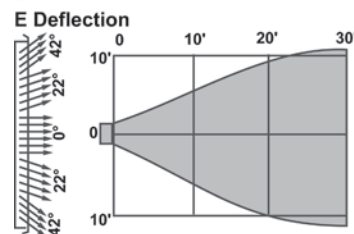
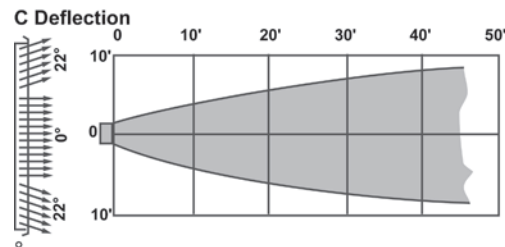
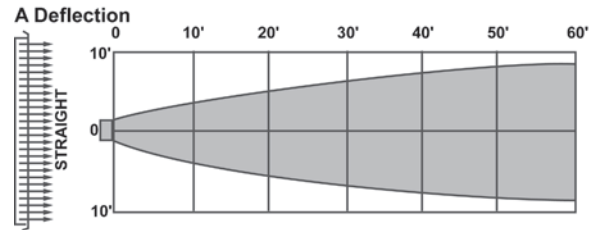


Recommended NC Criteria

	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



1444, AL1444 Modular Core

Neck Size	6 x 6	8 x 8	10 x 10	12 x 12	14x14	16x16	18x18	20x20		
No. of Blades per Module	6 x 6	8 x 8	10 x 10	12 x 12	14x14	16x16	18x18	20x20		
Effective Area (Ak) in Sq. Ft.	.100	.178	.278	.400	.544	.711	.900	1.111	Jet Velocity	Neck Velocity
CFM	75	133	208	300	408	533	675	833		
4-way throw in feet	8	10	13	15	18	21	23	26	750	300
Noise Criteria	<20	<20	<20	<20	<20	<20	<20	<20		
Static Press inches wc	.005	.008	.010	.014	.018	.023	.029	.035		
CFM	100	178	278	400	544	711	900	1111	1000	400
4-way throw in feet	9	12	15	18	21	24	27	30		
Noise Criteria	<20	<20	<20	<20	<20	<25	<25	<25		
Static Press inches wc	.009	.013	.019	.025	.033	.042	.052	.063		
CFM	125	222	347	500	681	889	1125	1389	1250	500
4-way throw in feet	10	13	17	20	23	27	30	33		
Noise Criteria	<20	<20	<20	<20	<25	<30	<30	<30		
Static Press inches wc	.014	.020	.029	.039	.051	.065	.081	.098		
CFM	150	267	417	600	817	1067	1350	1667	1500	600
4-way throw in feet	11	15	18	22	25	29	33	36		
Noise Criteria	<20	<20	<25	<25	<30	<35	<35	<35		
Static Press inches wc	.021	.031	.043	.057	.075	.095	.117	.143		
CFM	175	311	486	700	953	1244	1575	1944	1750	700
4-way throw in feet	12	16	20	24	28	31	35	39		
Noise Criteria	<20	<25	<30	<30	<35	<35	<40	<40		
Static Press inches wc	.028	.040	.057	.077	.101	.128	.159	.193		
CFM	200	356	556	800	1089	1422	1800	2222	2000	800
4-way throw in feet	13	17	21	25	29	34	38	42		
Noise Criteria	<20	25	<30	<35	<40	<40	<45	<45		
Static Press inches wc	.037	.053	.075	.101	.132	.167	.208	.253		

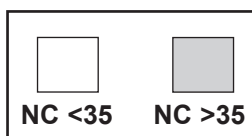
Throw is at 50 fpm terminal velocity
 NC is based on 10dB room attenuation (10⁻¹² watts)

Step-Down Diffusers 1500 / 1520 / AL1520
 1530 / 1540 / 1540D / 1560 / 1570

1600 Adjustable Round Diffuser

Neck Velocity	400	500	600	700	800	900	1000	1200	1400
6" Ak .160	CFM 80 Ps <.010 Throw 2.00	100 <.010 2.00	120 <.010 3.0	140 <.010 3.0	160 0.014 4.0	180 0.02 4.0	200 0.02 5.0	235 0.03 6.0	275 0.03 8.0
8" Ak .280	CFM 140 Ps <.010 Throw 3.5	175 <.010 3.0	210 <.010 3.0	245 <.010 4.0	280 0.01 4.0	315 0.02 5.0	350 0.02 5.0	420 0.03 7.0	490 0.04 8.0
10" Ak .440	CFM 218 Ps <.010 Throw 3.0	273 <.010 3.0	327 <.010 4.0	382 0.01 5.0	436 0.01 5.0	491 0.02 6.0	545 0.02 7.0	654 0.03 8.0	763 0.04 10.0
12" Ak .660	CFM 315 Ps <.010 Throw 3.0	390 <.010 4.0	470 <.010 5.0	550 0.01 6.0	630 0.01 7.0	705 0.02 7.0	785 0.02 8.0	940 0.03 10.0	1100 0.04 11.0
14" Ak .910	CFM 425 Ps <.010 Throw 4.0	530 <.010 5.0	635 <.010 6.0	745 0.01 7.0	850 0.01 8.0	955 0.02 9.0	1060 0.02 9.0	1270 0.03 11.0	1490 0.04 13.0
16" Ak 1.200	CFM 560 Ps <.010 Throw 4.0	700 <.010 5.0	840 <.010 7.0	980 0.01 8.0	1120 0.01 9.0	1260 0.02 10.0	1400 0.02 11.0	1680 0.03 13.0	1960 0.04 15.0
18" Ak 1.500	CFM 710 Ps <.010 Throw 5.0	885 <.010 6.0	1060 <.010 7.0	1240 0.01 9.0	1420 0.01 10.0	1590 0.02 11.0	1770 0.02 12.0	2120 0.03 15.0	2480 0.04 17.0

Note: Core in "out" position. Terminal velocity of 100 FPM
 When diffusers are used on an exposed duct, multiply throw by 0.7.



Neck Velocity	400	500	600	700	800	900	1000	1200	1400	1600
6" Ak .200	CFM 80 Ps .008 NC <20 Throw 2.0	100 .012 <20 3.0	120 .017 <20 3.0	135 .021 <20 3.5	155 .028 <20 4.0	175 .035 <20 4.5	195 .043 <20 5.0	235 .063 <20 6.0	275 .086 <20 7.0	315 .112 <20 8.0
8" Ak .350	CFM 140 Ps .010 NC <20 Throw 3.5	175 .015 <20 4.5	210 .022 <20 5.5	245 .029 <20 6.5	280 .038 <20 7.0	315 .049 <20 8.0	350 .060 <20 9.0	420 .086 <20 10.5	490 .117 <20 12.5	560 .150 <20 14.5
10" Ak 1.200	CFM 220 Ps .014 NC <20 Throw 5.5	270 .021 <20 7.0	325 .030 <20 8.5	380 .041 <20 10.0	435 .054 <20 11.0	490 .068 <20 12.5	545 .084 <20 14.0	655 .122 <20 17.0	765 .167 <20 19.5	870 .212 <20 22.0
12" Ak 1.650	CFM 315 Ps .015 NC <20 Throw 6.0	390 .023 <20 7.5	470 .033 <20 9.0	550 .045 <20 10.5	630 .060 <20 12.0	705 .072 <20 13.5	785 .094 <20 15.0	940 .132 <20 18.0	1100 .180 <20 21.0	1255 .230 <20 24.0
14" Ak 2.060	CFM 430 Ps .023 NC <20 Throw 6.5	535 .036 <20 8.0	640 .051 <20 9.5	750 .071 <20 11.5	855 .093 <20 13.0	960 .115 <20 14.5	1070 .140 <20 16.0	1285 .205 <20 19.0	1500 .277 <20 22.5	1710 .350 <20 25.0

Terminal Velocity of 75 FPM
 An = Neck Area in square feet
 Ak = Effective Area in square feet
 Ps = Static Pressure Loss in inches of water
 NC = Noise Criteria, based on a 10dB room attenuation (RE: 10⁻¹² watts) ASHRAE 36-72
 Note: The use of a balancing hood is recommended to balance the system.

1580/1590/AL1580 T-Bar Plate Diffuser

Neck Velocity	300	400	500	600	700	800	900	1000	1200	1400	1600
6" An .200	CFM 60 Ps .004 NC <20 Throw 1.0	80 .006 <20 1.0	100 .010 <20 1.5	120 .014 <20 1.5	135 .018 <20 2.0	155 .023 <20 2.0	175 .030 <20 2.5	195 .037 <20 2.5	235 .054 <20 3.0	275 .073 <20 3.5	315 .096 <20 4.0
8" An .350	CFM 105 Ps .010 NC <20 Throw 1.5	140 .010 <20 2.0	175 .015 <20 2.5	210 .022 <20 3.0	245 .029 <20 3.5	280 .038 <20 4.0	315 .049 <20 4.5	350 .060 <20 5.0	420 .086 <20 6.5	490 .117 <20 8.0	560 .150 <20 10.0
10" An .540	CFM 165 Ps .014 NC <20 Throw 2.0	220 .014 <20 3.0	275 .021 <20 3.5	325 .030 <20 4.0	380 .041 <20 5.0	435 .054 <20 5.5	490 .068 <20 6.5	545 .084 <20 7.0	655 .122 <20 8.5	765 .167 <20 10.0	875 .212 <20 12.0
12" An .780	CFM 235 Ps .015 NC <20 Throw 3.0	315 .015 <20 4.0	395 .023 <20 5.0	470 .033 <20 6.0	550 .045 <20 7.0	630 .060 <20 8.0	705 .072 <20 8.5	785 .094 <20 9.5	945 .132 <20 11.5	1100 .180 <20 13.5	1260 .230 <20 15.0
14" An 1.070	CFM 320 Ps .023 NC <20 Throw 5.0	430 .023 <20 7.0	535 .036 <20 8.5	640 .051 <20 10.5	750 .071 <20 12.0	855 .093 <20 13.5	960 .115 <20 15.0	1070 .140 <20 17.0	1280 .205 <20 20.5	1500 .277 <20 24.0	1710 .350 <20 28.5

Terminal Velocity of 75 FPM
 An = Neck Area in Sq. Ft.
 NC = Noise Criteria, based on a 10dB room attenuation (RE: 10⁻¹² watts) ASHRAE 36-72