



Grilles, Registers and Diffusers

PERFORMANCE DATA

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PERFORMANCE DATA—LIGHT COMMERCIAL

825 Return Floor Grille

Average Face Velocity*		400	500	600	700	800	900	1000
4 x 12	CFM	120	150	175	205	235	265	295
Ak .295	Pt	.011	.017	.024	.033	.043	.054	.065
4 x 14	CFM	135	170	200	235	270	300	335
Ak .335	Pt	.011	.016	.023	.032	.042	.052	.064
6 x 10	CFM	150	185	220	260	295	335	370
Ak .37	Pt	.010	.016	.022	.031	.041	.051	.063
6 x 12	CFM	180	225	265	310	355	400	445
Ak .445	Pt	.010	.015	.021	.030	.039	.049	.060
8 x 10	CFM	195	245	295	345	390	440	490
Ak .49	Pt	.010	.015	.021	.029	.038	.047	.059
6 x 14	CFM	205	255	305	355	410	460	510
Ak .51	Pt	.010	.015	.020	.029	.038	.047	.058
8 x 12	CFM	235	295	350	410	470	525	585
Ak .565	Pt	.009	.014	.020	.028	.036	.046	.057
8 x 14	CFM	270	340	410	475	545	610	680
Ak .68	Pt	.009	.014	.019	.027	.035	.044	.055
10 x 12	CFM	290	360	430	505	575	650	720
Ak .72	Pt	.009	.014	.019	.027	.035	.043	.054
12 x 12 and 6 x 24	CFM	340	425	510	595	680	765	850
Ak .85	Pt	.009	.013	.019	.026	.033	.042	.053
6 x 30	CFM	410	515	620	720	825	925	1030
Ak 1.03	Pt	.008	.012	.018	.024	.032	.040	.049
8 x 24	CFM	445	555	665	775	890	1000	1110
Ak 1.11	Pt	.008	.012	.018	.024	.031	.039	.048
14 x 14	CFM	460	575	690	805	920	1035	1150
Ak 1.15	Pt	.008	.012	.018	.024	.031	.039	.048
8 x 30	CFM	540	675	810	945	1080	1215	1350
Ak 1.35	Pt	.008	.012	.017	.023	.030	.037	.046
14 x 20	CFM	630	790	950	1105	1265	1420	1580
Ak 1.58	Pt	.007	.011	.016	.022	.029	.036	.045
12 x 24	CFM	655	820	985	1150	1310	1475	1690
Ak 1.64	Pt	.007	.011	.016	.022	.029	.036	.044
10 x 30	CFM	670	840	1010	1175	1345	1510	1680
Ak 1.68	Pt	.007	.011	.016	.022	.029	.036	.044
18 x 18	CFM	720	900	1080	1260	1440	1620	1800
Ak 1.80	Pt	.007	.011	.015	.021	.028	.035	.043
14 x 24	CFM	750	935	1120	1310	1495	1685	1870
Ak 1.87	Pt	.007	.011	.015	.021	.028	.035	.043
12 x 30	CFM	800	1000	1200	1400	1600	1800	2000
Ak 2.00	Pt	.007	.011	.015	.021	.027	.034	.042
14 x 30	CFM	940	1175	1410	1645	1880	2115	2350
Ak 2.35	Pt	.007	.010	.015	.020	.026	.033	.040
24 x 24	CFM	1240	1550	1860	2170	2480	2790	3100
Ak 3.10	Pt	.006	.010	.014	.019	.024	.031	.038
30 x 30	CFM	1880	2350	2820	3290	3760	4230	4700
Ak 4.70	Pt	.006	.009	.012	.017	.022	.028	.034

*Velocity measured 1" from face

850 Deluxe Floor Register

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
2 1/4 x 10	CFM	25	35	45	55	60	70	80	90
Ak .09	Spread	3.0	4.0	5.0	6.5	7.5	9.0	10.0	11.0
	Throw	2.0	2.5	3.0	4.0	4.5	5.0	6.0	6.5
2 1/4 x 12	CFM	35	45	55	65	75	90	100	110
Ak .11	Spread	3.0	4.5	6.0	7.0	8.5	9.5	11.0	12.0
	Throw	2.0	3.0	3.5	4.0	5.0	6.0	6.5	7.0
2 1/4 x 14	CFM	40	50	65	80	90	105	115	130
Ak .13	Spread	3.5	5.0	7.0	8.0	9.5	10.5	12.0	13.0
	Throw	2.5	3.0	4.0	4.5	5.5	6.5	7.0	8.0
4 x 10	CFM	50	70	85	100	120	135	155	170
Ak .17	Spread	4.0	6.0	7.5	9.0	11.0	12.0	13.5	15.5
	Throw	3.0	3.5	4.5	5.5	6.5	7.0	8.0	9.0
4 x 12	CFM	65	85	105	125	145	170	190	210
Ak .21	Spread	5.0	7.0	8.5	10.0	12.0	13.5	15.5	17.0
	Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
4 x 14	CFM	75	100	125	150	175	200	225	250
Ak .25	Spread	5.5	7.5	9.5	11.0	13.0	15.0	17.0	18.5
	Throw	3.5	4.5	5.5	6.5	7.5	9.0	10.0	11.0
6 x 10	CFM	80	110	135	160	190	215	245	270
Ak .27	Spread	6.0	8.0	10.0	11.5	13.5	15.5	17.5	19.5
	Throw	3.5	4.5	6.0	7.0	8.0	9.0	10.5	11.5
6 x 12	CFM	100	130	165	200	230	265	295	330
Ak .33	Spread	6.5	8.5	11.0	13.0	15.0	17.0	19.5	21.5
	Throw	4.0	5.0	6.5	7.5	9.0	10.0	11.5	12.5
6 x 14	CFM	115	155	195	235	275	310	350	390
Ak .39	Spread	7.5	9.5	12.0	14.0	17.0	19.0	21.5	23.5
	Throw	4.5	5.5	7.0	8.5	10.0	11.0	12.5	14.0

Terminal Velocity of 50 FPM

830 Floor Register

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
4 x 10	CFM	60	80	100	120	140	160	180	200
Ak .20	Throw	8	11	13	16	19	22	24	26
4 x 12 and 6 x 8	CFM	75	100	125	150	175	200	225	250
Ak .25	Throw	9	12	15	18	21	25	28	31
4 x 14	CFM	85	110	140	170	195	225	250	280
Ak .28	Throw	6	10	15	19	22	25	28	32
6 x 10 and 8 x 8	CFM	95	130	160	190	225	255	290	320
Ak .32	Throw	10	14	17	21	24	27	31	34
6 x 12	CFM	115	150	190	230	265	305	340	380
Ak .38	Throw	12	15	19	23	26	30	34	38
8 x 10	CFM	125	170	210	250	295	335	380	420
Ak .42	Throw	12	15	18	24	28	32	37	41
6 x 14	CFM	130	175	220	265	310	350	395	440
Ak .44	Throw	13	16	20	24	28	32	36	41
6 x 16	CFM	145	195	245	295	345	390	440	490
Ak .49	Throw	11	16	21	25	30	35	39	44
8 x 12 and 10 x 10	CFM	160	210	265	320	370	425	475	530
Ak .53	Throw	12	17	21	26	32	37	43	48
9 x 12 and 8 x 14	CFM	180	240	300	360	420	480	540	600
Ak .60	Throw	14	20	24	29	34	39	44	50
10 x 12	CFM	195	260	325	390	455	520	585	650
Ak .65	Throw	14	18	24	30	35	41	46	51
8 x 16 and 9 x 14	CFM	205	275	345	415	485	550	620	690
Ak .69	Throw	15	21	27	32	37	42	48	53
10 x 14 and 12 x 12	CFM	235	310	390	470	545	625	700	780
Ak .78	Throw	14	21	28	34	40	46	51	56
10 x 16	CFM	265	350	440	530	615	705	790	880
Ak .88	Throw	17	23	30	36	41	48	53	60
12 x 14	CFM	280	370	465	560	650	745	835	930
Ak .93	Throw	18	24	30	37	43	50	56	62
12 x 16 and 14 x 14	CFM	320	430	535	640	750	855	965	1070
Ak 1.07	Throw	20	26	32	39	46	53	59	64
12 x 18 and 14 x 16	CFM	365	490	610	730	855	975	1100	1220
Ak 1.22	Throw	21	28	34	42	49	56	62	68
14 x 18 and 16 x 16	CFM	425	570	710	850	995	1135	1280	1420
Ak 1.42	Throw	22	30	37	45	52	58	63	68
12 x 24 and 14 x 20	CFM	475	635	795	955	1115	1270	1430	1590
Ak 1.59	Throw	23	31	39	46	52	59	65	71

Terminal Velocity of 50 FPM

800 Stamped Floor Register 875 Toe-Space Grille

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
2 x 10 Ak .085	CFM		35	45	50	60	70	75	85
	Spread		3.0	5.0	5.0	6.0	7.0	8.0	9.0
	Throw		4.0	4.5	6.0	7.0	8.0	9.0	10.0
2 x 12 Ak .100	CFM	30	40	50	60	70	80	90	100
	Spread	3.0	4.0	4.5	5.5	6.5	7.0	8.0	9.0
	Throw	3.5	4.5	5.5	7.0	8.0	9.0	10.0	11.0
2 x 14 Ak .115	CFM	35	45	60	70	80	90	105	115
	Spread	3.5	4.0	5.0	7.0	7.0	8.0	9.0	10.0
	Throw	3.5	4.5	6.0	8.0	8.0	9.5	10.5	12.0
4 x 10 Ak .170	CFM	50	70	85	100	120	135	155	170
	Spread	4.5	5.0	6.5	7.5	9.0	10.0	11.5	13.0
	Throw	4.0	6.0	8.0	10.0	11.0	12.5	14.0	15.5
4 x 12 Ak .195	CFM	60	80	100	120	140	160	175	195
	Spread	5.0	6.5	8.0	9.5	11.5	13.0	14.5	16.0
	Throw	4.0	5.5	7.0	8.0	9.5	11.0	12.0	13.0
4 x 14 Ak .230	CFM	70	90	115	140	160	185	205	230
	Spread	5.5	7.0	8.5	10.0	12.0	13.5	15.5	17.0
	Throw	4.5	5.5	7.0	8.5	10.0	11.5	12.5	14.0
6 x 10 Ak .240	CFM	70	95	120	145	170	190	215	240
	Spread	5.5	7.0	8.0	10.0	12.0	14.0	15.0	17.0
	Throw	4.0	5.5	7.0	8.5	10.0	11.0	12.5	14.0
6 x 12 Ak .285	CFM	85	115	140	170	200	230	255	285
	Spread	6.0	7.5	9.0	11.0	13.0	15.0	17.0	19.0
	Throw	4.5	6.0	7.5	9.0	10.0	12.0	14.0	16.0
6 x 14 Ak .330	CFM	100	130	165	200	230	265	300	330
	Spread	6.5	8.0	9.0	12.0	14.0	16.5	18.0	20.0
	Throw	4.5	6.5	8.0	9.5	11.0	13.0	15.0	17.0

667 Baseboard Register

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
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
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
14 x 6	CFM	110	145	180	215	252	290	325	360
Ak .360	Throw	7.0	9.5	12.0	14.0	16.5	19.0	21.5	24.0
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

Terminal Velocity of 75 FPM

470 Baseboard Diffuser (18")

Face Velocity		300	400	500	600	700	800	900	1000	1200	1400
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.090	.122
18"	CFM	45	60	70	85	100	115	130	145	175	200
Ak .144	Throw	11	14	17	20	24	27	31	35	42	48
	Spread	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

Tests conducted with a 2 1/4" x 12" register boot.

Terminal Velocity of 50 FPM

471 Baseboard Return

Face Velocity		300	400	500	600	700	800
Pressure Loss		.013	.022	.035	.048	.067	.088
AK .260	CFM	80	105	130	155	180	210
	Spread	4.5	6.5	7.5	8.5	9.5	11.0
	Throw	5.0	7.0	8.0	9.0	10.0	11.0

Terminal Velocity of 50 FPM

649 Baseboard 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

AL833 Floor Register

Face Velocity		300		400		500		600		700		800		900		1000	
Pressure Loss		.006		.010		.016		.022		.031		.040		.050		.062	
		H	C	H	C	H	C	H	C	H	C	H	C	H	C	H	C
23x10	cfm							35	35	40	40	45	50	50	55	55	60
Ak .055 Heating	Spread							3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5
Ak .060 Cooling	Throw							4	6	7.5	9.5	11.5	13.5	15.5	17.5	19.5	21.5
23x12	cfm					35	35	40	45	45	50	55	60	60	65	65	75
Ak .067 Heating	Spread					3.5	4	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5
Ak .074 Cooling	Throw					4	6	5	6.5	7.5	9.5	11.5	13.5	15.5	17.5	19.5	21.5
23x14	cfm			30	35	40	45	45	50	55	60	65	70	70	80	80	85
Ak .079 Heating	Spread			3	4	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5
Ak .087 Cooling	Throw			3.5	4.5	5	6	5.5	7	8.5	10.5	12.5	14.5	16.5	18.5	20.5	22.5
4x10	cfm	35	40	45	50	55	65	70	75	80	90	90	100	105	115	115	125
Ak .115 Heating	Spread	3	3.5	4	4.5	5	5.5	6	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5
Ak .125 Cooling	Throw	3	4.5	6	7.5	8.5	10.5	12.5	14.5	16.5	18.5	20.5	22.5	24.5	26.5	28.5	30.5
4x12	cfm	40	50	55	65	70	80	85	95	100	110	115	130	125	145	140	160
Ak .140 Heating	Spread	3	4	4	5	5	5.5	6	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5
Ak .160 Cooling	Throw	3.5	5	4.5	6.5	6	8.5	7.5	10	11	11.5	13	14	15	16	17	18
4x14	cfm	50	55	65	70	80	90	100	110	115	125	130	145	150	160	165	180
Ak .165 Heating	Spread	3.5	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11	12	13	14	15
Ak .180 Cooling	Throw	4	5.5	5.5	7	6.5	9.5	8	11	10	12.5	11	14	12	15.5	13.5	17.5
6x10	cfm	60	60	75	80	95	105	115	125	135	145	150	165	170	185	190	205
Ak .190 Heating	Spread	3.5	4.5	5.5	6	6.5	7.5	8.5	9.5	10	11	12	13	14	15	16	17
Ak .205 Cooling	Throw	4.5	6	5.5	7.5	7	9.5	8.5	11	10	13	11	15	12.5	16.5	14	18.5
6x12	cfm	70	75	90	100	115	125	135	150	160	175	180	200	205	225	225	250
Ak .225 Heating	Spread	4	5	5	6	6	7	7	8	8	9	10	11	12	13	14	15
Ak .250 Cooling	Throw	5	6.5	6	8.5	8	10.5	9	12	11	15	12.5	16.5	14	18.5	16	21
6x14	cfm	80	90	105	120	135	150	160	180	185	210	210	240	240	270	265	300
Ak .265 Heating	Spread	4.5	5	5	6	6	7	7	8	8	9	10	11	12	13	14	15
Ak .300 Cooling	Throw	5	7	7	9.5	8.5	11.5	10	13.5	12	16	13.5	18	16	20.5	17.5	23.5

The spread shown for the heating mode is for a valve setting of 22° right deflection and 22° left deflection. *The maximum value given for spread for heating is that which occurs at the ceiling height (8 ft.). The cooling spread is a straight vertical column of air and is not shown. Throw and spread values are based on a terminal velocity of 50 fpm.

Recommended Noise Criteria and Face Velocity Ranges are on page 19.



652 / 671 Baseboard Return Grille

827 Toe-Space Grille

Average Face Velocity*		300	400	500	600	700
10 x 6	CFM	115	150	190	225	265
Ak .38	Pt	.013	.023	.037	.052	.072
12 x 6	CFM	135	180	230	280	320
Ak .46	Pt	.013	.022	.035	.051	.070
10 x 8	CFM	150	205	255	305	355
Ak .51	Pt	.012	.022	.035	.050	.068
14 x 6	CFM	160	210	265	320	370
Ak .53	Pt	.012	.022	.035	.050	.068
12 x 8	CFM	180	245	305	365	430
Ak .61	Pt	.012	.022	.034	.049	.066
14 x 8	CFM	215	288	360	430	505
Ak .72	Pt	.012	.021	.033	.047	.065
20 x 6	CFM	225	300	375	450	525
Ak .75	Pt	.012	.021	.033	.047	.064
16 x 8	CFM	250	330	415	500	580
Ak .83	Pt	.012	.021	.033	.046	.063
14 x 10 and 24 x 6	CFM	275	365	460	550	640
Ak .92	Pt	.011	.020	.032	.045	.062
14 x 12	CFM	320	430	540	650	755
Ak 1.08	Pt	.011	.020	.031	.045	.060
30 x 6	CFM	335	445	560	670	780
Ak 1.12	Pt	.011	.020	.031	.044	.060
24 x 8	CFM	365	485	605	730	850
Ak 1.21	Pt	.011	.020	.031	.044	.059
20 x 10	CFM	375	500	630	750	880
Ak 1.25	Pt	.011	.019	.030	.043	.059
24 x 10 and 30 x 8	CFM	450	600	750	890	1040
Ak 1.50	Pt	.011	.019	.030	.042	.057
24 x 12	CFM	550	730	910	1100	1270
Ak 1.82	Pt	.010	.018	.029	.041	.056
30 x 10	CFM	575	760	960	1150	1330
Ak 1.91	Pt	.010	.018	.029	.041	.055
30 x 12	CFM	680	900	1130	1350	1570
Ak 2.25	Pt	.010	.018	.028	.040	.054

*Velocity measured 1" from face

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
2 x 10	CFM		35	45	50	60	70	75	85
Ak .085	Spread		3.0	5.0	5.0	6.0	7.0	8.0	9.0
	Throw		4.0	4.5	6.0	7.0	8.0	9.0	10.0
2 x 12	CFM	30	40	50	60	70	80	90	100
Ak .100	Spread	3.0	4.0	4.5	5.5	6.5	7.0	8.0	9.0
	Throw	3.5	4.5	5.5	7.0	8.0	9.0	10.0	11.0
2 x 14	CFM	35	45	60	70	80	90	105	115
Ak .115	Spread	3.5	4.0	5.0	7.0	7.0	8.0	9.0	10.0
	Throw	3.5	4.5	6.0	8.0	8.0	9.5	10.5	12.0
4 x 8	CFM	40	50	65	80	90	105	115	130
Ak .130	Spread	3.0	4.0	5.0	6.5	7.5	8.5	9.5	11.0
	Throw	4.0	4.5	6.0	7.5	8.5	10.0	11.0	13.0
4 x 10	CFM	50	70	85	100	120	135	155	170
Ak .170	Spread	4.5	5.0	6.5	7.5	9.0	10.0	11.5	13.0
	Throw	4.0	6.0	8.0	10.0	11.0	12.5	14.0	15.5
4 x 12	CFM	60	80	100	120	140	160	175	195
Ak .195	Spread	5.0	6.5	8.0	9.5	11.5	13.0	14.5	16.0
	Throw	4.0	5.5	7.0	8.0	9.5	11.0	12.0	13.0
4 x 14	CFM	70	90	115	140	160	185	205	230
Ak .230	Spread	5.5	7.0	8.5	10.0	12.0	13.5	15.5	17.0
	Throw	4.5	5.5	7.0	8.5	10.0	11.5	12.5	14.0
6 x 10	CFM	70	95	120	145	170	190	215	240
Ak .240	Spread	5.5	7.0	8.0	10.0	12.0	14.0	15.0	17.0
	Throw	4.0	5.5	7.0	8.5	10.0	11.0	12.5	14.0
6 x 12	CFM	85	115	140	170	200	230	255	285
Ak .285	Spread	6.0	7.5	9.0	11.0	13.0	15.0	17.0	19.0
	Throw	4.5	6.0	7.5	9.0	10.0	12.0	14.0	16.0
6 x 14	CFM	100	130	165	200	230	265	300	330
Ak .330	Spread	6.5	8.0	9.0	12.0	14.0	16.5	18.0	20.0
	Throw	4.5	6.5	8.0	9.5	11.0	13.0	15.0	17.0

Terminal Velocity of 50 FPM

60GH / AL60GH / 60GHFF / 60GH7 Stamped-Face Return Grille

Face Velocity*		300	400	500	600	700
6 x 4	CFM	34	45	56	68	79
Ak .110	Ps	.020	.035	.054	.079	.108
6 x 6	CFM	50	67	84	101	117
Ak .170	Ps	.019	.035	.054	.079	.107
8 x 4	CFM	45	60	75	90	105
Ak .150	Ps	.019	.035	.054	.079	.108
8 x 6	CFM	67	89	111	134	156
Ak .220	Ps	.019	.035	.054	.079	.107
8 x 8	CFM	89	118	148	178	207
Ak .300	Ps	.019	.035	.054	.078	.107
10 x 4	CFM	56	74	93	112	130
Ak .190	Ps	.019	.035	.054	.079	.107
10 x 6	CFM	83	111	139	167	194
Ak .280	Ps	.019	.035	.054	.078	.107
10 x 8	CFM	111	147	184	221	258
Ak .370	Ps	.019	.034	.054	.078	.106
10 x 10	CFM	138	184	230	276	322
Ak .460	Ps	.019	.034	.054	.078	.106
12 x 6	CFM	100	133	166	199	233
Ak .330	Ps	.019	.034	.054	.078	.106
12 x 8	CFM	132	177	221	265	309
Ak .440	Ps	.019	.034	.054	.078	.106
12 x 10	CFM	165	220	275	330	385
Ak .550	Ps	.019	.034	.053	.077	.105
12 x 12	CFM	197	263	329	395	461
Ak .660	Ps	.019	.034	.053	.077	.104
12 x 18	CFM	294	392	491	589	687
Ak .980	Ps	.019	.034	.053	.075	.102
14 x 6	CFM	116	155	193	232	271
Ak .390	Ps	.019	.034	.054	.078	.106
14 x 8	CFM	154	205	257	308	360
Ak .510	Ps	.019	.034	.053	.077	.105
14 x 10	CFM	192	256	320	384	448
Ak .640	Ps	.019	.034	.053	.077	.104
14 x 12	CFM	230	306	383	460	536
Ak .770	Ps	.019	.034	.053	.076	.103
14 x 14	CFM	267	357	446	535	624
Ak .890	Ps	.019	.034	.053	.075	.103

Face Velocity*		300	400	500	600	700
14 x 18	CFM	343	457	571	685	800
Ak 1.140	Ps	.019	.033	.052	.074	.101
16 x 6	CFM	132	177	221	265	309
Ak .440	Ps	.019	.034	.054	.078	.106
16 x 8	CFM	176	234	293	352	410
Ak .590	Ps	.019	.034	.053	.077	.105
16 x 10	CFM	219	292	365	438	511
Ak .730	Ps	.019	.034	.053	.076	.104
16 x 12	CFM	262	349	437	524	612
Ak .870	Ps	.019	.034	.053	.076	.103
16 x 14	CFM	305	407	509	610	712
Ak 1.020	Ps	.019	.034	.052	.075	.102
16 x 16	CFM	348	464	580	696	812
Ak 1.160	Ps	.019	.033	.052	.074	.101
16 x 24	CFM	519	692	865	1038	1211
Ak 1.730	Ps	.018	.033	.051	.071	.097
16 x 25	CFM	540	720	900	1081	1261
Ak 1.800	Ps	.018	.033	.051	.071	.097
18 x 6	CFM	149	198	248	297	347
Ak .500	Ps	.019	.034	.054	.077	.105
18 x 18	CFM	439	585	732	878	1024
Ak 1.460	Ps	.019	.033	.052	.073	.099
18 x 24	CFM	583	777	971	1166	1360
Ak 1.940	Ps	.018	.032	.051	.070	.096
20 x 6	CFM	165	220	275	330	385
Ak .550	Ps	.019	.034	.053	.077	.105
20 x 10	CFM	273	364	455	546	637
Ak .910	Ps	.019	.034	.053	.075	.103
20 x 12	CFM	327	435	544	653	762
Ak 1.090	Ps	.019	.033	.052	.074	.101
20 x 14	CFM	380	507	634	760	887
Ak 1.270	Ps	.019	.033	.052	.074	.100
20 x 20	CFM	540	720	900	1081	1261
Ak 1.800	Ps	.018	.033	.051	.071	.097
20 x 24	CFM	647	862	1078	1293	1509
Ak 2.160	Ps	.018	.032	.050	.069	.094
20 x 25	CFM	673	898	1122	1346	1571
Ak 2.240	Ps	.018	.032	.050	.069	.094

Face Velocity*		300	400	500	600	700
24 x 4	CFM	132	177	221	265	309
Ak .440	Ps	.019	.034	.054	.078	.106
24 x 6	CFM	197	263	329	395	461
Ak .660	Ps	.019	.034	.053	.077	.104
24 x 8	CFM	262	349	437	524	612
Ak .870	Ps	.019	.034	.053	.076	.103
24 x 10	CFM	327	435	544	653	762
Ak 1.090	Ps	.019	.033	.052	.074	.101
24 x 12	CFM	391	521	651	782	912
Ak 1.300	Ps	.019	.033	.052	.073	.100
24 x 14	CFM	455	607	758	910	1062
Ak 1.520	Ps	.019	.033	.051	.072	.098
24 x 24	CFM	774	1032	1290	1548	1806
Ak 2.580	Ps	.018	.032	.049	.067	.091
30 x 4	CFM	165	220	275	330	385
Ak .550	Ps	.019	.034	.053	.077	.105
30 x 6	CFM	246	328	410	492	574
Ak .820	Ps	.019	.034	.053	.076	.103
30 x 8	CFM	327	435	544	653	762
Ak 1.090	Ps	.019	.033	.052	.074	.101
30 x 10	CFM	407	543	678	814	949
Ak 1.360	Ps	.019	.033	.052	.073	.100
30 x 12	CFM	487	649	812	974	1136
Ak 1.620	Ps	.018	.033	.051	.072	.098
30 x 14	CFM	567	756	945	1134	1323
Ak 1.890	Ps	.018	.032	.051	.071	.096
30 x 18	CFM	726	968	1210	1452	1694
Ak 2.420	Ps	.018	.032	.050	.068	.092
30 x 20	CFM	806	1074	1343	1611	1880
Ak 2.690	Ps	.018	.031	.049	.067	.091
30 x 24	CFM	964	1286	1607	1928	2250
Ak 3.210	Ps	.017	.031	.048	.064	.087
30 x 30	CFM	1201	1602	2002	2403	2803
Ak 4.000	Ps	.017	.030	.046	.060	.082
36 x 8	CFM	391	521	651	782	912
Ak 1.300	Ps	.019	.033	.052	.073	.100

63GH Stamped-Face Return Grille

Face Velocity*		300	400	500	600
6 x 4	CFM	33	44	55	66
Ak .111	Ps	.010	.018	.029	.041
6 x 6	CFM	50	67	83	100
Ak .167	Ps	.010	.018	.029	.041
8 x 4	CFM	44	59	74	89
Ak .148	Ps	.010	.018	.029	.041
8 x 6	CFM	67	89	112	134
Ak .223	Ps	.010	.018	.029	.041
8 x 8	CFM	90	120	150	179
Ak .299	Ps	.010	.018	.029	.041
10 x 4	CFM	56	74	93	111
Ak .186	Ps	.010	.018	.029	.041
10 x 6	CFM	84	112	140	168
Ak .280	Ps	.010	.018	.029	.041
10 x 8	CFM	112	150	187	225
Ak .375	Ps	.010	.018	.029	.041
10 x 10	CFM	141	188	235	282
Ak .470	Ps	.010	.018	.029	.041
12 x 6	CFM	101	135	168	202
Ak .337	Ps	.010	.018	.029	.041
12 x 8	CFM	135	180	226	271
Ak .451	Ps	.010	.018	.029	.041
12 x 10	CFM	170	226	283	339
Ak .566	Ps	.010	.018	.029	.041
12 x 12	CFM	204	272	340	408
Ak .681	Ps	.010	.018	.029	.041
12 x 18	CFM	308	411	513	616
Ak 1.027	Ps	.010	.018	.029	.041
14 x 6	CFM	118	158	197	236
Ak .394	Ps	.010	.018	.029	.041
14 x 8	CFM	158	211	264	316
Ak .527	Ps	.010	.018	.029	.041
14 x 10	CFM	198	265	331	397
Ak .661	Ps	.010	.018	.029	.041
14 x 12	CFM	239	318	398	477
Ak .796	Ps	.010	.018	.029	.041
14 x 14	CFM	279	372	465	558
Ak .930	Ps	.010	.018	.029	.041
14 x 18	CFM	360	480	600	720
Ak 1.200	Ps	.010	.018	.029	.041

Face Velocity*		300	400	500	600
16 x 6	CFM	135	180	226	271
Ak .451	Ps	.010	.018	.029	.041
16 x 8	CFM	181	242	302	362
Ak .604	Ps	.010	.018	.029	.041
16 x 10	CFM	227	303	379	454
Ak .757	Ps	.010	.018	.029	.041
16 x 12	CFM	273	364	455	547
Ak .911	Ps	.010	.018	.029	.041
16 x 14	CFM	320	426	533	639
Ak 1.065	Ps	.010	.018	.029	.041
16 x 16	CFM	366	488	610	732
Ak 1.219	Ps	.010	.018	.029	.041
16 x 24	CFM	552	736	920	1104
Ak 1.840	Ps	.010	.018	.029	.041
18 x 6	CFM	153	203	254	305
Ak .508	Ps	.010	.018	.029	.041
18 x 18	CFM	465	619	774	929
Ak 1.548	Ps	.010	.018	.029	.041
20 x 6	CFM	170	226	283	339
Ak .566	Ps	.010	.018	.029	.041
20 x 10	CFM	285	380	475	570
Ak .949	Ps	.010	.018	.029	.041
20 x 12	CFM	343	457	571	685
Ak 1.142	Ps	.010	.018	.029	.041
20 x 14	CFM	401	534	668	801
Ak 1.335	Ps	.010	.018	.029	.041
20 x 20	CFM	575	767	959	1150
Ak 1.917	Ps	.010	.018	.029	.041
20 x 24	CFM	692	923	1153	1384
Ak 2.307	Ps	.010	.019	.029	.042
20 x 25	CFM	721	962	1202	1442
Ak 2.404	Ps	.010	.019	.029	.042

Face Velocity*		300	400	500	600
24 x 4	CFM	135	180	226	271
Ak .451	Ps	.010	.018	.029	.041
24 x 6	CFM	204	272	340	408
Ak .681	Ps	.010	.018	.029	.041
24 x 8	CFM	273	364	455	547
Ak .911	Ps	.010	.018	.029	.041
24 x 10	CFM	343	457	571	685
Ak 1.142	Ps	.010	.018	.029	.041
24 x 12	CFM	412	550	687	825
Ak 1.374	Ps	.010	.018	.029	.041
24 x 14	CFM	482	643	803	964
Ak 1.607	Ps	.010	.018	.029	.041
24 x 24	CFM	832	1110	1387	1665
Ak 2.775	Ps	.010	.019	.029	.042
30 x 4	CFM	170	226	283	339
Ak .566	Ps	.010	.018	.029	.041
30 x 6	CFM	256	341	427	512
Ak .853	Ps	.010	.018	.029	.041
30 x 8	CFM	343	457	571	685
Ak 1.142	Ps	.010	.018	.029	.041
30 x 10	CFM	430	573	716	859
Ak 1.432	Ps	.010	.018	.029	.041
30 x 12	CFM	517	689	862	1034
Ak 1.723	Ps	.010	.018	.029	.041
30 x 14	CFM	604	806	1007	1209
Ak 2.015	Ps	.010	.018	.029	.042
30 x 18	CFM	780	1040	1300	1560
Ak 2.599	Ps	.010	.019	.029	.042
30 x 20	CFM	868	1157	1446	1735
Ak 2.892	Ps	.010	.019	.029	.042
30 x 24	CFM	1044	1392	1740	2088
Ak 3.479	Ps	.010	.019	.029	.042
30 x 30	CFM	1309	1745	2181	2618
Ak 4.363	Ps	.010	.019	.029	.042
36 x 6	CFM	308	411	513	616
Ak 1.027	Ps	.010	.018	.029	.041
36 x 8	CFM	412	550	687	825
Ak 1.374	Ps	.010	.018	.029	.041

*Filter grilles: Tested without filters. Typical capacity is 2 CFM per square inch of nominal filter area. Recommended face velocity is 300-450 FPM. Velocities higher will decrease filter performance, increase flow resistance, and possibly be of noise concern. Velocity measured 1" from face.



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	80	110	135	160	190	215	240	270
	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 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	155	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

Series 600 / AL600, Series SW Stamped-Face Register

601 / AL601 / SW1 One-Way

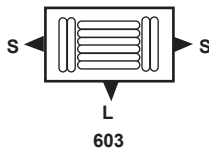
Face Velocity	300	400	500	600	700	800	900	1000
Pressure Loss	.006	.010	.016	.022	.031	.040	.050	.062
8 x 6 CFM	40	55	70	90	100	110	125	140
Ak .140 Throw	5.0	6.0	8.0	9.0	11.0	12.0	14.0	15.0
10 x 6 CFM	55	80	95	110	130	150	165	185
Ak .185 Throw	5.0	7.0	10.0	11.0	13.0	14.0	16.0	18.0
12 x 6 CFM	70	90	115	135	160	180	205	225
Ak .225 Throw	6.0	8.0	12.0	12.0	14.0	16.0	18.0	20.0
14 x 6 CFM	85	115	145	175	205	230	260	290
Ak .290 Throw	7.0	9.0	16.0	14.0	17.0	19.0	21.0	24.0
16 x 6 CFM	100	130	165	200	230	265	295	330
Ak .330 Throw	8.0	10.0	18.0	15.0	18.0	20.0	23.0	25.0
18 x 6 CFM	115	155	195	235	275	310	350	390
Ak .390 Throw	8.0	11.0	21.0	17.0	20.0	22.0	25.0	28.0
20 x 6 CFM	130	175	220	265	310	360	395	440
Ak .440 Throw	5.0	12.0	24.0	18.0	21.0	24.0	27.0	30.0

Terminal Velocity of 75 FPM

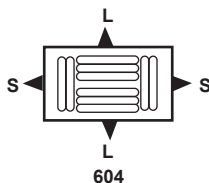
602 / AL602 / SW2 Two-Way

Face Velocity	300	400	500	600	700	800	900	1000
Pressure Loss	.006	.010	.016	.022	.031	.040	.050	.062
8 x 4 CFM	25	35	45	55	65	70	80	90
Ak .090 Throw	2.0	3.5	4.5	5.5	6.5	7.0	8.0	9.0
6 x 6 CFM	30	40	50	65	75	85	95	105
Ak .105 Throw	3.0	3.5	4.5	6.0	7.0	8.0	9.0	10.0
10 x 4 CFM	35	45	60	70	80	90	105	115
Ak .115 Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
12 x 4 CFM	40	55	70	85	100	110	125	140
Ak .140 Throw	3.5	4.5	5.5	6.5	8.0	9.0	10.0	11.5
10 x 6 CFM	55	75	95	110	130	150	165	185
Ak .185 Throw	4.0	5.0	6.5	8.0	9.0	10.5	12.0	13.0
8 x 8 CFM	60	80	100	120	140	160	180	200
Ak .200 Throw	4.0	5.5	7.0	8.0	9.5	11.0	12.5	13.5
12 x 6 CFM	70	90	115	135	160	180	205	225
Ak .225 Throw	4.5	6.0	7.5	8.5	10.5	12.0	13.0	14.5
14 x 6 CFM	85	115	145	175	205	230	260	290
Ak .290 Throw	5.0	6.5	8.5	10.0	11.5	13.5	15.0	17.0
10 x 10 CFM	95	125	155	185	215	250	280	310
Ak .310 Throw	5.0	7.0	8.5	10.0	12.0	14.0	15.5	17.0
12 x 8 CFM	95	130	160	190	225	255	290	320
Ak .320 Throw	5.5	7.0	9.0	10.5	12.5	14.0	16.0	18.0
14 x 8 CFM	115	155	195	235	275	310	350	390
Ak .390 Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
12 x 12 CFM	140	190	235	280	330	375	425	470
Ak .470 Throw	6.5	8.5	10.5	12.5	15.0	17.0	19.0	21.0

Terminal Velocity of 75 FPM



603



604

603/AL603/SW3 Three-Way

Face Velocity	300	400	500	600	700	800	900	1000
Pressure Loss	.006	.010	.016	.022	.031	.040	.050	.062
8 x 4 Total CFM	25	35	45	55	65	70	80	90
Ak .090 CFM L/S	13/6	17/9	24/11	29/13	34/16	37/17	42/19	48/22
Throw L/S	3.0/2.5	4.0/3.0	5.0/3.5	6.0/4.0	7.0/5.0	7.5/5.5	8.5/6.0	10.0/6.5
6 x 6 Total CFM	30	40	50	65	75	85	95	105
Ak .105 CFM L/S	10/10	13/14	16/17	21/22	24/26	27/29	30/32	34/36
Throw L/S	3.0/3.0	3.5/3.5	4.0/4.0	5.5/5.5	6.0/6.0	7.0/7.0	8.0/8.0	9.0/9.0
10 x 4 Total CFM	35	45	60	70	80	90	105	115
Ak .115 CFM L/S	21/7	29/8	38/11	45/13	51/14	58/16	67/19	74/21
Throw L/S	4.0/2.0	5.0/2.5	6.0/3.5	7.5/4.0	8.5/4.5	9.5/5.0	11.0/6.0	12.0/6.5
12 x 4 Total CFM	40	55	70	85	100	110	125	140
Ak .140 CFM L/S	21/10	29/13	36/17	44/20	52/24	57/26	65/30	73/34
Throw L/S	3.5/2.5	5.0/3.0	6.0/4.0	7.5/5.0	8.5/5.5	9.5/6.0	10.5/7.0	12.0/8.0
10 x 6 Total CFM	55	75	95	110	130	150	165	185
Ak .185 CFM L/S	35/10	48/14	61/17	70/20	83/23	96/27	106/30	118/33
Throw L/S	4.5/2.5	6.5/3.5	8.0/4.0	9.0/5.0	11.0/5.5	12.5/6.5	14.0/7.5	15.5/8.0
8 x 8 Total CFM	60	80	100	120	140	160	180	200
Ak .200 CFM L/S	31/14	42/19	52/24	62/29	73/34	83/38	94/43	104/48
Throw L/S	4.5/3.0	6.0/4.0	7.5/5.0	8.5/6.0	10.5/7.0	11.5/8.0	13.0/9.0	14.5/10.0
12 x 6 Total CFM	70	90	115	135	160	180	205	225
Ak .225 CFM L/S	36/17	47/22	60/28	70/32	83/38	94/43	107/49	117/54
Throw L/S	4.5/3.5	6.0/4.0	8.0/5.5	9.0/6.0	11.0/7.5	12.5/8.0	14.0/9.5	15.5/10.5
14 x 6 Total CFM	85	115	145	175	205	230	260	290
Ak .290 CFM L/S	51/17	69/23	87/29	105/35	123/41	138/46	156/52	174/58
Throw L/S	5.5/3.5	7.5/4.5	10.0/5.5	12.0/6.5	14.0/8.0	15.5/9.0	18.0/10.0	20.0/11.0
10 x 10 Total CFM	95	125	155	185	215	250	280	310
Ak .310 CFM L/S	61/17	80/23	99/28	118/33	138/39	160/45	179/50	198/56
Throw L/S	6.0/3.5	8.0/4.5	10.0/5.5	12.0/6.5	14.0/7.5	16.5/9.0	18.0/9.5	20.0/10.5
12 x 8 Total CFM	95	130	160	190	225	255	290	320
Ak .320 CFM L/S	49/23	68/31	83/38	99/46	117/54	133/61	151/70	166/77
Throw L/S	5.5/4.0	7.5/5.0	9.5/6.0	11.0/7.5	13.0/9.0	15.0/10.0	17.0/11.5	19.0/12.5
14 x 8 Total CFM	115	155	195	235	275	310	350	390
Ak .390 CFM L/S	69/23	93/31	117/39	141/47	165/55	186/62	210/70	234/78
Throw L/S	6.5/4.0	9.0/5.0	11.0/6.0	13.5/7.5	16.0/9.0	18.0/10.0	20.0/11.5	22.0/12.5
12 x 12 Total CFM	140	190	235	280	330	375	425	470
Ak .470 CFM L/S	73/34	99/46	122/56	146/67	172/79	195/90	221/102	244/113
Throw L/S	7.0/4.5	9.0/6.0	11.5/7.5	13.5/9.0	16.0/10.5	18.0/12.0	20.0/14.0	23.0/15.5
14 x 14 Total CFM	195	260	325	390	455	520	585	650
Ak .650 CFM L/S	117/39	156/52	195/65	234/78	273/91	312/104	351/117	390/130
Throw L/S	8.5/5.0	11.5/6.5	14.0/8.0	17.0/9.5	20.0/11.5	23.0/13.0	26.0/14.5	28.0/16.0
16 x 16 Total CFM	280	370	465	560	650	745	835	930
Ak .930 CFM L/S	164/67	192/89	242/112	291/134	338/156	387/179	434/200	484/223
Throw L/S	10.0/6.5	13.0/9.0	16.5/11.0	20.0/13.0	23.0/15.5	26.0/17.0	29.0/20.0	33.0/22.0

Terminal Velocity of 75 FPM

604/AL604/SW4 Four-Way

Face Velocity	300	400	500	600	700	800	900	1000
Pressure Loss	.006	.010	.016	.022	.031	.040	.050	.062
6 x 6 Total CFM	30	40	50	65	75	85	95	105
Ak .105 CFM L/S	4/11	6/14	8/17	10/22	12/26	14/29	15/32	17/36
Throw L/S	2.0/3.0	2.0/3.5	3.0/4.0	3.5/5.5	4.5/6.5	5.0/7.0	5.5/8.0	6.0/9.0
8 x 8 Total CFM	60	80	100	120	140	160	180	200
Ak .200 CFM L/S	16/14	21/19	26/24	31/29	37/34	42/38	47/43	52/48
Throw L/S	3.0/3.0	4.0/4.0	5.0/5.0	6.0/6.0	7.5/7.0	8.5/8.0	9.5/9.0	10.5/10.0
10 x 10 Total CFM	95	125	155	185	215	250	280	310
Ak .310 CFM L/S	31/17	40/23	50/28	59/33	69/39	80/45	90/50	99/56
Throw L/S	4.5/3.5	6.0/4.5	7.0/5.5	8.5/6.5	10.0/7.5	11.0/9.0	13.0/9.5	14.5/10.5
12 x 12 Total CFM	140	190	235	280	330	375	425	470
Ak .470 CFM L/S	37/34	50/46	61/56	73/67	86/79	98/90	111/102	122/113
Throw L/S	5.0/4.5	6.5/6.0	8.0/7.5	9.5/9.0	11.5/10.5	13.0/12.0	14.5/14.0	16.0/15.5
14 x 14 Total CFM	195	260	325	390	455	520	585	650
Ak .650 CFM L/S	59/39	78/52	98/65	117/78	137/91	156/104	176/117	195/130
Throw L/S	6.0/5.0	8.0/6.5	10.0/8.0	12.0/9.5	14.0/11.5	16.0/13.0	18.0/14.5	20.0/16.0
16 x 16 Total CFM	280	370	465	560	650	745	835	930
Ak .930 CFM L/S	73/67	96/89	121/112	146/134	169/156	194/179	217/200	242/223
Throw L/S	7.0/6.5	9.0/9.0	11.5/11.0	14.0/13.0	16.0/15.5	19.0/17.0	21.0/20.0	23.0/22.0

Terminal Velocity of 75 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



150 Round Ceiling Diffuser

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062
Neck Size 6"	CFM		55	65	80	95	105	120	135
Ak .135	Throw		2.5	3.0	3.5	4.0	4.5	5.0	5.5
Neck Size 8"	CFM	70	90	115	135	160	180	200	225
Ak .225	Throw	2.0	3.0	3.5	4.5	5.0	5.5	6.5	7.0
Neck Size 10"	CFM	105	140	175	210	240	275	310	345
Ak .345	Throw	2.5	3.5	4.5	5.0	6.0	7.0	8.0	8.5
Neck Size 12"	CFM	150	200	250	300	350	400	450	500
Ak .500	Throw	3.0	4.0	5.0	6.0	7.5	8.5	9.0	10.5
Neck Size 14"	CFM	190	250	315	375	440	500	565	625
Ak .625	Throw	3.5	4.5	5.5	6.5	8.0	9.0	10.0	11.0
Neck Size 18"	CFM	310	415	520	625	730	830	935	1040
Ak 1.040	Throw	4.5	6.0	7.0	8.5	10.0	11.5	13.0	14.5
Neck Size 22"	CFM	450	600	750	900	1050	1200	1350	1500
Ak 1.500	Throw	5.0	6.5	8.5	10.0	12.0	13.0	15.0	16.0

Terminal Velocity of 50 FPM

Series AL160 Square Ceiling Diffuser

AL161OBD/AL161ML

One-Way Air Pattern

Face Velocity		400	500	600	700	900	1100	1500
Pressure Loss		.010	.016	.022	.031	.050	.075	.140
6 x 6	CFM	55	65	75	90	120	140	195
Ak .13	Throw	5.0	6.0	7.0	8.0	10.0	12.0	15.0
8 x 8	CFM	75	90	105	120	150	180	240
Ak .20	Throw	6.0	7.0	8.0	10.0	12.0	15.0	18.0
10 x 10	CFM	115	135	155	175	235	290	395
Ak .29	Throw	7.0	8.0	10.0	12.0	15.0	19.0	24.0
12 x 12	CFM	170	210	255	300	380	470	610
Ak .42	Throw	8.0	10.0	12.0	15.0	19.0	24.0	29.0
14 x 14	CFM	250	305	360	410	505	610	800
Ak .59	Throw	11.0	13.0	15.0	18.0	24.0	30.0	35.0

Terminal Velocity of 75 FPM

AL162OBD/AL162ML

Two-Way Air Pattern

Face Velocity		400	500	600	700	900	1100	1500
Pressure Loss		.010	.016	.022	.031	.050	.075	.140
6 x 6	CFM	55	65	75	90	120	140	195
Ak .13	Throw	3.0	4.0	5.0	6.0	7.0	9.0	12.0
8 x 8	CFM	75	90	105	120	150	180	240
Ak .20	Throw	4.0	5.0	6.0	7.0	9.0	12.0	16.0
10 x 10	CFM	115	135	155	175	235	290	395
Ak .29	Throw	5.0	6.0	7.0	8.0	10.0	14.0	20.0
12 x 12	CFM	170	210	255	300	380	470	610
Ak .42	Throw	6.0	7.0	8.0	10.0	13.0	17.0	23.0
14 x 14	CFM	250	305	360	410	505	610	800
Ak .59	Throw	7.0	9.0	11.0	13.0	16.0	19.0	27.0

Terminal Velocity of 75 FPM

AL163OBD/AL163ML

Three-Way Air Pattern

Face Velocity		400	500	600	700	900	1100	1500
Pressure Loss		.010	.016	.022	.031	.050	.075	.140
6 x 6	CFM	55	65	75	90	120	140	195
Ak .13	Throw L/S	3.5/2.5	4.0/3.0	5.0/3.5	5.5/4.0	7.0/5.0	9.0/6.0	12.0/9.0
8 x 8	CFM	75	90	105	120	150	180	240
Ak .20	Throw L/S	4.0/2.0	5.0/2.5	6.0/3.5	7.0/4.0	8.0/4.5	10.0/5.5	12.0/7.0
10 x 10	CFM	115	135	155	175	235	290	395
Ak .29	Throw L/S	5.0/3.0	7.0/4.0	8.0/4.5	10.0/5.5	12.0/7.0	14.0/8.5	18.0/10.5
12 x 12	CFM	170	210	255	300	380	470	610
Ak .42	Throw L/S	7.0/4.0	8.5/4.5	10.0/5.5	12.0/6.5	15.0/8.5	18.0/10.0	23.0/14.0
14 x 14	CFM	250	305	360	410	505	610	800
Ak .59	Throw L/S	8.0/5.5	10.0/6.0	11.5/7.0	13.0/7.5	15.5/9.0	20.0/11.0	27.0/16.0

Terminal Velocity of 75 FPM

AL164OBD/AL164ML

Four-Way Air Pattern

Face Velocity		400	500	600	700	900	1100	1500
Pressure Loss		.010	.016	.022	.031	.050	.075	.140
6 x 6	CFM	55	65	75	90	120	140	195
Ak .13	Throw	2.0	3.0	4.0	5.0	6.0	7.0	9.0
8 x 8	CFM	75	90	105	120	150	180	240
Ak .20	Throw	3.0	4.0	5.0	6.0	8.0	10.0	13.0
10 x 10	CFM	115	135	155	175	235	290	395
Ak .29	Throw	4.0	5.0	6.0	7.0	9.0	12.0	14.0
12 x 12	CFM	170	210	255	300	380	470	610
Ak .42	Throw	5.0	6.0	7.0	8.0	10.0	12.0	15.0
14 x 14	CFM	250	305	360	410	505	610	800
Ak .59	Throw	6.0	7.0	8.0	9.0	11.0	14.0	18.0

Terminal Velocity of 75 FPM

AL165OBD/AL165ML

Two-Way Corner Air Pattern

Face Velocity		400	500	600	700	900	1100	1500
Pressure Loss		.010	.016	.022	.031	.050	.075	.140
6 x 6	CFM	55	65	75	90	120	140	195
Ak .13	Throw	3.0	4.0	5.0	6.0	7.0	9.0	12.0
8 x 8	CFM	75	90	105	120	150	180	240
Ak .20	Throw	4.0	5.0	6.0	7.0	9.0	12.0	16.0
10 x 10	CFM	115	135	155	175	235	290	395
Ak .29	Throw	5.0	6.0	7.0	8.0	10.0	14.0	20.0
12 x 12	CFM	170	210	255	300	380	470	610
Ak .42	Throw	6.0	7.0	8.0	10.0	13.0	17.0	23.0
14 x 14	CFM	250	305	360	410	505	610	800
Ak .59	Throw	7.0	9.0	11.0	13.0	16.0	19.0	27.0

Terminal Velocity of 75 FPM



<NC 20



NC 20-30



NC 30-35



NC 35-40

Rezzin Sidewall Register

2-Way

Two-Way Air Pattern

Face Velocity		300	400	500	600	700	800	900	1000
8 x 4 Ak .095	CFM	28	38	47	57	66	76	85	95
	Ps	.02	.02	.02	.03	.04	.05	.06	.07
	Throw	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
10 x 4 Ak .117	CFM	35	47	59	70	82	94	105	117
	Ps	.01	.01	.02	.02	.03	.04	.05	.06
	Throw	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
10 x 6 Ak .193	CFM	58	77	97	116	135	154	174	193
	Ps	.01	.01	.02	.02	.03	.04	.05	.06
	Throw	1.5	2.0	2.5	3.0	3.5	4.5	5.0	5.5
12 x 6 Ak .238	CFM	71	95	119	143	167	190	214	238
	Ps	.01	.01	.01	.02	.03	.04	.05	.06
	Throw	5.5	7.0	9.0	10.5	12.5	14.0	16.0	17.5
14 x 6 Ak .291	CFM	87	116	145	174	204	233	262	291
	Ps	.01	.01	.02	.02	.03	.04	.05	.06
	Throw	NA	NA	NA	NA	NA	NA	NA	NA
14 x 8 Ak .395	CFM	119	158	198	237	277	316	356	395
	Ps	.01	.01	.01	.02	.03	.04	.05	.06
	Throw	NA	NA	NA	NA	NA	NA	NA	NA

Terminal Velocity of 75 FPM

NA = Not Available

3-Way

Three-Way Air Pattern

Face Velocity		300	400	500	600	700	800	900	1000
8 x 4 Ak .108	CFM	32	43	54	65	75	86	97	108
	Ps	.01	.01	.02	.03	.04	.05	.07	.08
	Throw Short	NA	NA	NA	NA	NA	NA	NA	NA
	Throw Long	NA	NA	NA	NA	NA	NA	NA	NA
10 x 6 Ak .193	CFM	58	77	97	116	135	154	174	193
	Ps	.01	.01	.02	.03	.03	.04	.05	.06
	Throw Short	2.0	3.0	3.5	4.0	5.0	5.5	6.5	7.0
	Throw Long	1.0	1.5	2.0	2.5	2.5	3.0	3.5	4.0
10 x 8 Ak .246	CFM	74	98	123	148	172	197	221	246
	Ps	.01	.01	.01	.02	.03	.03	.04	.05
	Throw Short	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
	Throw Long	2.5	3.5	4.5	5.0	6.0	7.0	7.5	8.5
12 x 6 Ak .238	CFM	71	95	119	143	167	190	214	238
	Ps	.01	.01	.02	.03	.04	.05	.07	
	Throw Short	2.5	3.5	4.5	5.0	6.0	7.0	7.5	8.5
	Throw Long	2.5	3.5	4.5	5.0	6.0	7.0	7.5	8.5
14 x 6 Ak .297	CFM	89	119	148	178	208	237	267	297
	Ps	.01	.01	.02	.03	.03	.04	.06	.07
	Throw Short	NA	NA	NA	NA	NA	NA	NA	NA
	Throw Long	NA	NA	NA	NA	NA	NA	NA	NA
14 x 8 Ak .399	CFM	120	160	199	239	279	319	359	399
	Ps	.01	.01	.01	.02	.03	.04	.05	.06
	Throw Short	NA	NA	NA	NA	NA	NA	NA	NA
	Throw Long	NA	NA	NA	NA	NA	NA	NA	NA

Terminal Velocity of 75 FPM

NA = Not Available

4-Way

Four-Way Air Pattern

Face Velocity		300	400	500	600	700	800	900	1000
6 x 6 Ak .124	CFM	37	49	62	74	87	99	111	124
	Ps	.01	.01	.02	.03	.03	.05	.06	.07
	Throw	NA	NA	NA	NA	NA	NA	NA	NA
8 x 8 Ak .231	CFM	69	92	115	139	162	185	208	231
	Ps	.00	.01	.01	.02	.02	.03	.04	.04
	Throw	NA	NA	NA	NA	NA	NA	NA	NA
10 x 10 Ak .347	CFM	104	139	173	208	243	277	312	347
	Ps	.01	.01	.02	.02	.03	.04	.05	.07
	Throw	NA	NA	NA	NA	NA	NA	NA	NA
12 x 12 Ak .510	CFM	153	204	255	306	357	408	459	510
	Ps	.01	.01	.02	.02	.03	.04	.05	.07
	Throw	NA	NA	NA	NA	NA	NA	NA	NA

Terminal Velocity of 75 FPM

NA = Not Available

Rezzin Square Ceiling Diffuser

2-Way Corner

Two-Way Corner Air Pattern

Neck Velocity		300	400	500	600	700
Neck Size 6"	CFM	60	80	100	120	135
Ak 0.284	Ps	0.002	0.004	0.006	0.008	0.011
Vt 75	Throw	2.5	3.5	4.0	5.0	6.0
Vt 100	Throw	2.5	3.0	4.0	4.5	5.5
Vt 150	Throw	1.5	2.0	2.5	3.0	3.5
Neck size 7"	CFM	82	109	136	164	191
Ak 0.267	Ps	0.009	0.016	0.025	0.037	0.050
Vt 75	Throw	4.0	5.0	6.0	7.5	8.5
Vt 100	Throw	3.5	4.5	5.5	7.0	8.0
Vt 150	Throw	2.5	3.0	4.0	4.5	5.5
Neck size 8"	CFM	105	140	175	209	244
Ak 0.251	Ps	0.016	0.029	0.045	0.065	0.088
Vt 75	Throw	5.0	6.5	8.0	9.5	11.0
Vt 100	Throw	4.5	6.0	7.5	9.0	10.5
Vt 150	Throw	3.0	4.0	5.0	6.0	7.0

3-Way

Three-Way Air Pattern

Neck Velocity		300	400	500	600	700
Neck Size 6"	CFM	60	80	100	120	135
Ak 0.247	Ps	0.002	0.004	0.006	0.008	0.011
Vt 75 S/L	Throw	2.0 2.5	3.0 3.5	3.5 4.5	4.5 5.5	5.0 6.0
Vt 100 S/L	Throw	2.0 2.5	3.0 3.5	3.5 4.0	4.0 5.0	5.0 6.0
Vt 150 S/L	Throw	1.5 1.5	2.0 2.0	2.5 3.0	3.0 3.5	3.0 4.0
Neck Size 7"	CFM	80	110	135	165	190
Ak 0.243	Ps	0.009	0.016	0.026	0.037	0.050
Vt 75 S/L	Throw	2.5 4.0	3.5 5.5	4.5 7.0	5.5 8.5	6.0 9.5
Vt 100 S/L	Throw	2.5 3.5	3.5 5.3	4.0 6.3	5.0 7.5	5.5 9.0
Vt 150 S/L	Throw	1.8 2.5	2.5 3.5	3.0 4.5	3.5 5.5	4.0 6.0
Neck Size 8"	CFM	105	140	175	210	245
Ak 0.239	Ps	0.016	0.029	0.046	0.066	0.090
Vt 75 S/L	Throw	3.0 5.5	4.0 7.5	5.0 9.0	6.0 11.0	7.0 13.0
Vt 100 S/L	Throw	3.0 5.0	3.5 7.0	4.5 8.5	5.5 10.5	6.5 12.0
Vt 150 S/L	Throw	2.0 3.5	2.5 4.5	3.0 6.0	3.5 7.0	4.5 8.0

4-Way

Four-Way Air Pattern

Neck Velocity		300	400	500	600	700
Neck Size 6"	CFM	60	80	100	120	135
Ak 0.210	Ps	0.001	0.002	0.003	0.005	0.006
Vt 75	Throw	3.0	3.5	4.5	5.5	6.5
Vt 100	Throw			4.5	5.0	6.0
Vt 150	Throw	1.5	2.5	3.0	3.5	4.0
Neck Size 7"	CFM	80	110	135	165	190
Ak 0.209	Ps	0.003	0.005	0.008	0.011	0.015
Vt 75	Throw	3.8		6.0	7.5	8.5
Vt 100	Throw	3.5	4.5	5.5	7.0	8.0
Vt 150	Throw	2.5	3.0	4.0	4.5	5.5
Neck Size 8"	CFM	105	140	175	210	245
Ak 0.209	Ps	0.005	0.008	0.013	0.018	0.025
Vt 75	Throw	4.5	6.0	7.5	9.0	10.5
Vt 100	Throw	4.0	5.5	7.0	8.5	10.0
Vt 150	Throw	3.0	3.5	4.5	5.5	6.5

Rezzin Round Ceiling Diffuser

Face Velocity		300	400	500	600	700	800	900	1000
Neck Size 6" Ak .224	CFM	67	89	112	134	157	179	201	224
	Ps	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
	Throw	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
Neck Size 7" Ak .229	CFM	69	92	115	137	160	183	206	229
	Ps	0.05	0.09	0.13	0.19	0.26	0.34	0.43	0.53
	Throw	1.75	2.25	2.75	3.25	3.75	4.25	5.00	5.50
Neck Size 8" Ak .235	CFM	70	94	117	141	164	188	211	235
	Ps	0.10	0.17	0.26	0.38	0.52	0.67	0.85	1.05
	Throw	2.00	2.50	3.00	3.50	4.00	4.50	5.50	6.00

Terminal Velocity of 50 FPM

Rezzin Floor Register

Face Velocity		300	400	500	600	700	800	900	1000
2 x 12 Ak .084	CFM	25	34	42	50	59	67	76	84
	Ps	.01	.02	.03	.05	.06	.08	.10	.12
	Throw	2.0	2.5	3.5	4.0	4.5	5.5	6.0	6.5
	Spread	1.5	2.0	2.5	3.0	3.0	3.5	4.0	4.5
4 x 10 Ak .141	CFM	42	56	71	85	99	113	127	141
	Ps	.02	.02	.03	.04	.06	.07	.09	.11
	Throw	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.0
	Spread	0.5	1.5	2.5	3.0	4.0	5.0	5.5	6.5
4 x 12 Ak .157	CFM	47	63	79	94	110	126	141	157
	Ps	.02	.03	.04	.05	.07	.09	.11	.13
	Throw	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
	Spread	0.5	1.5	2.5	4.0	5.0	6.0	7.0	8.0

Terminal Velocity of 50 FPM

Rezzin T-Bar Directional Diffuser

		Neck Velocity FPM									
		400	500	600	700	800	900	1000	1200	1400	1600
6"	CFM	79	98	118	137	157	177	196	236	275	314
	Static Pressure	.003	.005	.006	.008	.011	.013	.016	.023	.031	.041
	Total Pressure	.015	.024	.034	.046	.060	.076	.094	.134	.183	.238
	NC	-	-	-	-	-	-	15	22	26	31
8"	CFM	140	175	209	244	279	314	349	419	489	559
	Static Pressure	.009	.014	.021	.028	.037	.046	.057	.082	.111	.145
	Total Pressure	.019	.030	.043	.058	.076	.096	.118	.170	.231	.301
	NC	-	-	-	-	18	22	23	31	35	39
10"	CFM	218	273	327	382	436	491	545	654	764	873
	Static Pressure	.009	.014	.021	.028	.037	.047	.058	.083	.113	.148
	Total Pressure	.019	.029	.042	.058	.075	.095	.117	.169	.230	.300
	NC	-	-	-	-	18	22	26	31	36	40
12"	CFM	314	393	471	550	628	707	785	942	1100	1257
	Static Pressure	.015	.022	.032	.044	.059	.076	.095	.142	.198	.264
	Total Pressure	.025	.038	.054	.074	.098	.126	.157	.231	.319	.422
	NC	-	-	-	18	20	26	29	36	41	45
14"	CFM	428	535	641	748	855	962	1069	1283	1497	1710
	Static Pressure	.015	.023	.033	.044	.057	.072	.089	.128	.175	.228
	Total Pressure	.025	.037	.053	.072	.094	.119	.146	.211	.287	.375
	NC	-	-	-	15	21	25	29	35	40	44

Rezzin T-Bar Throw - Terminal Velocity of 75 FPM

Neck Velocity	400	500	600	700	800	900	1000	1200	1400	1600
CFM	79	98	118	137	157	177	196	236	275	314
6"	3.1	3.9	4.6	5.4	6.2	7.0	7.7	9.3	10.8	12.4
CFM	140	175	209	244	279	314	349	419	489	559
8"	5.3	6.7	8.0	9.3	10.7	12.0	13.3	16.0	18.7	21.3
CFM	218	273	327	382	436	491	545	654	764	873
10"	6.3	7.9	9.4	11.0	12.6	14.1	15.7	18.8	22.0	25.1
CFM	314	393	471	550	628	707	785	942	1100	1257
12"	7.1	8.8	10.6	12.4	14.2	15.9	17.7	21.2	24.8	28.3
CFM	428	535	641	748	855	962	1069	1283	1497	1710
14"	9.1	11.3	13.6	15.9	18.1	20.4	22.7	27.2	31.8	36.3

Rezzin T-Bar Throw - Terminal Velocity of 150 FPM

Neck Velocity	400	500	600	700	800	900	1000	1200	1400	1600
CFM	79	98	118	137	157	177	196	236	275	314
6"	1.3	1.7	2.0	2.4	2.7	3.0	3.4	4.0	4.7	5.4
CFM	140	175	209	244	279	314	349	419	489	559
8"	2.2	2.7	3.3	3.8	4.4	4.9	5.5	6.6	7.7	8.8
CFM	218	273	327	382	436	491	545	654	764	873
10"	2.5	3.1	3.7	4.4	5.0	5.6	6.2	7.5	8.7	10.0
CFM	314	393	471	550	628	707	785	942	1100	1257
12"	3.8	4.8	5.8	6.7	7.7	8.6	9.6	11.5	13.4	15.3
CFM	428	535	641	748	855	962	1069	1283	1497	1710
14"	4.2	5.2	6.3	7.3	8.3	9.4	10.4	12.5	14.6	16.7

Rezzin Modular Core Diffuser

		Neck Velocity FPM									
		400	500	600	700	800	900	1000	1200	1400	1600
6"	CFM	79	98	118	137	157	177	196	236	275	314
	Static Pressure	.003	.005	.007	.010	.013	.017	.021	.030	.041	.054
	Total Pressure	.018	.023	.026	.035	.043	.067	.086	.120	.166	.209
	NC	-	-	-	-	-	16	20	24	30	34
8"	CFM	140	175	209	244	279	314	349	419	489	559
	Static Pressure	.004	.006	.008	.011	.014	.017	.020	.028	.036	.045
	Total Pressure	.013	.021	.030	.041	.053	.066	.081	.115	.155	.201
	NC	-	-	-	-	17	22	24	34	37	41
10"	CFM	218	273	327	382	436	491	545	654	764	873
	Static Pressure	.004	.007	.010	.013	.017	.022	.027	.039	.053	.069
	Total Pressure	.014	.021	.031	.042	.055	.070	.086	.124	.170	.222
	NC	-	-	-	17	22	26	34	42	44	48

- Indicates less than NC15.

		Neck Velocity FPM									
		400	500	600	700	800	900	1000	1200	1400	1600
12"	CFM	314	393	471	550	628	707	785	942	1100	1257
	Static Pressure	.006	.009	.012	.017	.022	.028	.034	.048	.065	.084
	Total Pressure	.015	.024	.035	.047	.061	.077	.095	.137	.186	.242
	NC	-	-	-	20	24	27	35	40	45	49
14"	CFM	428	535	641	748	855	962	1069	1283	1497	1710
	Static Pressure	.008	.013	.018	.024	.031	.040	.048	.069	.093	.120
	Total Pressure	.017	.030	.041	.056	.071	.090	.114	.144	.200	.278
	NC	-	-	15	23	27	34	39	44	48	51
16"	CFM	559	698	838	977	1117	1257	1396	1676	1955	2234
	Static Pressure	.012	.019	.028	.037	.048	.061	.075	.107	.145	.189
	Total Pressure	.022	.034	.049	.066	.086	.108	.134	.192	.260	.339
	NC	-	-	24	27	31	38	40	45	49	51

- Indicates less than NC15.

Rezzin Mod CoreThrow - Terminal Velocity of 75 FPM

Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
CFM		79	98	118	137	157	177	196	236	275	314
6"	1-direction	3.5	4.4	5.3	6.2	7.1	7.9	8.8	10.6	12.4	14.1
	2-direction	4.5	5.6	6.8	7.9	9.0	10.2	11.3	13.6	15.8	18.1
	3-direction Short	0.9	1.1	1.3	1.5	1.7	2.0	2.2	2.6	3.0	3.5
	3-direction Long	1.2	1.5	1.8	2.1	2.5	2.8	3.1	3.7	4.3	4.9
	4-direction	0.6	0.8	0.9	1.1	1.2	1.4	1.5	1.8	2.1	2.5
Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
CFM		140	175	209	244	279	314	349	419	489	559
8"	1-direction	3.1	3.9	4.6	5.4	6.2	7.0	7.7	9.3	10.8	12.4
	2-direction	4.4	5.5	6.6	7.7	8.8	9.9	11.0	13.2	15.4	17.6
	3-direction Short	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0	7.1	8.1
	3-direction Long	3.5	4.4	5.3	6.2	7.0	7.9	8.8	10.6	12.3	14.1
	4-direction	1.5	1.9	2.3	2.7	3.1	3.4	3.8	4.6	5.4	6.1
Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
CFM		218	273	327	382	436	491	545	654	764	873
10"	1-direction	6.1	7.6	9.2	10.7	12.2	13.7	15.3	18.3	21.4	24.4
	2-direction	7.1	8.9	10.7	12.5	14.3	16.1	17.8	21.4	25.0	28.5
	3-direction Short	2.1	2.6	3.1	3.7	4.2	4.7	5.2	6.3	7.3	8.4
	3-direction Long	6.4	8.0	9.6	11.2	12.8	14.4	16.0	19.2	22.4	25.6
	4-direction	2.9	3.6	4.3	5.0	5.7	6.4	7.1	8.6	10.0	11.5
Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
CFM		314	393	471	550	628	707	785	942	1100	1257
12"	1-direction	9.8	12.2	14.7	17.1	19.6	22.0	24.5	29.3	34.2	39.1
	2-direction	9.1	11.4	13.6	15.9	18.2	20.5	22.7	27.3	31.8	36.4
	3-direction Short	3.6	4.5	5.4	6.3	7.2	8.1	9.0	10.8	12.6	14.4
	3-direction Long	8.0	10.0	12.0	14.0	16.0	18.0	20.1	24.1	28.1	32.1
	4-direction	2.1	2.6	3.1	3.7	4.2	4.7	5.2	6.3	7.3	8.4
Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
CFM		428	535	641	748	855	962	1069	1283	1497	1710
14"	1-direction	12.1	15.1	18.2	21.2	24.2	27.3	30.3	36.3	42.4	48.5
	2-direction	8.4	10.5	12.6	14.7	16.8	18.9	21.0	25.2	29.4	33.6
	3-direction Short	3.9	4.9	5.9	6.8	7.8	8.8	9.8	11.7	13.7	15.7
	3-direction Long	7.0	8.8	10.5	12.3	14.0	15.8	17.5	21.0	24.5	28.0
	4-direction	2.8	3.5	4.2	4.9	5.6	6.3	7.0	8.4	9.8	11.2
Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
CFM		559	698	838	977	1117	1257	1396	1676	1955	2234
16"	1-direction	24.3	30.4	36.5	42.5	48.6	54.7	60.8	72.9	85.1	97.2
	2-direction	14.1	17.6	21.1	24.6	28.1	31.7	35.2	42.2	49.3	56.3
	3-direction Short	11.2	14.0	16.8	19.7	22.5	25.3	28.1	33.7	39.3	44.9
	3-direction Long	16.3	20.4	24.5	28.6	32.7	36.7	40.8	49.0	57.1	65.3
	4-direction	3.2	4.0	4.9	5.7	6.5	7.3	8.1	9.7	11.3	12.9

Rezzin Mod Core Throw - Terminal Velocity of 150 FPM

Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
CFM		79	98	118	137	157	177	196	236	275	314
6"	1-direction	1.5	1.9	2.3	2.6	3.0	3.4	3.8	4.2	4.5	4.9
	2-direction	1.7	2.1	2.5	3.0	3.4	3.8	4.2	4.7	5.1	5.5
	3-direction Short	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.6	1.8	1.9
	3-direction Long	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.9	0.9
	4-direction	0.6	0.7	0.8	1.0	1.1	1.2	1.4	1.5	1.7	1.8
Neck Velocity		400 <th>500</th> <th>600</th> <th>700</th> <th>800</th> <th>900</th> <th>1000</th> <th>1200</th> <th>1400</th> <th>1600</th>	500	600	700	800	900	1000	1200	1400	1600
CFM		140	175	209	244	279	314	349	419	489	559
8"	1-direction	1.6	2.1	2.5	2.9	3.3	3.7	4.1	4.5	4.9	5.4
	2-direction	1.7	2.1	2.5	2.9	3.3	3.8	4.2	4.6	5.0	5.4
	3-direction Short	1.3	1.6	1.9	2.3	2.6	2.9	3.2	3.5	3.9	4.2
	3-direction Long	1.5	1.9	2.2	2.6	3.0	3.3	3.7	4.1	4.5	4.8
	4-direction	1.1	1.4	1.6	1.9	2.2	2.5	2.7	3.0	3.3	3.6
Neck Velocity		400 <th>500</th> <th>600</th> <th>700</th> <th>800</th> <th>900</th> <th>1000</th> <th>1200</th> <th>1400</th> <th>1600</th>	500	600	700	800	900	1000	1200	1400	1600
CFM		218	273	327	382	436	491	545	654	764	873
10"	1-direction	3.0	3.7	4.5	5.2	6.0	6.7	7.5	8.2	9.0	9.7
	2-direction	2.8	3.5	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0
	3-direction Short	1.5	1.9	2.2	2.6	3.0	3.4	3.7	4.1	4.5	4.8
	3-direction Long	2.5	3.1	3.7	4.3	5.0	5.6	6.2	6.8	7.4	8.1
	4-direction	2.3	2.9	3.4	4.0	4.6	5.2	5.7	6.3	6.9	7.5
Neck Velocity		400 <th>500</th> <th>600</th> <th>700</th> <th>800</th> <th>900</th> <th>1000</th> <th>1200</th> <th>1400</th> <th>1600</th>	500	600	700	800	900	1000	1200	1400	1600
CFM		314	393	471	550	628	707	785	942	1100	1257
12"	1-direction	3.4	4.3	5.2	6.0	6.9	7.8	8.6	9.5	10.3	11.2
	2-direction	2.1	2.6	3.1	3.6	4.1	4.7	5.2	5.7	6.2	6.7
	3-direction Short	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.7	7.3	7.9
	3-direction Long	2.1	2.6	3.1	3.6	4.1	4.7	5.2	5.7	6.2	6.7
	4-direction	1.7	2.1	2.5	2.9	3.3	3.8	4.2	4.6	5.0	5.4
Neck Velocity		400 <th>500</th> <th>600</th> <th>700</th> <th>800</th> <th>900</th> <th>1000</th> <th>1200</th> <th>1400</th> <th>1600</th>	500	600	700	800	900	1000	1200	1400	1600
CFM		428 <td>535</td> <td>641</td> <td>748</td> <td>855</td> <td>962</td> <td>1069</td> <td>1283</td> <td>1497</td> <td>1710</td>	535	641	748	855	962	1069	1283	1497	1710
14"	1-direction	5.3	6.6	7.9	9.3	10.6	11.9	13.2	14.5	15.9	17.2
	2-direction	3.0	3.8	4.6	5.3	6.1	6.8	7.6	8.3	9.1	9.9
	3-direction Short	2.3	2.9	3.5	4.1	4.6	5.2	5.8	6.4	6.9	7.5
	3-direction Long	2.6	3.2	3.9	4.5	5.1	5.8	6.4	7.1	7.7	8.4
	4-direction	2.2	2.7	3.2	3.8	4.3	4.9	5.4	5.9	6.5	7.0
Neck Velocity		400 <th>500</th> <th>600</th> <th>700</th> <th>800</th> <th>900</th> <th>1000</th> <th>1200</th> <th>1400</th> <th>1600</th>	500	600	700	800	900	1000	1200	1400	1600
CFM		559	698	838	977	1117	1257	1396	1676	1955	2234
16"	1-direction	14.9	18.6	22.3	26.0	29.7	33.5	37.2	40.9	44.6	48.3
	2-direction	7.0	8.7	10.4	12.2	13.9	15.6	17.4	19.1	20.9	22.6
	3-direction Short	5.2	6.5	7.8	9.1	10.4	11.7	13.0	14.3	15.6	16.9
	3-direction Long	6.7	8.4	10.0	11.7	13.4	15.1	16.7	18.4	20.1	21.8
	4-direction	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.6

Series AL270 Adjustable Curved-Blade Register

AL271ML

One-Way

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	30	45	55	65	75	85	95	105	120	130
Ak .107	Throw	3.5	5.5	6.5	7.5	9.0	10.0	11.5	12.5	14.0	15.5
10 x 4	CFM	40	55	65	80	90	105	120	130	145	160
Ak .132	Throw	4.0	6.0	7.0	8.5	9.5	11.0	12.5	13.5	15.5	17.0
10 x 6	CFM	60	80	100	120	140	160	180	200	220	240
Ak .200	Throw	5.0	6.5	8.5	10.0	11.5	13.5	15.0	16.0	18.0	20.0
12 x 6	CFM	70	95	120	140	165	190	210	235	260	280
Ak .235	Throw	5.5	7.0	9.0	10.5	12.5	14.5	16.0	18.0	20.0	22.0
10 x 8	CFM	80	105	130	160	185	210	240	265	290	315
Ak .264	Throw	5.5	7.5	9.5	11.5	13.0	15.0	17.0	19.0	21.0	23.0
12 x 8	CFM	95	130	160	190	225	255	290	320	350	385
Ak .320	Throw	6.0	8.5	10.5	12.5	14.5	16.5	19.0	21.0	23.0	25.0
14 x 8	CFM	110	145	180	220	255	290	330	365	400	435
Ak .364	Throw	6.5	8.5	11.0	13.0	15.5	17.5	20.0	22.0	24.0	26.0

Terminal Velocity of 75 FPM

AL272ML

Two-Way

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	30	45	55	65	75	85	95	105	120	130
Ak .107	Throw	2.5	4.0	4.5	5.5	6.5	7.0	8.0	9.0	10.0	11.0
10 x 4	CFM	40	55	65	80	90	105	120	130	145	160
Ak .132	Throw	3.0	4.0	5.0	6.0	6.5	8.0	9.0	9.5	11.0	12.0
10 x 6	CFM	60	80	100	120	140	160	180	200	220	240
Ak .200	Throw	3.5	4.5	6.0	7.0	8.5	9.5	10.5	12.0	13.0	14.0
12 x 6	CFM	70	95	120	140	165	190	210	235	260	280
Ak .235	Throw	4.0	5.0	6.5	7.5	9.0	10.0	11.5	12.5	14.0	15.0
10 x 8	CFM	80	105	130	160	185	210	240	265	290	315
Ak .264	Throw	4.0	5.5	6.5	8.0	9.5	10.5	12.0	13.5	14.5	16.0
12 x 8	CFM	95	130	160	190	225	255	290	320	350	385
Ak .320	Throw	4.5	6.0	7.5	8.5	10.5	11.5	13.5	14.5	16.0	18.0
14 x 8	CFM	110	145	180	220	255	290	330	365	400	435
Ak .364	Throw	4.5	6.0	7.5	9.5	11.0	12.5	14.0	15.5	17.0	19.0

Terminal Velocity of 75 FPM

AL273ML

Three-Way

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
10 x 6	Total CFM	60	80	100	120	140	160	180	200	220	240
Ak .200	CFM L/S	22/19	29/26	36/32	43/38	50/45	58/51	65/58	72/64	79/70	86/77
	Throw L/S	3.0/2.0	4.0/4.0	5.0/4.5	6.0/5.0	7.0/6.5	8.0/7.5	9.0/8.5	10.0/9.5	11.0/10.5	12.0/11.5
8 x 8	Total CFM	65	85	110	130	150	170	195	215	235	260
Ak .215	CFM L/S	30/18	39/23	50/30	60/35	68/41	78/46	89/53	98/58	108/64	119/70
	Throw L/S	3.5/3.0	4.5/3.5	6.0/4.5	7.0/5.5	8.0/6.5	9.5/7.0	10.5/8.0	11.5/9.0	13.0/10.0	14.0/11.0
12 x 6	Total CFM	70	95	120	140	165	190	210	235	260	280
Ak .235	CFM L/S	21/25	28/33	36/42	42/49	49/58	57/67	63/74	70/82	77/91	83/98
	Throw L/S	3.0/3.0	4.0/4.0	5.0/5.5	6.0/6.5	7.0/7.5	8.0/8.5	9.0/9.5	9.5/10.5	10.5/11.5	11.5/12.5
10 x 10	Total CFM	100	130	165	200	230	265	295	330	365	395
Ak .330	CFM L/S	36/32	47/42	59/63	72/64	83/74	95/85	106/94	119/106	131/117	142/126
	Throw L/S	4.0/3.5	5.0/4.5	6.5/6.0	7.5/7.0	9.0/8.5	10.0/9.5	11.0/10.5	12.5/12.0	14.0/13.0	15.0/14.0

Terminal Velocity of 75 FPM

AL274ML

Four-Way

Face Velocity		300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 8	Total CFM	65	85	110	130	150	170	195	215	235	260
Ak .215	CFM L/S	15/18	20/23	25/30	30/35	35/41	39/46	45/53	49/58	54/64	60/70
	Throw L/S	2.5/3.0	3.5/3.5	4.0/4.5	5.0/5.5	6.0/6.5	6.5/7.0	7.5/8.0	8.0/9.0	9.0/10.0	10.0/11.0
10 x 10	Total CFM	100	130	165	200	230	265	295	330	365	395
Ak .330	CFM L/S	18/32	24/42	30/53	36/64	42/74	48/85	53/94	60/106	66/117	71/126
	Throw L/S	2.5/3.5	3.5/4.5	4.5/6.0	5.5/7.0	6.5/8.5	7.0/9.5	8.0/10.5	9.0/12.0	10.0/13.0	10.5/14.0
12 x 12	Total CFM	135	180	225	270	315	360	405	450	495	540
Ak .452	CFM L/S	20/47	27/63	34/79	40/95	47/111	54/126	61/142	67/158	74/174	81/190
	Throw L/S	2.5/4.0	3.5/5.5	4.5/7.0	5.5/8.5	6.5/10.0	7.5/11.0	8.5/12.5	9.0/14.0	10.0/15.5	11.0/17.0

Terminal Velocity of 75 FPM



AL278ML Adjustable Fin Register

Deflection A

Face Velocity	300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss	.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	45	60	80	95	110	125	140	155	170
Ak .156	Throw	5.0	6.5	8.5	10.0	12.0	13.0	15.0	16.0	18.0
10 x 4	CFM	60	80	100	120	140	160	180	200	220
Ak .198	Throw	6.0	7.5	9.5	12.0	13.0	15.0	17.0	19.0	22.0
12 x 4	CFM	70	95	120	145	170	190	215	240	265
Ak .240	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0
10 x 6	CFM	95	125	155	190	220	250	280	315	345
Ak .313	Throw	7.0	9.0	12.0	14.0	16.0	19.0	21.0	23.0	26.0
12 x 6	CFM	115	150	190	225	265	305	340	380	415
Ak .379	Throw	8.0	10.0	13.0	15.0	18.0	21.0	23.0	26.0	31.0
10 x 8	CFM	130	170	215	255	300	340	385	425	470
Ak .425	Throw	8.0	11.0	14.0	16.0	19.0	21.0	24.0	27.0	30.0
14 x 6	CFM	135	180	225	270	310	355	400	445	490
Ak .446	Throw	8.0	11.0	14.0	17.0	19.0	22.0	25.0	28.0	33.0
12 x 8	CFM	160	200	265	320	370	425	475	530	585
Ak .530	Throw	9.0	11.0	15.0	18.0	21.0	24.0	27.0	30.0	36.0
14 x 8	CFM	185	250	310	370	435	495	560	620	680
Ak .620	Throw	10.0	13.0	16.0	20.0	23.0	26.0	30.0	33.0	39.0

Terminal Velocity of 75 FPM

Deflection C

Face Velocity	300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss	.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	40	55	70	85	100	115	125	140	155
Ak .141	Throw	3.5	5.0	6.5	7.5	9.0	10.0	11.0	13.0	14.0
10 x 4	CFM	55	70	90	105	125	140	160	180	195
Ak .178	Throw	4.0	5.5	7.0	8.5	10.0	11.0	13.0	14.0	16.0
12 x 4	CFM	65	85	110	130	150	175	195	215	240
Ak .216	Throw	4.5	6.0	8.0	9.5	11.0	13.0	14.0	16.0	19.0
10 x 6	CFM	85	115	140	170	195	225	255	280	310
Ak .282	Throw	5.5	7.5	9.0	11.0	12.0	14.0	16.0	18.0	20.0
12 x 6	CFM	105	135	170	205	240	275	310	340	375
Ak .342	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0
10 x 8	CFM	115	155	195	235	275	310	350	390	430
Ak .390	Throw	6.0	8.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0
14 x 6	CFM	125	165	205	245	290	330	370	410	455
Ak .412	Throw	7.0	9.0	11.0	13.0	16.0	18.0	20.0	22.0	24.0
12 x 8	CFM	140	190	235	280	330	375	425	470	515
Ak .470	Throw	7.0	9.0	12.0	14.0	16.0	19.0	21.0	23.0	25.0
14 x 8	CFM	165	220	275	330	385	440	495	550	605
Ak .550	Throw	8.0	10.0	13.0	15.0	18.0	20.0	23.0	25.0	30.0

Terminal Velocity of 75 FPM

Deflection E

Face Velocity	300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss	.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	40	50	65	75	90	100	115	125	140
Ak .127	Throw	3.0	4.0	5.0	5.5	7.0	7.5	8.5	9.5	11.0
10 x 4	CFM	50	65	80	95	115	130	145	160	180
Ak .162	Throw	3.0	4.5	5.5	6.5	7.5	8.5	9.5	11.0	13.0
12 x 4	CFM	60	80	100	120	140	160	175	195	215
Ak .197	Throw	4.0	4.5	6.0	7.5	8.5	10.0	11.0	12.0	13.0
10 x 6	CFM	75	105	130	155	180	205	230	255	285
Ak .257	Throw	4.0	5.5	7.5	8.5	9.5	11.0	12.0	14.0	15.0
12 x 6	CFM	95	125	155	185	220	250	280	310	340
Ak .311	Throw	4.5	6.0	7.5	9.0	11.0	12.0	14.0	15.0	17.0
10 x 8	CFM	105	140	175	210	245	280	315	350	385
Ak .350	Throw	5.0	6.0	8.0	10.0	11.0	13.0	14.0	16.0	19.0
14 x 6	CFM	110	145	185	220	255	290	330	365	400
Ak .365	Throw	5.5	6.5	8.5	10.0	11.0	13.0	15.0	16.0	20.0
12 x 8	CFM	130	175	220	260	305	350	390	435	480
Ak .435	Throw	5.0	7.0	9.0	11.0	13.0	15.0	16.0	18.0	20.0
14 x 8	CFM	155	205	255	305	355	410	460	510	560
Ak .510	Throw	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	23.0

Terminal Velocity of 75 FPM

Deflection G

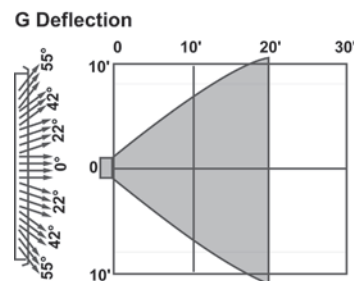
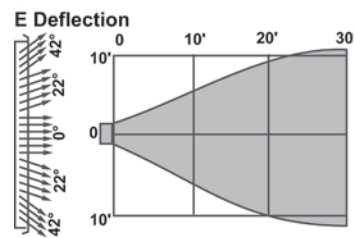
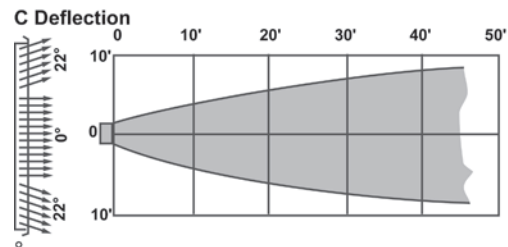
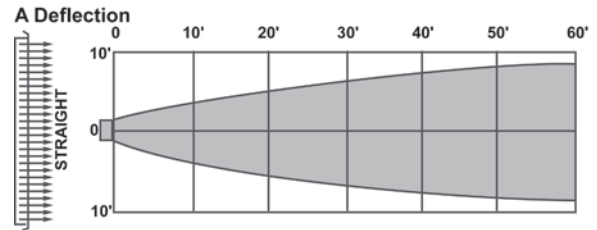
Face Velocity	300	400	500	600	700	800	900	1000	1100	1200
Pressure Loss	.006	.010	.016	.022	.031	.040	.050	.062	.075	.090
8 x 4	CFM	35	45	60	70	85	95	105	120	130
Ak .118	Throw	2.0	2.5	3.5	4.0	5.0	5.5	6.0	6.5	7.5
10 x 4	CFM	45	60	75	90	105	120	135	150	165
Ak .149	Throw	2.0	3.0	3.5	4.5	5.0	6.0	6.5	7.5	8.0
12 x 4	CFM	55	70	90	110	125	145	165	180	200
Ak .181	Throw	2.5	3.0	4.0	5.0	5.5	6.5	7.5	8.0	9.0
10 x 6	CFM	70	95	120	140	165	190	210	235	260
Ak .236	Throw	3.0	4.0	5.0	5.5	6.5	7.5	8.5	9.5	10.0
12 x 6	CFM	85	115	145	170	200	230	255	285	315
Ak .286	Throw	3.0	4.0	5.0	6.0	7.0	8.5	9.0	10.0	11.0
10 x 8	CFM	95	130	160	190	225	255	290	320	350
Ak .320	Throw	3.0	4.5	5.5	6.5	7.5	8.5	10.0	11.0	12.0
14 x 6	CFM	100	135	170	200	235	270	300	335	370
Ak .336	Throw	3.5	4.5	5.5	6.5	8.0	9.0	10.0	11.0	12.0
12 x 8	CFM	120	160	200	235	275	315	355	395	435
Ak .395	Throw	3.5	5.0	6.0	7.0	8.0	10.0	11.0	12.0	13.0
14 x 8	CFM	140	185	230	275	320	370	415	460	505
Ak .460	Throw	4.0	5.5	6.5	8.0	9.0	10.5	11.5	13.0	14.5

Terminal Velocity of 75 FPM

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



PERFORMANCE DATA—LIGHT COMMERCIAL

90H / 90V / AL90H / AL90V Single-Deflection Supply

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

								NC-20		NC-30		NC-40	
Nom. Duct Size (in.)	Nom. Duct Area (ft²)	Core Area (ft²)	Core Vel.	300	400	500	600	700	800	1000	1200	1400	
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	
			0°	0.016	0.029	0.046	0.066	0.090	0.117	0.183	0.263	0.358	
			Total 22.5° Press. 45°	0.018	0.033	0.051	0.074	0.100	0.131	0.204	0.294	0.401	
				0.028	0.049	0.077	0.111	0.152	0.198	0.309	0.445	0.606	
6x6	0.25	0.19	cfm	57	76	95	114	133	152	190	228	266	
			NC	-	-	-	15	20	24	31	36	41	
			0°	5-7-14	7-10-16	8-12-18	10-14-20	12-15-21	13-16-23	15-18-25	16-20-28	17-21-30	
			Throw 22.5° (ft) 45°	4-6-11 2-3-6	5-8-12 3-4-7	6-10-14 4-6-8	8-11-15 4-6-9	9-12-16 5-7-10	10-12-18 6-7-10	11-14-20 7-8-11	12-15-22 7-9-12	13-16-23 8-10-13	
8x6	0.33	0.26	cfm	78	104	130	156	182	208	260	312	364	
			NC	-	-	11	17	21	25	32	38	42	
			0°	5-9-16	8-12-19	10-15-21	12-16-23	14-18-25	15-19-27	17-21-30	19-23-32	20-25-35	
			Throw 22.5° (ft) 45°	4-7-13 2-4-7	6-9-15 3-5-8	8-11-16 4-7-9	9-13-18 5-7-10	11-14-19 6-8-11	12-15-21 7-8-12	13-16-23 8-9-13	15-18-25 8-10-15	16-19-27 9-11-16	
10x6	0.42	0.34	cfm	102	136	170	204	238	272	340	408	476	
			NC	-	-	12	18	23	27	33	39	43	
			0°	6-10-19	9-13-21	11-17-24	13-19-26	16-20-28	18-21-30	20-24-34	21-26-37	23-28-40	
			Throw 22.5° (ft) 45°	5-8-14 3-4-8	7-10-17 4-6-10	9-13-19 5-7-11	10-14-20 6-8-12	12-16-22 7-9-13	14-17-23 8-10-14	15-19-26 9-11-15	17-20-29 10-12-17	18-22-31 10-13-18	
8x8	0.44	0.37	cfm	111	148	185	222	259	296	370	444	518	
			NC	-	-	13	18	23	27	34	39	44	
			0°	6-10-19	9-14-22	12-17-25	14-19-27	16-21-30	18-22-32	20-25-35	22-27-39	24-30-42	
			Throw 22.5° (ft) 45°	5-8-15 3-5-9	7-11-17 4-6-10	9-13-19 5-8-11	11-15-21 6-9-12	13-16-23 7-9-13	14-17-25 8-10-14	16-19-27 9-11-16	17-21-30 10-12-17	19-23-32 11-13-19	
12x6	0.50	0.41	cfm	123	164	205	246	287	328	410	492	574	
			NC	-	-	13	19	23	27	34	39	44	
			0°	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	21-26-37	24-29-41	25-31-44	
			Throw 22.5° (ft) 45°	5-8-16 3-5-9	8-11-18 4-7-11	9-14-20 5-8-12	11-16-22 7-9-13	13-17-24 8-10-14	15-18-26 9-11-15	17-20-29 10-12-17	18-22-32 11-13-18	20-24-34 11-14-20	
14x6	0.58	0.48	cfm	144	192	240	288	336	384	480	576	672	
			NC	-	-	14	19	24	28	35	40	45	
			0°	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	23-28-40	25-31-44	28-34-48	
			Throw 22.5° (ft) 45°	6-9-17 3-5-10	8-12-20 5-7-11	10-15-22 6-9-13	12-17-24 7-10-14	14-18-26 8-11-15	16-20-28 9-11-16	18-22-31 10-13-18	20-24-34 11-14-20	21-26-37 12-15-21	
16x6 12x8	0.67	0.57	cfm	171	228	285	342	399	456	570	684	798	
			NC	-	-	15	20	25	29	35	41	45	
			0°	8-13-24	11-17-28	14-22-31	17-24-34	20-26-37	23-28-39	25-31-44	28-34-48	30-37-52	
			Throw 22.5° (ft) 45°	6-10-19 4-6-11	9-13-22 5-8-12	11-17-24 6-10-14	13-19-26 8-11-15	16-20-28 9-12-17	18-22-30 10-12-18	20-24-34 11-14-20	22-26-37 12-15-22	23-28-40 13-17-23	
10x10	0.69	0.59	cfm	177	236	295	354	413	472	590	708	826	
			NC	-	-	15	20	25	29	35	41	46	
			0°	8-13-24	12-18-28	15-22-32	18-24-35	20-26-37	23-28-40	26-32-45	28-35-49	31-37-53	
			Throw 22.5° (ft) 45°	6-10-19 4-6-11	9-14-22 5-8-13	11-17-24 7-10-14	14-19-27 8-11-16	16-20-29 9-12-17	18-22-31 10-13-18	20-24-35 12-14-20	22-27-38 13-16-22	24-29-41 14-17-24	
18x6	0.75	0.63	cfm	189	252	315	378	441	504	630	756	882	
			NC	-	-	15	20	25	29	36	41	46	
			0°	8-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	27-33-46	29-36-51	32-39-55	
			Throw 22.5° (ft) 45°	7-11-20 4-6-11	9-14-23 5-8-13	12-18-25 7-10-15	14-20-28 8-11-16	16-21-30 9-12-17	18-23-32 11-13-19	21-25-36 12-15-21	23-28-39 13-16-23	24-30-42 14-17-25	
20x6 12x10	0.83	0.72	cfm	216	288	360	432	504	576	720	864	1008	
			NC	-	-	16	21	26	30	36	42	46	
			0°	9-15-27	13-19-31	16-24-35	19-27-38	23-29-41	25-31-44	28-35-49	31-38-54	34-41-58	
			Throw 22.5° (ft) 45°	7-11-21 4-7-12	10-15-24 6-9-14	12-19-27 7-11-16	15-21-30 9-12-17	17-23-32 10-13-19	20-24-34 11-14-20	22-27-38 13-16-22	24-30-42 14-17-24	26-32-45 15-19-26	
22x6	0.92	0.77	cfm	231	308	385	462	539	616	770	924	1078	
			NC	-	-	16	21	26	30	37	42	47	
			0°	9-15-28	13-20-32	17-25-36	20-28-40	23-30-43	26-32-46	29-36-51	32-40-56	35-43-60	
			Throw 22.5° (ft) 45°	7-12-22 4-7-13	10-16-25 6-9-15	13-19-28 8-11-16	16-22-31 9-13-18	18-23-33 11-14-19	20-25-35 12-15-21	23-28-40 13-16-23	25-31-43 15-18-25	27-33-47 16-19-27	
24x6 18x8 12x12	1.00	0.88	cfm	264	352	440	528	616	704	880	1056	1232	
			NC	-	-	16	22	26	30	37	43	47	
			0°	10-16-30	14-21-34	18-27-39	21-30-42	25-32-46	28-34-49	31-39-55	34-42-60	37-46-65	
			Throw 22.5° (ft) 45°	8-12-23 4-7-13	11-17-27 6-10-16	14-21-30 8-12-17	17-23-33 10-13-19	19-25-35 11-15-21	22-27-38 13-16-22	24-30-42 14-17-25	27-33-46 16-19-27	29-35-50 17-21-29	
30x6 18x10	1.25	1.11	cfm	333	444	555	666	777	888	1110	1332	1554	
			NC	-	11	17	23	27	31	38	44	48	
			0°	11-18-34	16-24-39	20-30-43	24-34-47	28-36-51	32-39-55	35-43-61	39-47-67	42-51-72	
			Throw 22.5° (ft) 45°	9-14-26 5-8-15	12-19-30 7-11-17	16-23-34 9-14-19	19-26-37 11-15-21	22-28-40 13-16-23	25-30-42 14-17-25	27-34-47 16-19-28	30-37-52 17-21-30	32-40-56 19-23-33	

90H / 90V / AL90H / AL90V Single-Deflection Supply

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

Nom. Duct Size (in.)	Nom. Duct Area (ft²)	Core Area (ft²)	NC-20				NC-30				NC-40				NC-50			
			Core Vel.	300	400	500	600	700	800	1000	1200	1400						
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122						
			0°	0.016	0.029	0.046	0.066	0.090	0.117	0.183	0.263	0.358						
14x14	1.36	1.22	Total 22.5°	0.018	0.033	0.051	0.074	0.100	0.131	0.204	0.294	0.401						
			Press. 45°	0.028	0.049	0.077	0.111	0.152	0.198	0.309	0.445	0.606						
			cfm	366	488	610	732	854	976	1220	1464	1708						
			NC	-	11	18	23	28	32	39	44	49						
36x6 27x8 18x12	1.50	1.35	0°	12-19-35	17-25-41	21-31-45	25-35-50	29-38-54	33-41-57	37-45-64	41-50-70	44-54-76						
			Throw 22.5°	9-15-27	13-20-31	16-24-35	20-27-39	23-29-42	26-31-45	29-35-50	31-39-55	34-42-59						
			(ft) 45°	5-8-16	8-11-18	9-14-20	11-16-22	13-17-24	15-18-26	17-20-29	18-22-32	20-24-34						
			cfm	405	540	675	810	945	1080	1350	1620	1890						
22x10	1.53	1.37	NC	-	12	18	24	28	32	39	44	49						
			0°	12-20-37	18-26-43	22-33-48	26-37-52	31-40-57	35-43-60	39-48-68	43-52-74	46-57-80						
			Throw 22.5°	10-15-29	14-21-33	17-26-37	21-29-41	24-31-44	27-33-47	30-37-52	33-41-57	36-44-62						
			(ft) 45°	6-9-17	8-12-19	10-15-21	12-17-24	14-18-26	16-19-27	18-22-31	19-24-34	21-26-36						
30x8 24x10	1.67	1.49	cfm	447	596	745	894	1043	1192	1490	1788	2086						
			NC	-	12	19	24	29	33	39	45	49						
			0°	13-21-39	19-28-45	23-35-50	28-39-55	32-42-59	37-45-63	41-50-71	45-55-78	48-59-84						
			Throw 22.5°	10-16-30	14-22-35	18-27-39	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65						
42x6 18x14	1.75	1.59	(ft) 45°	6-9-17	8-13-20	10-16-23	13-17-25	15-19-27	16-20-29	18-23-32	20-25-35	22-27-38						
			cfm	477	636	795	954	1113	1272	1590	1908	2226						
			NC	-	12	19	24	29	33	40	45	50						
			0°	13-22-40	19-29-46	24-36-52	29-40-57	34-43-61	38-46-66	42-52-73	46-57-80	50-61-87						
16x16	1.78	1.62	Throw 22.5°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	29-36-51	33-40-57	36-44-62	39-48-67						
			(ft) 45°	6-10-18	9-13-21	11-16-23	13-18-26	15-20-28	17-21-30	19-23-33	21-26-36	23-28-39						
			cfm	486	648	810	972	1134	1296	1620	1944	2268						
			NC	-	12	19	24	29	33	40	45	50						
48x6 36x8 24x12 18x16	2.00	1.82	0°	14-22-41	19-29-47	24-36-52	29-41-57	34-44-62	38-47-66	43-52-74	47-57-81	51-62-88						
			Throw 22.5°	11-17-31	15-22-36	19-28-41	22-31-44	26-34-48	30-36-51	33-41-57	36-44-63	39-48-68						
			(ft) 45°	6-10-18	9-13-21	11-16-24	13-18-26	15-20-28	17-21-30	19-24-33	21-26-36	23-28-39						
			cfm	546	728	910	1092	1274	1456	1820	2184	2548						
18x18	2.25	2.07	NC	-	13	19	25	30	34	40	46	51						
			0°	15-25-46	22-33-53	27-41-59	33-46-65	38-49-70	43-53-75	48-59-84	53-65-92	57-70-99						
			Throw 22.5°	12-19-36	17-25-41	21-32-46	25-36-50	30-38-54	33-41-58	37-46-65	41-50-71	44-54-77						
			(ft) 45°	7-11-21	10-15-24	12-18-27	15-21-29	17-22-31	19-24-34	22-27-38	24-29-41	26-31-45						
42x8 24x14	2.33	2.14	cfm	642	856	1070	1284	1498	1712	2140	2568	2996						
			NC	-	13	20	26	30	34	41	46	51						
			0°	16-25-47	22-33-54	28-42-60	33-47-66	39-50-71	44-54-76	49-60-85	54-66-93	58-71-101						
			Throw 22.5°	12-19-36	17-26-42	22-32-47	26-36-51	30-39-55	34-42-59	38-47-66	42-51-72	45-55-78						
36x10 30x12	2.50	2.29	(ft) 45°	7-11-21	10-15-24	13-19-27	15-21-30	18-23-32	20-24-34	22-27-38	24-30-42	26-32-45						
			cfm	687	916	1145	1374	1603	1832	2290	2748	3206						
			NC	-	14	20	26	30	34	41	47	51						
			0°	16-26-48	23-34-56	29-43-62	34-48-68	40-52-74	45-56-79	51-62-88	56-68-96	60-74-104						
48x8 24x16	2.67	2.46	Throw 22.5°	12-20-37	18-27-43	22-33-48	27-37-53	31-40-57	35-43-61	39-48-68	43-53-75	47-57-81						
			(ft) 45°	7-12-22	10-16-25	13-19-28	16-22-31	18-23-33	20-25-35	23-28-40	25-31-43	27-33-47						
			cfm	738	984	1230	1476	1722	1968	2460	2952	3444						
			NC	-	14	21	26	31	35	41	47	51						
20x20	2.78	2.57	0°	17-27-50	24-36-58	30-45-64	36-50-71	42-54-76	47-58-82	53-64-91	58-71-100	62-76-108						
			Throw 22.5°	13-21-39	18-28-45	23-35-50	28-39-55	32-42-59	36-45-63	41-50-71	45-55-77	48-59-84						
			(ft) 45°	8-12-22	11-16-26	13-20-29	16-22-32	19-24-34	21-26-37	24-29-41	26-32-45	28-34-49						
			cfm	771	1028	1285	1542	1799	2056	2570	3084	3598						
36x12 24x18	3.00	2.75	NC	-	15	21	27	31	35	42	47	52						
			0°	17-27-51	24-37-59	30-46-66	37-51-72	43-55-78	48-59-83	54-66-93	59-72-102	64-78-110						
			Throw 22.5°	13-21-40	19-28-46	24-35-51	28-40-56	33-43-60	37-46-65	42-51-72	46-56-79	49-60-85						
			(ft) 45°	8-12-23	11-16-27	14-21-30	16-23-32	19-25-35	22-27-38	24-30-42	27-32-46	29-35-50						
36x12 24x18	3.00	2.75	cfm	825	1100	1375	1650	1925	2200	2750	3300	3850						
			NC	-	15	21	27	31	35	42	47	52						
			0°	18-28-53	25-38-61	31-47-68	38-53-75	44-57-81	50-61-86	56-68-96	61-75-106	66-81-114						
			Throw 22.5°	14-22-41	20-29-47	24-37-53	29-41-58	34-44-63	39-47-67	43-53-75	47-58-82	51-63-88						
			(ft) 45°	8-13-24	11-17-27	14-21-31	17-24-34	20-26-36	22-27-39	25-31-43	27-34-48	30-36-51						

Performance notes appear at end of table

Recommended Noise Criteria and Face Velocity Ranges are on page 19.



PERFORMANCE DATA—LIGHT COMMERCIAL

90H / 90V / AL90H / AL90V Single-Deflection Supply

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

			NC-20			NC-30			NC-40			NC-50		
Nom. Duct Size (in.)	Nom. Duct Area (ft²)	Core Area (ft²)	Core Vel.	300	400	500	600	700	800	1000	1200	1400		
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122		
			0°	0.016	0.029	0.046	0.066	0.090	0.117	0.183	0.263	0.358		
			Total Press. 22.5° 45°	0.018 0.028	0.033 0.049	0.051 0.077	0.074 0.111	0.100 0.152	0.131 0.198	0.204 0.309	0.294 0.445	0.401 0.606		
48x10 30x16 24x20	3.33	3.11	cfm	933	1244	1555	1866	2177	2488	3110	3732	4354		
			NC	-	15	22	27	32	36	42	48	52		
			0°	19-30-56	27-40-65	33-50-72	40-56-79	47-61-86	53-65-92	59-72-103	65-79-112	70-86-121		
			Throw 22.5° 45° (ft)	15-23-44 8-14-25	21-31-50 12-18-29	26-39-56 15-23-33	31-44-62 18-25-36	36-47-66 21-27-39	41-50-71 24-29-41	46-56-79 27-33-46	50-62-87 29-36-51	54-66-94 32-39-55		
22x22	3.36	3.14	cfm	942	1256	1570	1884	2198	2512	3140	3768	4396		
			NC	-	15	22	27	32	36	42	48	53		
			0°	19-30-56	27-40-65	34-50-73	40-56-80	47-61-86	53-65-92	59-73-103	65-80-113	70-86-122		
			Throw 22.5° 45° (ft)	15-23-44 8-14-25	21-31-50 12-18-29	26-39-56 15-23-33	31-44-62 18-25-36	37-47-67 21-27-39	41-50-71 24-29-41	46-56-80 27-33-46	50-62-87 29-36-51	55-67-94 32-39-55		
42x12 36x14	3.50	3.22	cfm	966	1288	1610	1932	2254	2576	3220	3864	4508		
			NC	-	15	22	27	32	36	43	48	53		
			0°	19-31-57	27-41-66	34-51-74	41-57-81	48-62-87	54-66-93	60-74-104	66-81-114	71-87-123		
			Throw 22.5° 45° (ft)	15-24-44 9-14-26	21-32-51 12-18-30	26-40-57 15-23-33	32-44-63 18-26-36	37-48-68 21-28-39	42-51-72 24-30-42	47-57-81 27-33-47	51-63-89 30-36-51	55-68-96 32-39-56		
24x22	3.67	3.43	cfm	1029	1372	1715	2058	2401	2744	3430	4116	4802		
			NC	-	15	22	28	32	36	43	48	53		
			0°	20-32-59	28-42-68	35-53-76	42-59-83	49-64-90	56-68-96	62-76-108	68-83-118	74-90-127		
			Throw 22.5° 45° (ft)	15-25-46 9-14-27	22-33-53 13-19-31	27-41-59 16-24-34	33-46-65 19-27-38	38-49-70 22-29-41	43-53-75 25-31-43	48-59-83 28-34-48	53-65-91 31-38-53	57-70-99 33-41-57		
30x18	3.75	3.5	cfm	1050	1400	1750	2100	2450	2800	3500	4200	4900		
			NC	-	16	22	28	32	36	43	48	53		
			0°	20-32-60	28-43-69	36-53-77	43-60-84	50-64-91	56-69-97	63-77-109	69-84-119	74-91-129		
			Throw 22.5° 45° (ft)	15-25-46 9-14-27	22-33-53 13-19-31	28-41-60 16-24-35	33-46-65 19-27-38	39-50-71 22-29-41	44-53-75 25-31-44	49-60-84 28-35-49	53-65-92 31-38-54	58-71-100 33-41-58		
48x12 36x16 24x24	4.00	3.75	cfm	1125	1500	1875	2250	2625	3000	3750	4500	5250		
			NC	-	16	22	28	33	37	43	49	53		
			0°	21-33-62	29-44-71	37-55-80	44-62-87	51-67-94	58-71-101	65-80-113	71-87-123	77-94-133		
			Throw 22.5° 45° (ft)	16-26-48 9-15-28	23-34-55 13-20-32	29-43-62 17-25-36	34-48-68 20-28-39	40-52-73 23-30-42	45-55-78 26-32-45	50-62-87 29-36-51	55-68-96 32-39-55	60-73-103 35-42-60		
36x18	4.50	4.22	cfm	1266	1688	2110	2532	2954	3376	4220	5064	5908		
			NC	-	16	23	28	33	37	44	49	54		
			0°	22-35-65	31-47-76	39-59-84	47-65-93	55-71-100	62-76-107	69-84-119	76-93-131	82-100-141		
			Throw 22.5° 45° (ft)	17-27-51 10-16-29	24-36-59 14-21-34	30-45-65 18-26-38	36-51-72 21-29-42	42-55-77 25-32-45	48-59-83 28-34-48	53-65-93 31-38-54	59-72-101 34-42-59	63-77-110 37-45-64		
36x20 30x24	5.00	4.71	cfm	1413	1884	2355	2826	3297	3768	4710	5652	6594		
			NC	-	17	23	29	33	37	44	50	54		
			0°	23-37-69	33-49-80	41-62-89	49-69-98	58-75-106	65-80-113	73-89-126	80-98-138	86-106-149		
			Throw 22.5° 45° (ft)	18-29-54 10-17-31	26-38-62 15-22-36	32-48-69 19-28-40	38-54-76 22-31-44	45-58-82 26-34-48	50-62-87 29-36-51	56-69-98 33-40-57	62-76-107 36-44-62	67-82-116 39-48-67		
42x18	5.25	4.94	cfm	1482	1976	2470	2964	3458	3952	4940	5928	6916		
			NC	-	17	24	29	34	38	44	50	54		
			0°	24-38-71	34-51-82	42-63-91	51-71-100	59-76-108	67-82-116	75-91-129	82-100-142	88-108-153		
			Throw 22.5° 45° (ft)	18-29-55 11-17-32	26-39-63 15-23-37	33-49-71 19-28-41	39-55-78 23-32-45	46-59-84 27-34-49	52-63-90 30-37-52	58-71-100 34-41-58	63-78-110 37-45-64	68-84-118 40-49-69		
28x28	5.44	5.16	cfm	1548	2064	2580	3096	3612	4128	5160	6192	7224		
			NC	-	17	24	29	34	38	45	50	55		
			0°	24-39-72	35-52-84	43-65-93	52-72-102	60-78-110	68-84-118	76-93-132	84-102-145	90-110-156		
			Throw 22.5° 45° (ft)	19-30-56 11-17-33	27-40-65 16-23-38	33-50-72 19-29-42	40-56-79 23-33-46	47-61-86 27-35-50	53-65-92 31-38-53	59-72-102 34-42-59	65-79-112 38-46-65	70-86-121 41-50-70		
42x20 30x28	5.83	5.51	cfm	1653	2204	2755	3306	3857	4408	5510	6612	7714		
			NC	-	17	24	30	34	38	45	50	55		
			0°	25-40-75	36-54-86	45-67-96	54-75-106	62-81-114	70-86-122	79-96-136	86-106-149	93-114-161		
			Throw 22.5° 45° (ft)	19-31-58 11-18-34	28-41-67 16-24-39	35-52-75 20-30-43	41-58-82 24-34-48	48-63-88 28-36-51	55-67-95 32-39-55	61-75-106 35-43-61	67-82-116 37-48-67	72-88-125 42-51-73		
48x18 36x24	6.00	5.66	cfm	1698	2264	2830	3396	3962	4528	5660	6792	7924		
			NC	-	18	24	30	34	38	45	50	55		
			0°	25-41-76	36-54-87	45-68-98	54-76-107	63-82-116	71-87-124	80-98-138	87-107-152	94-116-164		
			Throw 22.5° 45° (ft)	20-32-59 11-18-34	28-42-68 16-24-39	35-53-76 20-31-44	42-59-83 24-34-48	49-63-90 28-37-52	55-68-96 32-39-56	62-76-107 36-44-62	68-83-117 39-48-68	73-90-127 43-52-74		
30x30	6.25	5.94	cfm	1782	2376	2970	3564	4158	4752	5940	7128	8316		
			NC	-	18	24	30	34	38	45	51	55		
			0°	26-42-78	37-56-90	46-69-100	56-78-110	65-84-119	73-90-127	82-100-142	90-110-155	97-119-168		
			Throw 22.5° 45° (ft)	20-32-60 12-19-35	29-43-69 17-25-40	36-54-78 21-31-45	43-60-85 25-35-49	50-65-92 29-38-53	57-69-98 33-40-57	63-78-110 37-45-64	69-85-120 40-49-70	75-92-130 44-53-75		

90H / 90V / AL90H / AL90V Single-Deflection Supply

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

Nom. Duct Size (in.)	Nom. Duct Area (ft ²)	Core Area (ft ²)	NC-20		NC-30		NC-40		NC-50			
			Core Vel.	300	400	500	600	700	800	1000	1200	1400
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122
			0°	0.016	0.029	0.046	0.066	0.090	0.117	0.183	0.263	0.358
			Total 22.5°	0.018	0.033	0.051	0.074	0.100	0.131	0.204	0.294	0.401
			Press. 45°	0.028	0.049	0.077	0.111	0.152	0.198	0.309	0.445	0.606
42x24 36x28	7.00	6.66	cfm	1998	2664	3330	3996	4662	5328	6660	7992	9324
			NC	-	18	25	30	35	39	46	51	56
			0°	28-44-82	39-59-95	49-74-106	59-82-116	69-89-126	77-95-134	87-106-150	95-116-164	102-126-178
			Throw 22.5°	21-34-64	30-46-74	38-57-82	46-64-90	53-69-97	60-74-104	67-82-116	74-90-127	79-97-138
			(ft) 45°	12-20-37	18-26-43	22-33-48	26-37-52	31-40-56	35-43-60	39-48-68	43-52-74	46-56-80
46x22	7.03	6.68	cfm	2004	2672	3340	4008	4676	5344	6680	8016	9352
			NC	-	18	25	30	35	39	46	51	56
			0°	28-44-82	39-59-95	49-74-106	59-82-116	69-89-126	78-95-134	87-106-150	95-116-165	103-126-178
			Throw 22.5°	21-34-64	30-46-74	38-57-82	46-64-90	53-69-97	60-74-104	67-82-116	74-90-128	80-97-138
			(ft) 45°	12-20-37	18-27-43	22-33-48	27-37-52	31-40-57	35-43-60	39-48-68	43-52-74	46-57-80
32x32	7.11	6.78	cfm	2034	2712	3390	4068	4746	5424	6780	8136	9492
			NC	-	18	25	30	35	39	46	51	56
			0°	28-45-83	40-59-96	49-74-107	59-83-117	69-90-127	78-96-135	87-107-151	96-117-166	103-127-179
			Throw 22.5°	22-34-64	31-46-74	38-57-83	46-64-91	54-69-98	61-74-105	68-83-117	74-91-129	80-98-139
			(ft) 45°	12-20-37	18-27-43	22-33-48	27-37-53	31-40-57	35-43-61	39-48-68	43-53-75	47-57-81
36x30	7.50	7.16	cfm	2148	2864	3580	4296	5012	5728	7160	8592	10024
			NC	-	19	25	31	35	39	46	51	56
			0°	29-46-85	41-61-98	51-76-110	61-85-121	71-92-130	80-98-139	90-110-156	98-121-170	106-130-184
			Throw 22.5°	22-35-66	32-47-76	39-59-85	47-66-93	55-71-101	62-76-108	70-85-121	76-93-132	82-101-143
			(ft) 45°	13-21-38	18-27-44	23-34-50	27-38-54	32-41-59	36-44-63	40-50-70	44-54-77	48-59-83
48x24 36x32	8.00	7.63	cfm	2289	3052	3815	4578	5341	6104	7630	9156	10682
			NC	-	19	25	31	35	39	46	52	56
			0°	29-47-88	42-63-102	52-79-114	63-88-124	73-95-134	83-102-144	93-114-161	102-124-176	110-134-190
			Throw 22.5°	23-37-68	33-49-79	41-61-88	49-68-96	57-74-104	64-79-111	72-88-124	79-96-136	85-104-147
			(ft) 45°	13-21-40	19-28-46	24-35-51	28-40-56	33-43-60	37-46-65	42-51-72	46-56-79	49-60-86
34x34	8.03	7.68	cfm	2304	3072	3840	4608	5376	6144	7680	9216	10752
			NC	-	19	25	31	36	40	46	52	56
			0°	30-47-88	42-63-102	53-79-114	63-88-125	74-95-135	83-102-144	93-114-161	102-125-176	110-135-191
			Throw 22.5°	23-37-68	33-49-79	41-61-88	49-68-97	57-74-104	64-79-112	72-88-125	79-97-137	85-104-148
			(ft) 45°	13-21-40	19-28-46	24-36-51	28-40-56	33-43-61	37-46-65	42-51-73	46-56-79	50-61-86
36x34	8.50	8.14	cfm	2442	3256	4070	4884	5698	6512	8140	9768	11396
			NC	-	19	26	31	36	40	46	52	56
			0°	30-49-91	43-65-105	54-81-117	65-91-128	76-98-139	86-105-148	96-117-166	105-128-182	113-139-196
			Throw 22.5°	24-38-70	34-50-81	42-63-91	50-70-100	59-76-108	66-81-115	74-91-129	81-100-141	88-108-152
			(ft) 45°	14-22-41	20-29-47	24-37-53	29-41-58	34-44-62	39-47-67	43-53-75	47-58-82	51-62-88
42x30	8.75	8.38	cfm	2514	3352	4190	5028	5866	6704	8380	10056	11732
			NC	11	19	26	31	36	40	47	52	57
			0°	31-49-92	44-66-106	55-82-119	66-92-130	77-100-141	87-106-151	97-119-168	106-130-184	115-141-199
			Throw 22.5°	24-38-71	34-51-82	43-64-92	51-71-101	60-77-109	67-82-117	75-92-130	82-101-143	89-109-154
			(ft) 45°	14-22-41	20-30-48	25-37-54	30-41-59	35-45-63	39-48-68	44-54-76	48-59-83	52-63-90
36x36	9.00	8.63	cfm	2589	3452	4315	5178	6041	6904	8630	10356	12082
			NC	11	19	26	31	36	40	47	52	57
			0°	31-50-94	45-67-108	56-84-121	67-94-132	78-101-143	88-108-153	99-121-171	108-132-187	117-143-202
			Throw 22.5°	24-39-72	35-52-84	43-65-94	52-72-103	61-78-111	68-84-118	76-94-132	84-103-145	90-111-157
			(ft) 45°	14-23-42	20-30-49	25-38-54	30-42-60	35-45-64	40-49-69	44-54-77	49-60-84	53-64-91
42x34 48x30	10.00	9.6	cfm	2880	3840	4800	5760	6720	7680	9600	11520	13440
			NC	11	20	26	32	36	40	47	53	57
			0°	33-53-99	47-71-114	59-88-127	71-99-140	82-107-151	93-114-161	104-127-180	114-140-197	123-151-213
			Throw 22.5°	26-41-76	36-55-88	46-68-99	55-76-108	64-83-117	72-88-125	81-99-140	88-108-153	95-117-165
			(ft) 45°	15-24-44	21-32-51	26-40-57	32-44-63	37-48-68	42-51-73	47-57-81	51-63-89	55-68-96
38x38	10.03	9.64	cfm	2892	3856	4820	5784	6748	7712	9640	11568	13496
			NC	11	20	26	32	36	40	47	53	57
			0°	33-53-99	47-71-114	59-88-128	71-99-140	83-107-151	93-114-161	104-128-181	114-140-198	123-151-214
			Throw 22.5°	26-41-77	37-55-88	46-69-99	55-77-108	64-83-117	72-88-125	81-99-140	88-108-153	96-117-166
			(ft) 45°	15-24-44	21-32-51	27-40-57	32-44-63	37-48-68	42-51-73	47-57-81	51-63-89	55-68-96
42x36	10.50	10.1	cfm	3030	4040	5050	6060	7070	8080	10100	12120	14140
			NC	11	20	27	32	37	41	47	53	57
			0°	34-54-101	48-72-117	60-91-131	72-101-143	85-109-155	95-117-165	107-131-185	117-143-202	126-155-219
			Throw 22.5°	26-42-78	37-56-91	47-70-101	56-78-111	65-85-120	74-91-128	83-101-143	91-111-157	98-120-169
			(ft) 45°	15-24-46	22-33-53	27-41-59	33-46-64	38-49-70	43-53-74	48-59-83	53-64-91	57-70-98
46x34	10.86	10.45	cfm	3135	4180	5225	6270	7315	8360	10450	12540	14630
			NC	11	20	27	32	37	41	47	53	58
			0°	34-55-103	49-74-119	61-92-133	74-103-146	86-111-157	97-119-168	109-133-188	119-146-206	128-157-222
			Throw 22.5°	27-43-80	38-57-92	48-71-103	57-80-113	67-86-122	75-92-130	84-103-146	92-113-160	99-122-172
			(ft) 45°	16-25-46	22-33-53	28-41-60	33-46-66	39-50-71	44-53-76	49-60-85	53-66-93	58-71-100

Performance notes appear at end of table

Recommended Noise Criteria and Face Velocity Ranges are on page 19.



PERFORMANCE DATA—LIGHT COMMERCIAL

90H / 90V / AL90H / AL90V Single-Deflection Supply

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

Nom. Duct Size (in.)	Nom. Duct Area (ft ²)	Core Area (ft ²)	NC-20		NC-30		NC-40		NC-50	
			Core Vel.	300	400	500	600	700	800	1000
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062
			0°	0.016	0.029	0.046	0.066	0.090	0.117	0.183
Total	22.5°	Press.	45°	0.018	0.033	0.051	0.074	0.100	0.131	0.204
				0.028	0.049	0.077	0.111	0.152	0.198	0.309
42x38	11.08	10.67	cfm	3201	4268	5335	6402	7469	8536	10670
			NC	12	20	27	32	37	41	48
			0°	35-56-104	50-74-120	62-93-134	74-104-147	87-112-159	98-120-170	110-134-190
			Throw 22.5°	27-43-81	38-58-93	48-72-104	58-81-114	67-87-123	76-93-132	85-104-147
40x40	11.11	10.7	(ft) 45°	16-25-47	22-34-54	28-42-60	34-47-66	39-51-71	44-54-76	49-60-85
			0°	35-56-104	50-75-120	62-93-134	75-104-147	87-113-159	98-120-170	110-134-190
			Throw 22.5°	27-43-81	39-58-93	48-72-104	58-81-114	67-87-123	76-93-132	85-104-147
			(ft) 45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	49-61-86
48x36	12.00	11.57	cfm	3471	4628	5785	6942	8099	9256	11570
			NC	12	21	27	33	37	41	48
			0°	36-58-108	52-78-125	65-97-140	78-108-153	90-117-165	102-125-177	114-140-198
			Throw 22.5°	28-45-84	40-60-97	50-75-108	60-84-119	70-91-128	79-97-137	88-108-153
42x42	12.25	11.82	(ft) 45°	16-26-49	23-35-56	29-44-63	35-49-69	41-53-74	46-56-80	51-63-89
			0°	37-59-109	52-78-126	65-98-141	78-109-155	91-118-167	103-126-179	115-141-200
			Throw 22.5°	28-46-85	40-61-98	51-76-110	61-85-120	71-92-130	80-98-139	89-110-155
			(ft) 45°	16-26-49	24-35-57	29-44-64	35-49-70	41-53-75	46-57-80	52-64-90
44x44	13.44	12.99	cfm	3897	5196	6495	7794	9093	10392	12990
			NC	12	21	28	33	38	42	48
			0°	38-62-115	55-82-133	68-103-148	82-115-162	96-124-175	108-133-187	121-148-210
			Throw 22.5°	30-48-89	42-64-103	53-80-115	64-89-126	74-96-136	84-103-145	94-115-162
48x42	14.00	13.54	(ft) 45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	54-67-94
			0°	39-63-117	56-84-135	70-105-151	84-117-166	98-127-179	110-135-191	124-151-214
			Throw 22.5°	30-49-91	43-65-105	54-81-117	65-91-128	76-98-139	86-105-148	96-117-166
			(ft) 45°	18-28-53	25-38-61	31-47-68	38-53-75	44-57-81	50-61-86	56-68-96
46x46	14.69	14.22	cfm	4266	5688	7110	8532	9954	11376	14220
			NC	13	21	28	33	38	42	49
			0°	40-64-120	57-86-139	72-107-155	86-120-170	100-130-183	113-139-196	127-155-219
			Throw 22.5°	31-50-93	44-67-107	56-83-120	67-93-132	78-101-142	88-107-152	98-120-170
48x46	15.33	14.85	(ft) 45°	18-29-54	26-39-62	32-48-70	39-54-76	45-58-83	51-62-88	57-70-99
			0°	41-66-123	59-88-142	73-110-158	88-123-174	102-133-187	116-142-200	129-158-224
			Throw 22.5°	32-51-95	45-68-110	57-85-123	68-95-134	79-103-145	90-110-155	100-123-174
			(ft) 45°	18-30-55	26-40-64	33-49-71	40-55-78	46-60-84	52-64-90	58-71-101
48x48	16.00	15.50	cfm	4650	6200	7750	9300	10850	12400	15500
			NC	13	22	28	34	38	42	49
			0°	42-67-125	60-90-145	75-112-162	90-125-177	105-135-192	118-145-205	132-162-229
			Throw 22.5°	33-52-97	46-70-112	58-87-125	70-97-137	81-105-148	92-112-159	102-125-177
48x48	16.00	15.50	(ft) 45°	19-30-56	27-40-65	34-50-73	40-56-80	47-61-86	53-65-92	59-73-103

- 0°, 22.5° & 45° represent blade deflection angles
- Performance data is based on duct sizes in bold, the performance varies slightly for duct sizes not shown in bold
- See the section, Engineering Guidelines, for drop information when selecting larger supply grilles for cooling purposes
- See the "Performance Notes" portion in this section for notes and correction factors

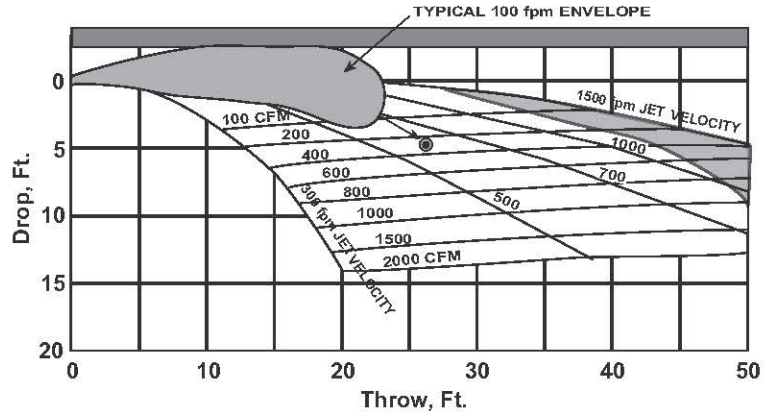
- See the section, Engineering Guidelines, for catalog throw information
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10⁻¹² watts

90H / 90V / AL90H / AL90V Single-Deflection Supply

PERFORMANCE NOTES

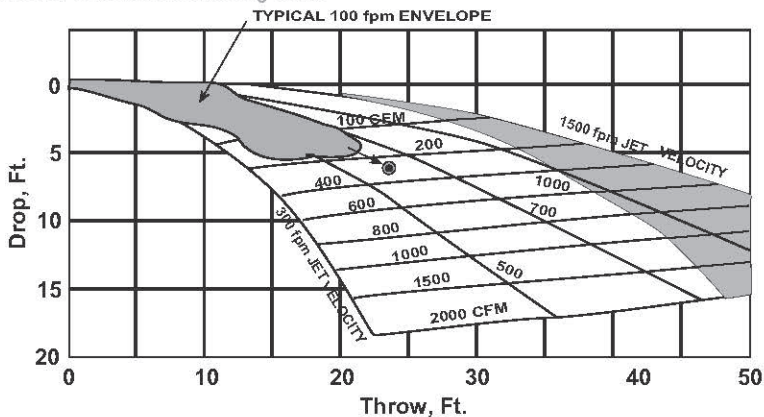
- Performance data includes damper
- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- All pressures are in inches of water
- Core velocities are in feet per minute
- Throw values given are for isothermal terminal velocities of 150, 100 and 50 fpm
- Each NC value represents the noise criterion curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7. Each NC value is based on a room absorption of 10 dB, re 10^{-12} watts. Each NC value is further based on grille operating at a 0° deflection. Settings of $22\frac{1}{2}^\circ$ or 45° , increase the stated sound levels by 1 or 7 NC, respectively.
- Bold dividing lines on H12-H16 denote ranges of NC values
- The stated deflection settings refer to the horizontal setting of the blade's deflection angle. For a 20° upward deflection, use the throw rating for the 0° setting and the total pressure for the $22\frac{1}{2}^\circ$ horizontal setting.
- Dash (—) in space indicates NC value less than 10
- For additional information concerning drop and throw, see the Engineering Guidelines section of this catalog

Drop Versus Throw Showing Ceiling Effect - $20^\circ\text{F } \Delta T$ Cooling



(Side view of air jet leaving wall mounted grille)

Drop Versus Throw without Ceiling Effect



(Side view of air jet leaving wall mounted grille)

VARIABLE AIR VOLUME

APPLICATIONS

All supply grilles can be applied to variable air volume systems with excellent results. For detailed selection methods, consult your Titus representative or the Engineering Guidelines section of this catalog.

Correction Factors for Supply Grilles

Damper	A_k / A_c	Throw	Total Pressure	NC
With	0.77	1.00	1.00	0
Without	0.82	0.98	0.88	-2

Note: Throw and total pressure corrections are multipliers. The NC correction is an addition. A_k is the flow factor. A_c is the core area from the main table.

90H / 90V / AL90H / AL90V Single-Deflection Supply

HORIZONTAL DEFLECTION (SPREAD)

SUPPLY GRILLES

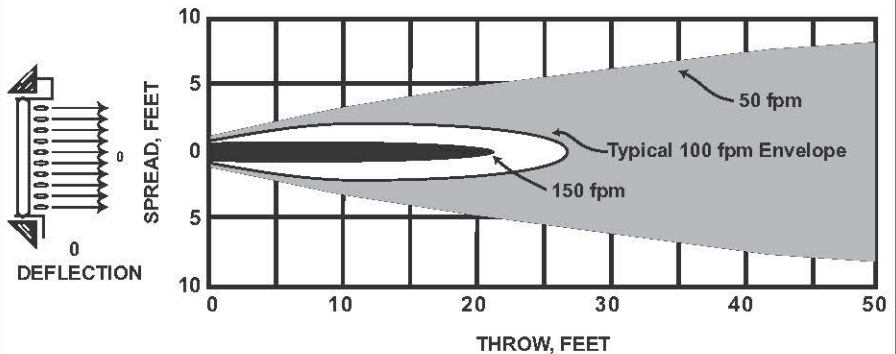
The figures depicting deflection, throw and drop are based on actual tests conducted by Titus. They show the relationship of spread to throw for a typical high side-wall supply outlet selection.

Notice the outer shaded area represents the 50 fpm isovel, the white area, the 100 fpm isovel, and the inner area, the 150 fpm isovel.

The spread angle also affects the airstream drop amount. Always consider for any given temperature, volume and core velocity; the wider spread results in a smaller drop. See section, Engineering Guidelines, for more drop, throw and spread relationship information.

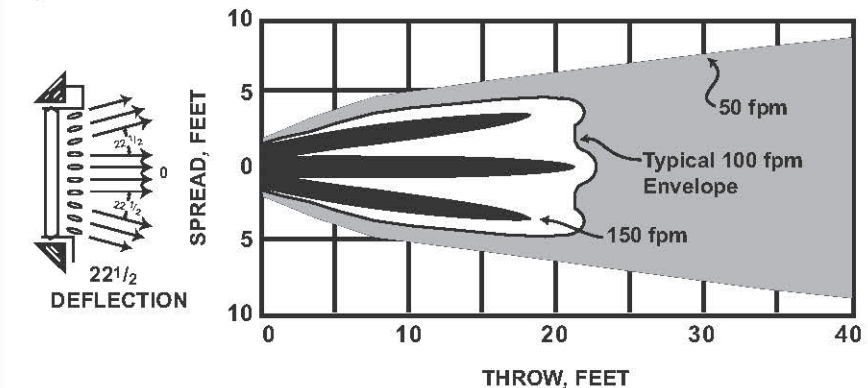
Grilles can be selected with a single set of blades for adjusting either horizontal or vertical deflection, or with two sets of blades for adjusting both horizontal and vertical deflections.

0° Horizontal Deflection



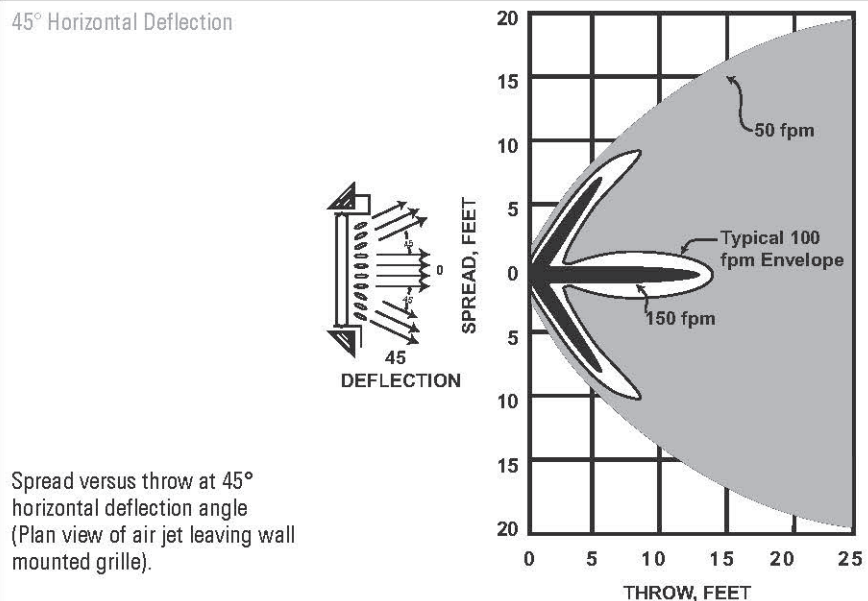
Spread versus throw at 0° horizontal deflection angle (Plan view of air jet leaving wall mounted grille).

22½° Horizontal Deflection



Spread versus throw at 22½° horizontal deflection angle (Plan view of air jet leaving wall mounted grille).

45° Horizontal Deflection



Spread versus throw at 45° horizontal deflection angle (Plan view of air jet leaving wall mounted grille).

S90H/S90V, S90HFF/S90VFF, S90HFFI Return Grille

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

NC-20

Nominal Duct Size (in.)	Nominal Duct Area (ft ²)	Core Area (ft ²)	Core Velocity Velocity Pressure Neg. Static Pressure	100 0.001 0.002	200 0.002 0.008	300 0.006 0.018	400 0.010 0.032	500 0.016 0.051	600 0.022 0.073	700 0.031 0.099	800 0.040 0.130	900 0.050 0.164
6x6	0.25	0.19	Airflow, cfm NC	19	38	57	76	95	114	133	152	171
8x6	0.33	0.26	Airflow, cfm NC	26	52	78	104	130	156	182	208	234
10x6	0.42	0.34	Airflow, cfm NC	34	68	102	136	170	204	238	272	306
8x8	0.44	0.37	Airflow, cfm NC	37	74	111	148	185	222	259	296	333
12x6	0.5	0.41	Airflow, cfm NC	41	82	123	164	205	246	287	328	369
14x6	0.58	0.48	Airflow, cfm NC	48	96	144	192	240	288	336	384	432
16x6			Airflow, cfm NC	57	114	171	228	285	342	399	456	513
12x8	0.67	0.57	Airflow, cfm NC	57	114	171	228	285	342	399	456	513
10x10	0.69	0.59	Airflow, cfm NC	59	118	177	236	295	354	413	472	531
18x6	0.75	0.63	Airflow, cfm NC	63	126	189	252	315	378	441	504	567
20x6			Airflow, cfm NC	72	144	216	288	360	432	504	576	648
12x10	0.83	0.72	Airflow, cfm NC	72	144	216	288	360	432	504	576	648
22x6	0.92	0.77	Airflow, cfm NC	77	154	231	308	385	462	539	616	693
24x6			Airflow, cfm NC	88	176	264	352	440	528	616	704	792
12x12	1	0.88	Airflow, cfm NC	88	176	264	352	440	528	616	704	792
30x6			Airflow, cfm NC	111	222	333	444	555	666	777	888	999
18x10	1.25	1.11	Airflow, cfm NC	111	222	333	444	555	666	777	888	999
14x14	1.36	1.22	Airflow, cfm NC	122	244	366	488	610	732	854	976	1098
36x6			Airflow, cfm NC	135	270	405	540	675	810	945	1080	1215
18x12	1.5	1.35	Airflow, cfm NC	135	270	405	540	675	810	945	1080	1215
22x10	1.53	1.37	Airflow, cfm NC	137	274	411	548	685	822	959	1096	1233
30x8			Airflow, cfm NC	149	298	447	596	745	894	1043	1192	1341
24x10	1.67	1.49	Airflow, cfm NC	149	298	447	596	745	894	1043	1192	1341
42x6			Airflow, cfm NC	159	318	477	636	795	954	1113	1272	1431
18x14	1.75	1.59	Airflow, cfm NC	159	318	477	636	795	954	1113	1272	1431
16x16	1.78	1.62	Airflow, cfm NC	162	324	486	648	810	972	1134	1296	1458
24x12	2	1.82	Airflow, cfm NC	182	364	546	728	910	1092	1274	1456	1638
18x16			Airflow, cfm NC	182	364	546	728	910	1092	1274	1456	1638
18x18	2.25	2.07	Airflow, cfm NC	207	414	621	828	1035	1242	1449	1656	1863
24x14	2.33	2.14	Airflow, cfm NC	214	428	642	856	1070	1284	1498	1712	1926
30x12	2.5	2.29	Airflow, cfm NC	229	458	687	916	1145	1374	1603	1832	2061
24x16	2.67	2.46	Airflow, cfm NC	246	492	738	984	1230	1476	1722	1968	2214
20x20	2.78	2.57	Airflow, cfm NC	257	514	771	1028	1285	1542	1799	2056	2313
36x12	3	2.75	Airflow, cfm NC	275	550	825	1100	1375	1650	1925	2200	2475
30x16	3.33	3.11	Airflow, cfm NC	311	622	933	1244	1555	1866	2177	2488	2799
24x20			Airflow, cfm NC	311	622	933	1244	1555	1866	2177	2488	2799
22x22	3.36	3.14	Airflow, cfm NC	314	628	942	1256	1570	1884	2198	2512	2826
42x12			Airflow, cfm NC	322	644	966	1288	1610	1932	2254	2576	2898
36x14	3.5	3.22	Airflow, cfm NC	322	644	966	1288	1610	1932	2254	2576	2898
24x22	3.67	3.43	Airflow, cfm NC	343	686	1029	1372	1715	2058	2401	2744	3087
30x18	3.75	3.5	Airflow, cfm NC	350	700	1050	1400	1750	2100	2450	2800	3150

NC-30

NC-40

- Static pressures are negative, in inches of water, measured per ANSI/ASHRAE Standard 70-2006

- NC based on room absorption of 10 dB, re 10⁻¹² watts, measured per ANSI/ASHRAE Standard 70-2006



PERFORMANCE DATA—LIGHT COMMERCIAL

S90H/S90V, S90HFF/S90VFF, S90HFFI Return Grille

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD								NC-20	NC-30	NC-40		
Nominal Duct Size (in.)	Nominal Duct Area (ft²)	Core Area (ft²)	Core Velocity Velocity Pressure Neg. Static Pressure	100 0.001 0.002	200 0.002 0.008	300 0.006 0.018	400 0.010 0.032	500 0.016 0.051	600 0.022 0.073	700 0.031 0.099	800 0.040 0.130	900 0.050 0.164
48x12 24x24	4	3.75	Airflow, cfm NC	375 -	750 -	1125 -	1500 -	1875 18	2250 25	2625 37	3000 38	3375 41
36x18 36x20 30x24	4.5 5	4.22 4.71	Airflow, cfm NC	422 471 -	844 942 -	1266 1413 -	1688 1884 -	2110 2355 18	2532 2826 25	2954 3297 31	3376 3768 38	3798 4239 41
42x18 28x28 42x20 30x28	5.25 5.44 5.83	4.94 5.16 5.51	Airflow, cfm NC	494 516 551 -	988 1032 1102 -	1482 1548 1653 -	1976 2064 2204 10	2470 2580 2755 18	2964 3096 3306 26	3458 3612 3857 32	3952 4128 4408 38	4446 4644 4959 41
48x18 36x24 30x30	6 6.25	5.66 5.94	Airflow, cfm NC	566 594 -	1132 1188 -	1698 1782 -	2264 2376 10	2830 2970 18	3396 3564 26	3962 4158 32	4528 4752 38	5094 5346 41
42x24 36x28 46x22	7 7.03	6.66 6.68	Airflow, cfm NC	666 668 -	1332 1336 -	1998 2004 -	2664 2672 10	3330 3340 19	3996 4008 26	4662 4676 32	5328 5344 38	5994 6012 42
32x32 36x30 48x24 36x32	7.11 7.5 8	6.78 7.16 7.63	Airflow, cfm NC	678 716 763 -	1356 1432 1526 -	2034 2148 2289 -	2712 2864 3052 10	3390 3580 3815 19	4068 4296 4578 27	4746 5012 5341 32	5424 5728 6104 38	6102 6444 6867 42
34x34 36x34 42x30	8.03 8.5 8.75	7.68 8.14 8.38	Airflow, cfm NC	768 814 838 -	1536 1628 1676 -	2304 2442 2514 -	3072 3256 3352 11	3840 4070 4190 20	4608 4884 5028 27	5376 5698 5866 32	6144 6512 6704 38	6912 7326 7542 42
36x36 42x34 48x30	9 10	8.63 9.6	Airflow, cfm NC	863 960 964 -	1726 1920 1928 -	2589 2880 2892 -	3452 3840 3856 11	4315 4800 4820 20	5178 5760 5784 27	6041 6720 6748 33	6904 7680 7712 38	7767 8640 8676 43
38x38 42x36 46x34	10.03 10.5 10.86	9.64 10.1 10.45	Airflow, cfm NC	964 1010 1045 -	1928 2020 2090 -	2892 3030 3135 -	3856 4040 4180 11	4820 5050 5225 20	5784 6060 6270 27	6748 7070 7315 33	7712 8080 8360 38	8676 9090 9405 43
42x38 40x40 48x36	11.08 11.11 12	10.67 10.7 11.57	Airflow, cfm NC	1067 1070 1157 -	2134 2140 2314 -	3201 3210 3471 -	4268 4280 4628 11	5335 5350 5785 20	6402 6420 6942 27	7469 7490 8099 33	8536 8560 9256 38	9603 9630 10413 43
42x42 44x44 48x42	12.25 13.44 14	11.82 12.99 13.54	Airflow, cfm NC	1182 1299 1354 -	2364 2598 2708 -	3546 3897 4062 -	4728 5196 5416 12	5910 6495 6770 21	7092 7794 8124 28	8274 9093 9478 34	9456 10392 10832 40	10638 11691 12186 45
46x46 48x46 48x48	14.69 15.33 16	14.22 14.85 15.5	Airflow, cfm NC	1422 1485 1550 -	2844 2970 3100 -	4266 4455 4650 -	5688 5940 6200 13	7110 7425 7750 22	8532 8910 9300 29	9954 10395 10850 35	11376 11880 12400 40	12798 13365 13950 45

• Static pressures are negative, in inches of water, measured per ANSI/ASHRAE Standard 70-2006

• NC based on room absorption of 10 dB, re 10⁻¹² watts, measured per ANSI/ASHRAE Standard 70-2006

S90H/S90V, S90HFF/S90VFF, S90HFFI Return Grille

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD								NC-10	NC-20	NC-30		NC-40
Nominal Duct Size (in.)	Nominal Duct Area (ft²)	Core Area (ft²)	Core Velocity Velocity Pressure Neg. Static Pressure	300 0.006 0.012	400 0.010 0.022	500 0.016 0.034	600 0.022 0.049	700 0.031 0.067	900 0.050 0.111	1100 0.075 0.165	1300 0.105 0.231	1500 0.140 0.307
6x6	0.25	0.19	Airflow, cfm NC	57 -	76 -	95 -	114 -	133 13	171 20	209 26	247 31	285 35
8x6	0.33	0.26	Airflow, cfm NC	78 -	104 -	130 -	156 -	182 14	234 22	286 27	338 32	390 36
10x6	0.42	0.34	Airflow, cfm NC	102 -	136 -	170 -	204 11	238 16	306 23	374 28	442 33	510 37
8x8	0.44	0.37	Airflow, cfm NC	111 -	148 -	185 -	222 12	259 16	333 23	407 29	481 34	555 38
12x6	0.5	0.41	Airflow, cfm NC	123 -	164 -	205 -	246 12	287 16	369 24	451 29	533 34	615 38
14x6	0.58	0.48	Airflow, cfm NC	144 -	192 -	240 -	288 13	336 17	432 24	528 30	624 35	720 39
16x6	0.67	0.57	Airflow, cfm NC	171 -	228 -	285 -	342 13	399 18	513 25	627 31	741 36	855 40
12x8			Airflow, cfm NC	177 -	236 -	295 -	354 14	413 18	531 25	649 31	767 36	885 40
10x10	0.69	0.59	Airflow, cfm NC	189 -	252 -	315 -	378 14	441 18	567 25	693 31	819 36	945 40
18x6	0.75	0.63	Airflow, cfm NC	216 -	288 -	360 -	432 14	504 19	648 26	792 32	936 37	1080 41
20x6	0.83	0.72	Airflow, cfm NC	231 -	308 -	385 -	462 15	539 19	693 26	847 32	1001 37	1155 41
12x10			Airflow, cfm NC	264 -	352 -	440 -	528 15	616 20	792 27	968 33	1144 37	1320 42
30x6	1.25	1.11	Airflow, cfm NC	333 -	444 -	555 11	666 16	777 21	999 28	1221 34	1443 38	1665 43
18x10			Airflow, cfm NC	366 -	488 -	610 11	732 17	854 21	1098 28	1342 34	1586 39	1830 43
14x14	1.36	1.22	Airflow, cfm NC	405 -	540 -	675 12	810 17	945 22	1215 29	1485 35	1755 39	2025 43
36x6	1.5	1.35	Airflow, cfm NC	411 -	548 -	685 12	822 17	959 22	1233 29	1507 35	1781 39	2055 43
22x10			Airflow, cfm NC	447 -	596 -	745 12	894 18	1043 22	1341 29	1639 35	1937 40	2235 44
30x8	1.67	1.49	Airflow, cfm NC	477 -	636 -	795 13	954 18	1113 22	1431 29	1749 35	2067 40	2385 44
24x10			Airflow, cfm NC	486 -	648 -	810 13	972 18	1134 22	1458 30	1782 35	2106 40	2430 44
42x6	1.78	1.62	Airflow, cfm NC	546 -	728 -	910 13	1092 18	1274 23	1638 30	2002 36	2366 41	2730 45
18x16			Airflow, cfm NC	621 -	828 -	1035 14	1242 19	1449 23	1863 31	2277 36	2691 41	3105 45
18x18	2.25	2.07	Airflow, cfm NC	642 -	856 -	1070 14	1284 19	1498 24	1926 31	2354 37	2782 41	3210 45
24x14	2.33	2.14	Airflow, cfm NC	687 -	916 -	1145 14	1374 19	1603 24	2061 31	2519 37	2977 42	3435 46
30x12	2.5	2.29	Airflow, cfm NC	738 -	984 -	1230 15	1476 20	1722 24	2214 31	2706 37	3198 42	3690 46
24x16	2.67	2.46	Airflow, cfm NC	771 -	1028 -	1285 15	1542 20	1799 24	2313 32	2827 37	3341 42	3855 46
20x20	2.78	2.57	Airflow, cfm NC	825 -	1100 -	1375 15	1650 20	1925 25	2475 32	3025 38	3575 42	4125 47
36x12	3	2.75	Airflow, cfm NC	933 -	1244 -	1555 16	1866 21	2177 25	2799 32	3421 38	4043 43	4665 47
30x16	3.33	3.11	Airflow, cfm NC	942 -	1256 -	1570 16	1884 21	2198 25	2826 32	3454 38	4082 43	4710 47
24x20			Airflow, cfm NC	966 -	1288 -	1610 16	1932 21	2254 25	2898 33	3542 38	4186 43	4830 47
42x12	3.5	3.22	Airflow, cfm NC	1029 -	1372 -	1715 16	2058 21	2401 26	3087 33	3773 39	4459 43	5145 47
36x14			Airflow, cfm NC	1050 -	1400 -	1750 16	2100 21	2450 26	3150 33	3850 39	4550 43	5250 48
30x18	3.75	3.5	Airflow, cfm NC									

- Static pressures are negative, in inches of water, measured per ANSI/ASHRAE Standard 70-2006

- NC based on room absorption of 10 dB, re 10⁻¹² watts, measured per ANSI/ASHRAE Standard 70-2006

Recommended Noise Criteria and Face Velocity Ranges are on page 19.



PERFORMANCE DATA—LIGHT COMMERCIAL

S90H/S90V, S90HFF/S90VFF, S90HFFI Return Grille

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

Nominal Duct Size (in.)	Nominal Duct Area (ft²)	Core Area (ft²)	Core Velocity Velocity Pressure Neg. Static Pressure	NC-10		NC-20		NC-30		NC-40		
				300 0.006 0.012	400 0.010 0.022	500 0.016 0.034	600 0.022 0.049	700 0.031 0.067	900 0.050 0.111	1100 0.075 0.165	1300 0.105 0.231	1500 0.140 0.307
48x12	4	3.75	Airflow, cfm	1125	1500	1875	2250	2625	3375	4125	4875	5625
24x24			NC	-	-	16	22	26	33	39	44	48
36x18	4.5	4.22	Airflow, cfm	1266	1688	2110	2532	2954	3798	4642	5486	6330
36x20			NC	-	-	17	22	27	34	39	44	48
36x20	5	4.71	Airflow, cfm	1413	1884	2355	2826	3297	4239	5181	6123	7065
30x24			NC	-	11	17	23	27	34	40	45	49
42x18	5.25	4.94	Airflow, cfm	1482	1976	2470	2964	3458	4446	5434	6422	7410
NC			NC	-	11	18	23	27	34	40	45	49
28x28	5.44	5.16	Airflow, cfm	1548	2064	2580	3096	3612	4644	5676	6708	7740
NC			NC	-	11	18	23	27	35	40	45	49
42x20	5.83	5.51	Airflow, cfm	1653	2204	2755	3306	3857	4959	6061	7163	8265
30x28			NC	-	12	18	23	28	35	41	45	50
48x18	6	5.66	Airflow, cfm	1698	2264	2830	3396	3962	5094	6226	7358	8490
36x24			NC	-	12	18	23	28	35	41	46	50
30x30	6.25	5.94	Airflow, cfm	1782	2376	2970	3564	4158	5346	6534	7722	8910
NC			NC	-	12	18	24	28	35	41	46	50
42x24	7	6.66	Airflow, cfm	1998	2664	3330	3996	4662	5994	7326	8658	9990
36x28			NC	-	12	19	24	28	36	41	46	50
46x22	7.03	6.68	Airflow, cfm	2004	2672	3340	4008	4676	6012	7348	8684	10020
NC			NC	-	12	19	24	29	36	41	46	50
32x32	7.11	6.78	Airflow, cfm	2034	2712	3390	4068	4746	6102	7458	8814	10170
NC			NC	-	13	19	24	29	36	42	46	50
36x30	7.5	7.16	Airflow, cfm	2148	2864	3580	4296	5012	6444	7876	9308	10740
NC			NC	-	13	19	24	29	36	42	47	51
48x24	8	7.63	Airflow, cfm	2289	3052	3815	4578	5341	6867	8393	9919	11445
36x32			NC	-	13	19	25	29	36	42	47	51
34x34	8.03	7.68	Airflow, cfm	2304	3072	3840	4608	5376	6912	8448	9984	11520
NC			NC	-	13	19	25	29	36	42	47	51
36x34	8.5	8.14	Airflow, cfm	2442	3256	4070	4884	5698	7326	8954	10582	12210
NC			NC	-	13	20	25	29	37	42	47	51
42x30	8.75	8.38	Airflow, cfm	2514	3352	4190	5028	5866	7542	9218	10894	12570
NC			NC	-	13	20	25	29	37	42	47	51
36x36	9	8.63	Airflow, cfm	2589	3452	4315	5178	6041	7767	9493	11219	12945
NC			NC	-	14	20	25	30	37	43	47	51
42x34	10	9.6	Airflow, cfm	2880	3840	4800	5760	6720	8640	10560	12480	14400
48x30			NC	-	14	20	26	30	37	43	48	52
38x38	10.03	9.64	Airflow, cfm	2892	3856	4820	5784	6748	8676	10604	12532	14460
NC			NC	-	14	20	26	30	37	43	48	52
42x36	10.5	10.1	Airflow, cfm	3030	4040	5050	6060	7070	9090	11110	13130	15150
NC			NC	-	14	21	26	30	38	43	48	52
46x34	10.86	10.45	Airflow, cfm	3135	4180	5225	6270	7315	9405	11495	13585	15675
NC			NC	-	14	21	26	30	38	43	48	52
42x38	11.08	10.67	Airflow, cfm	3201	4268	5335	6402	7469	9603	11737	13871	16005
NC			NC	-	14	21	26	31	38	44	48	52
40x40	11.11	10.7	Airflow, cfm	3210	4280	5350	6420	7490	9630	11770	13910	16050
NC			NC	-	15	21	26	31	38	44	48	52
48x36	12	11.57	Airflow, cfm	3471	4628	5785	6942	8099	10413	12727	15041	17355
NC			NC	-	15	21	26	31	38	44	49	53
42x42	12.25	11.82	Airflow, cfm	3546	4728	5910	7092	8274	10638	13002	15366	17730
NC			NC	-	15	21	27	31	38	44	49	53
44x44	13.44	12.99	Airflow, cfm	3897	5196	6495	7794	9093	11691	14289	16887	19485
NC			NC	-	15	22	27	31	39	44	49	53
48x42	14	13.54	Airflow, cfm	4062	5416	6770	8124	9478	12186	14894	17602	20310
NC			NC	-	16	22	27	32	39	45	49	53
46x46	14.69	14.22	Airflow, cfm	4266	5688	7110	8532	9954	12798	15642	18486	21330
NC			NC	-	16	22	27	32	39	45	50	54
48x46	15.33	14.85	Airflow, cfm	4455	5940	7425	8910	10395	13365	16335	19305	22275
NC			NC	-	16	22	28	32	39	45	50	54
48x48	16	15.5	Airflow, cfm	4650	6200	7750	9300	10850	13950	17050	20150	23250
NC			NC	-	16	23	28	32	39	45	50	54

• Static pressures are negative, in inches of water, measured per ANSI/ASHRAE Standard 70-2006

• NC based on room absorption of 10 dB, re 10⁻¹² watts, measured per ANSI/ASHRAE Standard 70-2006

NC-50

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD



PERFORMANCE DATA—LIGHT COMMERCIAL

900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

Nom. Duct Size (in.)	Nom. Duct Area (ft ²)	Core Area (ft ²)	NC-20				NC-30		NC-40		NC-50	
			Core Vel.	300	400	500	600	700	800	1000	1200	1400
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122
Total 22.5° Press. 45°	Core Area (ft ²)	Core Vel.	0°	0.016	0.029	0.046	0.066	0.090	0.117	0.183	0.263	0.358
			22.5°	0.018	0.033	0.051	0.074	0.100	0.131	0.204	0.294	0.401
			45°	0.028	0.049	0.077	0.111	0.152	0.198	0.309	0.445	0.606
14x14	1.36	1.22	cfm	366	488	610	732	854	976	1220	1464	1708
			NC	-	11	18	23	28	32	39	44	49
			Throw (ft)	0° 12-19-35 22.5° 9-15-27 45° 5-8-16	17-25-41 13-20-31 8-11-18	21-31-45 16-24-35 9-14-20	25-35-50 20-27-39 11-16-22	29-38-54 23-29-42 13-17-24	33-41-57 26-31-45 15-18-26	37-45-64 29-35-50 17-20-29	41-50-70 31-39-55 18-22-32	44-54-76 34-42-59 20-24-34
36x6 27x8 18x12	1.50	1.35	cfm	405	540	675	810	945	1080	1350	1620	1890
			NC	-	12	18	24	28	32	39	44	49
			Throw (ft)	0° 12-20-37 22.5° 10-15-29 45° 6-9-17	18-26-43 14-21-33 8-12-19	22-33-48 17-26-37 10-15-21	26-37-52 21-29-41 12-17-24	31-40-57 24-31-44 14-18-25	35-43-60 27-33-47 16-19-27	39-48-68 30-37-52 18-21-30	43-52-74 33-41-57 19-24-33	46-57-80 36-44-62 21-25-36
22x10	1.53	1.37	cfm	411	548	685	822	959	1096	1370	1644	1918
			NC	-	12	18	24	28	32	39	44	49
			Throw (ft)	0° 12-20-37 22.5° 10-16-29 45° 6-9-17	18-27-43 14-21-33 8-12-19	22-33-48 17-26-37 10-15-22	27-37-53 21-29-41 12-17-24	31-40-57 24-31-44 14-18-26	35-43-61 27-33-47 16-19-27	39-48-68 30-37-53 18-22-31	43-53-75 33-41-58 19-24-34	46-57-81 36-44-62 21-26-36
30x8 24x10	1.67	1.49	cfm	447	596	745	894	1043	1192	1490	1788	2086
			NC	-	12	19	24	29	33	39	45	49
			Throw (ft)	0° 13-21-39 22.5° 10-16-30 45° 6-9-17	19-28-45 14-22-35 8-13-20	23-35-50 18-27-39 10-16-23	28-39-55 22-30-43 13-17-25	32-42-59 25-33-46 15-19-27	37-45-63 28-35-49 16-20-29	41-50-71 32-39-55 18-23-32	45-55-78 35-43-60 20-25-35	48-59-84 38-46-65 22-27-38
42x6 18x14	1.75	1.59	cfm	477	636	795	954	1113	1272	1590	1908	2226
			NC	-	12	19	24	29	33	40	45	50
			Throw (ft)	0° 13-22-40 22.5° 10-17-31 45° 6-10-18	19-29-46 15-22-36 9-13-21	24-36-52 19-28-40 11-16-23	29-40-57 22-31-44 13-18-26	34-43-61 26-34-48 15-20-28	38-46-66 29-36-51 17-21-30	42-52-73 33-40-57 19-23-33	46-57-80 36-44-62 21-26-36	50-61-87 39-48-67 23-28-39
16x16	1.78	1.62	cfm	486	648	810	972	1134	1296	1620	1944	2268
			NC	-	12	19	24	29	33	40	45	50
			Throw (ft)	0° 14-22-41 22.5° 11-17-31 45° 6-10-18	19-29-47 15-22-36 9-13-21	24-36-52 19-28-41 11-16-24	29-41-57 22-31-44 13-18-26	34-44-62 26-34-48 15-20-28	38-47-66 30-36-51 17-21-30	43-52-74 33-41-57 19-24-33	47-57-81 36-44-63 21-26-36	51-62-88 39-48-68 23-28-39
48x6 36x8 24x12 18x16	2.00	1.82	cfm	546	728	910	1092	1274	1456	1820	2184	2548
			NC	-	13	19	25	30	34	40	46	50
			Throw (ft)	0° 14-23-43 22.5° 11-18-33 45° 6-10-19	20-31-50 16-24-38 9-14-22	26-38-55 20-30-43 12-17-25	31-43-61 24-33-47 14-19-27	36-46-66 28-36-51 16-21-30	41-50-70 31-38-54 18-22-32	45-55-78 35-43-61 20-25-35	50-61-86 38-47-67 22-27-39	54-66-93 42-51-72 24-30-42
18x18	2.25	2.07	cfm	621	828	1035	1242	1449	1656	2070	2484	2898
			NC	-	13	20	25	30	34	41	46	51
			Throw (ft)	0° 15-25-46 22.5° 12-19-36 45° 7-11-21	22-33-53 17-25-41 10-15-24	27-41-59 21-32-46 12-18-27	33-46-65 25-36-50 15-21-29	38-49-70 30-38-54 17-22-31	43-53-75 33-41-58 19-24-34	48-59-84 37-46-65 22-27-38	53-65-92 41-50-71 24-29-41	57-70-99 44-54-77 26-31-45
42x8 24x14	2.33	2.14	cfm	642	856	1070	1284	1498	1712	2140	2568	2996
			NC	-	13	20	26	30	34	41	46	51
			Throw (ft)	0° 16-25-47 22.5° 12-19-36 45° 7-11-21	22-33-54 17-26-42 10-15-24	28-42-60 22-32-47 13-19-27	33-47-66 26-36-51 15-21-30	39-50-71 30-39-55 18-23-32	44-54-76 34-42-59 20-24-34	49-60-85 38-47-66 22-27-38	54-66-93 42-51-72 24-30-42	58-71-101 45-55-78 26-32-45
36x10 30x12	2.50	2.29	cfm	687	916	1145	1374	1603	1832	2290	2748	3206
			NC	-	14	20	26	30	34	41	47	51
			Throw (ft)	0° 16-26-48 22.5° 12-20-37 45° 7-12-22	23-34-56 18-27-43 10-16-25	29-43-62 22-33-48 13-19-28	34-48-68 27-37-53 16-22-31	40-52-74 31-40-57 18-23-33	45-56-79 35-43-61 20-25-35	51-62-88 39-48-68 23-28-40	56-68-96 43-53-75 25-31-43	60-74-104 47-57-81 27-33-47
48x8 24x16	2.67	2.46	cfm	738	984	1230	1476	1722	1968	2460	2952	3444
			NC	-	14	21	26	31	35	41	47	51
			Throw (ft)	0° 17-27-50 22.5° 13-21-39 45° 8-12-22	24-36-58 18-28-45 11-16-26	30-45-64 23-35-50 13-20-29	36-50-71 28-39-55 16-22-32	42-54-76 32-42-59 19-24-34	47-58-82 36-45-63 21-26-37	53-64-91 41-50-71 24-29-41	58-71-100 45-55-77 26-32-45	62-76-108 48-59-84 28-34-49
20x20	2.78	2.57	cfm	771	1028	1285	1542	1799	2056	2570	3084	3598
			NC	-	14	21	26	31	35	42	47	52
			Throw (ft)	0° 17-27-51 22.5° 13-21-40 45° 8-12-23	24-37-59 19-28-46 11-16-27	30-46-66 24-35-51 14-21-30	37-51-72 28-40-56 16-23-32	43-55-78 33-43-60 19-25-35	48-59-83 37-46-65 22-27-38	54-66-93 42-51-72 24-30-42	59-72-102 46-56-79 27-32-46	64-78-110 49-60-85 29-35-50
36x12 24x18	3.00	2.75	cfm	825	1100	1375	1650	1925	2200	2750	3300	3850
			NC	-	15	21	27	31	35	42	47	52
			Throw (ft)	0° 18-28-53 22.5° 14-22-41 45° 8-13-24	25-38-61 20-29-47 11-17-27	31-47-68 24-37-53 14-21-31	38-53-75 29-41-58 17-24-34	44-57-81 34-44-63 20-26-36	50-61-86 39-47-67 22-27-39	56-68-96 43-53-75 25-31-43	61-75-106 47-58-82 27-34-48	66-81-114 51-63-88 30-36-51

Performance notes appear at end of table

Recommended Noise Criteria and Face Velocity Ranges are on page 19.

900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

			NC-20			NC-30			NC-40			NC-50		
Nom. Duct Size (in.)	Nom. Duct Area (ft²)	Core Area (ft²)	Core Vel.	300	400	500	600	700	800	1000	1200	1400		
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122		
			0°	0.016	0.029	0.046	0.066	0.090	0.117	0.183	0.263	0.358		
			Total 22.5° Press. 45°	0.018	0.033	0.051	0.074	0.100	0.131	0.204	0.294	0.401		
48x10 30x16 24x20	3.33	3.11	cfm	933	1244	1555	1866	2177	2488	3110	3732	4354		
			NC	-	15	22	27	32	36	42	48	52		
			0°	19-30-56	27-40-65	33-50-72	40-56-79	47-61-86	53-65-92	59-72-103	65-79-112	70-86-121		
			Throw 22.5° (ft) 45°	15-23-44 8-14-25	21-31-50 12-18-29	26-39-56 15-23-33	31-44-62 18-25-36	36-47-66 21-27-39	41-50-71 24-29-41	46-56-79 27-33-46	50-62-87 29-36-51	54-66-94 32-39-55		
22x22	3.36	3.14	cfm	942	1256	1570	1884	2198	2512	3140	3768	4396		
			NC	-	15	22	27	32	36	42	48	53		
			0°	19-30-56	27-40-65	34-50-73	40-56-80	47-61-86	53-65-92	59-73-103	65-80-113	70-86-122		
			Throw 22.5° (ft) 45°	15-23-44 8-14-25	21-31-50 12-18-29	26-39-56 15-23-33	31-44-62 18-25-36	37-47-67 21-27-39	41-50-71 24-29-41	46-56-80 27-33-46	50-62-87 29-36-51	55-67-94 32-39-55		
42x12 36x14	3.50	3.22	cfm	966	1288	1610	1932	2254	2576	3220	3864	4508		
			NC	-	15	22	27	32	36	43	48	53		
			0°	19-31-57	27-41-66	34-51-74	41-57-81	48-62-87	54-66-93	60-74-104	66-81-114	71-87-123		
			Throw 22.5° (ft) 45°	15-24-44 9-14-26	21-32-51 12-18-30	26-40-57 15-23-33	32-44-63 18-26-36	37-48-68 21-28-39	42-51-72 24-30-42	47-57-81 27-33-47	51-63-89 30-36-51	55-68-96 32-39-56		
24x22	3.67	3.43	cfm	1029	1372	1715	2058	2401	2744	3430	4116	4802		
			NC	-	15	22	28	32	36	43	48	53		
			0°	20-32-59	28-42-68	35-53-76	42-59-83	49-64-90	56-68-96	62-76-108	68-83-118	74-90-127		
			Throw 22.5° (ft) 45°	15-25-46 9-14-27	22-33-53 13-19-31	27-41-59 16-24-34	33-46-65 19-27-38	38-49-70 22-29-41	43-53-75 25-31-43	48-59-83 28-34-48	53-65-91 31-38-53	57-70-99 33-41-57		
30x18	3.75	3.5	cfm	1050	1400	1750	2100	2450	2800	3500	4200	4900		
			NC	-	16	22	28	32	36	43	48	53		
			0°	20-32-60	28-43-69	36-53-77	43-60-84	50-64-91	56-69-97	63-77-109	69-84-119	74-91-129		
			Throw 22.5° (ft) 45°	15-25-46 9-14-27	22-33-53 13-19-31	28-41-60 16-24-35	33-46-65 19-27-38	39-50-71 22-29-41	44-53-75 25-31-44	49-60-84 28-35-49	53-65-92 31-38-54	58-71-100 33-41-58		
48x12 36x16 24x24	4.00	3.75	cfm	1125	1500	1875	2250	2625	3000	3750	4500	5250		
			NC	-	16	22	28	33	37	43	49	53		
			0°	21-33-62	29-44-71	37-55-80	44-62-87	51-67-94	58-71-101	65-80-113	71-87-123	77-94-133		
			Throw 22.5° (ft) 45°	16-26-48 9-15-28	23-34-55 13-20-32	29-43-62 17-25-36	34-48-68 20-28-39	40-52-73 23-30-42	45-55-78 26-32-45	50-62-87 29-36-51	55-68-96 32-39-55	60-73-103 35-42-60		
36x18	4.50	4.22	cfm	1266	1688	2110	2532	2954	3376	4220	5064	5908		
			NC	-	16	23	28	33	37	44	49	54		
			0°	22-35-65	31-47-76	39-59-84	47-65-93	55-71-100	62-76-107	69-84-119	76-93-131	82-100-141		
			Throw 22.5° (ft) 45°	17-27-51 10-16-29	24-36-59 14-21-34	30-45-65 18-26-38	36-51-72 21-29-42	42-55-77 25-32-45	48-59-83 28-34-48	53-65-93 31-38-54	59-72-101 34-42-59	63-77-110 37-45-64		
36x20 30x24	5.00	4.71	cfm	1413	1884	2355	2826	3297	3768	4710	5652	6594		
			NC	-	17	23	29	33	37	44	50	54		
			0°	23-37-69	33-49-80	41-62-89	49-69-98	58-75-106	65-80-113	73-89-126	80-98-138	86-106-149		
			Throw 22.5° (ft) 45°	18-29-54 10-17-31	26-38-62 15-22-36	32-48-69 19-28-40	38-54-76 22-31-44	45-58-82 26-34-48	50-62-87 29-36-51	56-69-98 33-40-57	62-76-107 36-44-62	67-82-116 39-48-67		
42x18	5.25	4.94	cfm	1482	1976	2470	2964	3458	3952	4940	5928	6916		
			NC	-	17	24	29	34	38	44	50	54		
			0°	24-38-71	34-51-82	42-63-91	51-71-100	59-76-108	67-82-116	75-91-129	82-100-142	88-108-153		
			Throw 22.5° (ft) 45°	18-29-55 11-17-32	26-39-63 15-23-37	33-49-71 19-28-41	39-55-78 23-32-45	46-59-84 27-34-49	52-63-90 30-37-52	58-71-100 34-41-58	63-78-110 37-45-64	68-84-118 40-49-69		
28x28	5.44	5.16	cfm	1548	2064	2580	3096	3612	4128	5160	6192	7224		
			NC	-	17	24	29	34	38	45	50	55		
			0°	24-39-72	35-52-84	43-65-93	52-72-102	60-78-110	68-84-118	76-93-132	84-102-145	90-110-156		
			Throw 22.5° (ft) 45°	19-30-56 11-17-33	27-40-65 16-23-38	33-50-72 19-29-42	40-56-79 23-33-46	47-61-86 27-35-50	53-65-92 31-38-53	59-72-102 34-42-59	65-79-112 38-46-65	70-86-121 41-50-70		
42x20 30x28	5.83	5.51	cfm	1653	2204	2755	3306	3857	4408	5510	6612	7714		
			NC	-	17	24	30	34	38	45	50	55		
			0°	25-40-75	36-54-86	45-67-96	54-75-106	62-81-114	70-86-122	79-96-136	86-106-149	93-114-161		
			Throw 22.5° (ft) 45°	19-31-58 11-18-34	28-41-67 16-24-39	35-52-75 20-30-43	41-58-82 24-34-48	48-63-88 28-36-51	55-67-95 32-39-55	61-75-106 35-43-61	67-82-116 39-48-67	72-88-125 42-51-73		
48x18 36x24	6.00	5.66	cfm	1698	2264	2830	3396	3962	4528	5660	6792	7924		
			NC	-	18	24	30	34	38	45	50	55		
			0°	25-41-76	36-54-87	45-68-98	54-76-107	63-82-116	71-87-124	80-98-138	87-107-152	94-116-164		
			Throw 22.5° (ft) 45°	20-32-59 11-18-34	28-42-68 16-24-39	35-53-76 20-31-44	42-59-83 24-34-48	49-63-90 28-37-52	55-68-96 32-39-56	62-76-107 36-44-62	68-83-117 39-48-68	73-90-127 43-52-74		
30x30	6.25	5.94	cfm	1782	2376	2970	3564	4158	4752	5940	7128	8316		
			NC	-	18	24	30	34	38	45	51	55		
			0°	26-42-78	37-56-90	46-69-100	56-78-110	65-84-119	73-90-127	82-100-142	90-110-155	97-119-168		
			Throw 22.5° (ft) 45°	20-32-60 12-19-35	29-43-69 17-25-40	36-54-78 21-31-45	43-60-85 25-35-49	50-65-92 29-38-53	57-69-98 33-40-57	63-78-110 37-45-64	69-85-120 40-49-70	75-92-130		



PERFORMANCE DATA—LIGHT COMMERCIAL

900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

			NC-20			NC-30			NC-40			NC-50		
Nom. Duct Size (in.)	Nom. Duct Area (ft²)	Core Area (ft²)	Core Vel.	300	400	500	600	700	800	1000	1200	1400		
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122		
			0°	0.016	0.029	0.046	0.066	0.090	0.117	0.183	0.263	0.358		
			Total 22.5° Press. 45°	0.018	0.033	0.051	0.074	0.100	0.131	0.204	0.294	0.401		
				0.028	0.049	0.077	0.111	0.152	0.198	0.309	0.445	0.606		
42x24 36x28	7.00	6.66	cfm	1998	2664	3330	3996	4662	5328	6660	7992	9324		
			NC	-	18	25	30	35	39	46	51	56		
			0°	28-44-82	39-59-95	49-74-106	59-82-116	69-89-126	77-95-134	87-106-150	95-116-164	102-126-178		
			Throw 22.5° (ft) 45°	21-34-64 12-20-37	30-46-74 18-26-43	38-57-82 22-33-48	46-64-90 26-37-52	53-69-97 31-40-56	60-74-104 35-43-60	67-82-116 39-48-68	74-90-127 43-52-74	79-97-138 46-56-80		
46x22	7.03	6.68	cfm	2004	2672	3340	4008	4676	5344	6680	8016	9352		
			NC	-	18	25	30	35	39	46	51	56		
			0°	28-44-82	39-59-95	49-74-106	59-82-116	69-89-126	78-95-134	87-106-150	95-116-165	103-126-178		
			Throw 22.5° (ft) 45°	21-34-64 12-20-37	30-46-74 18-27-43	38-57-82 22-33-48	46-64-90 27-37-52	53-69-97 31-40-57	60-74-104 35-43-60	67-82-116 39-48-68	74-90-128 43-52-74	80-97-138 46-57-80		
32x32	7.11	6.78	cfm	2034	2712	3390	4068	4746	5424	6780	8136	9492		
			NC	-	18	25	30	35	39	46	51	56		
			0°	28-45-83	40-59-96	49-74-107	59-83-117	69-90-127	78-96-135	87-107-151	96-117-166	103-127-179		
			Throw 22.5° (ft) 45°	22-34-64 12-20-37	31-46-74 18-27-43	38-57-83 22-33-48	46-64-91 27-37-53	54-69-98 31-40-57	61-74-105 35-43-61	68-83-117 39-48-68	74-91-129 43-53-75	80-98-139 47-57-81		
36x30	7.50	7.16	cfm	2148	2864	3580	4296	5012	5728	7160	8592	10024		
			NC	-	19	25	31	35	39	46	51	56		
			0°	29-46-85	41-61-98	51-76-110	61-85-121	71-92-130	80-98-139	90-110-156	98-121-170	106-130-184		
			Throw 22.5° (ft) 45°	22-35-66 13-21-38	32-47-76 18-27-44	39-59-85 23-34-50	47-66-93 27-38-54	55-71-101 32-41-59	62-76-108 36-44-63	70-85-121 40-50-70	76-93-132 44-54-77	82-101-143 48-59-83		
48x24 36x32	8.00	7.63	cfm	2289	3052	3815	4578	5341	6104	7630	9156	10682		
			NC	-	19	25	31	35	39	46	52	56		
			0°	29-47-88	42-63-102	52-79-114	63-88-124	73-95-134	83-102-144	93-114-161	102-124-176	110-134-190		
			Throw 22.5° (ft) 45°	23-37-68 13-21-40	33-49-79 19-28-46	41-61-88 24-35-51	49-68-96 28-40-56	57-74-104 33-43-60	64-79-111 37-46-65	72-88-124 42-51-72	79-96-136 46-56-79	85-104-147 49-60-86		
34x34	8.03	7.68	cfm	2304	3072	3840	4608	5376	6144	7680	9216	10752		
			NC	-	19	25	31	36	40	46	52	56		
			0°	30-47-88	42-63-102	53-79-114	63-88-125	74-95-135	83-102-144	93-114-161	102-125-176	110-135-191		
			Throw 22.5° (ft) 45°	23-37-68 13-21-40	33-49-79 19-28-46	41-61-88 24-36-51	49-68-97 28-40-56	57-74-104 33-43-61	64-79-112 37-46-65	72-88-125 42-51-73	79-97-137 46-56-79	85-104-148 50-61-86		
36x34	8.50	8.14	cfm	2442	3256	4070	4884	5698	6512	8140	9768	11396		
			NC	-	19	26	31	36	40	46	52	56		
			0°	30-49-91	43-65-105	54-81-117	65-91-128	76-98-139	86-105-148	96-117-166	105-128-182	113-139-196		
			Throw 22.5° (ft) 45°	24-38-70 14-22-41	34-50-81 20-29-47	42-63-91 24-37-53	50-70-100 29-41-58	59-76-108 34-44-62	66-81-115 39-47-67	74-91-129 43-53-75	81-100-141 47-58-82	88-108-152 51-62-88		
42x30	8.75	8.38	cfm	2514	3352	4190	5028	5866	6704	8380	10056	11732		
			NC	11	19	26	31	36	40	47	52	57		
			0°	31-49-92	44-66-106	55-82-119	66-92-130	77-100-141	87-106-151	97-119-168	106-130-184	115-141-199		
			Throw 22.5° (ft) 45°	24-38-71 14-22-41	34-51-82 20-30-48	43-64-92 25-37-54	51-71-101 30-41-59	60-77-109 35-45-63	67-82-117 39-48-68	75-92-130 44-54-76	82-101-143 48-59-83	89-109-154 52-63-90		
36x36	9.00	8.63	cfm	2589	3452	4315	5178	6041	6904	8630	10356	12082		
			NC	11	19	26	31	36	40	47	52	57		
			0°	31-50-94	45-67-108	56-84-121	67-94-132	78-101-143	88-108-153	99-121-171	108-132-187	117-143-202		
			Throw 22.5° (ft) 45°	24-39-72 14-23-42	35-52-84 20-30-49	43-65-94 25-38-54	52-72-103 30-42-60	61-78-111 35-45-64	68-84-118 40-49-69	76-94-132 44-54-77	84-103-145 49-60-84	90-111-157 53-64-91		
42x34 48x30	10.00	9.6	cfm	2880	3840	4800	5760	6720	7680	9600	11520	13440		
			NC	11	20	26	32	36	40	47	53	57		
			0°	33-53-99	47-71-114	59-88-127	71-99-140	82-107-151	93-114-161	104-127-180	114-140-197	123-151-213		
			Throw 22.5° (ft) 45°	26-41-76 15-24-44	36-55-88 21-32-51	46-68-99 26-40-57	55-76-108 32-44-63	64-83-117 37-48-68	72-88-125 42-51-73	81-99-140 47-57-81	88-108-153 51-63-89	95-117-165 55-68-96		
38x38	10.03	9.64	cfm	2892	3856	4820	5784	6748	7712	9640	11568	13496		
			NC	11	20	26	32	36	40	47	53	57		
			0°	33-53-99	47-71-114	59-88-128	71-99-140	83-107-151	93-114-161	104-128-181	114-140-198	123-151-214		
			Throw 22.5° (ft) 45°	26-41-77 15-24-44	37-55-88 21-32-51	46-69-99 27-40-57	55-77-108 32-44-63	64-83-117 37-48-68	72-88-125 42-51-73	81-99-140 47-57-81	88-108-153 51-63-89	96-117-166 55-68-96		
42x36	10.50	10.1	cfm	3030	4040	5050	6060	7070	8080	10100	12120	14140		
			NC	11	20	27	32	37	41	47	53	57		
			0°	34-54-101	48-72-117	60-91-131	72-101-143	85-109-155	95-117-165	107-131-185	117-143-202	126-155-219		
			Throw 22.5° (ft) 45°	26-42-78 15-24-46	37-56-91 22-33-53	47-70-101 27-41-59	56-78-111 33-46-64	65-85-120 38-49-70	74-91-128 43-53-74	83-101-143 48-59-83	91-111-157 53-64-91	98-120-169 57-70-98		
46x34	10.86	10.45	cfm	3135	4180	5225	6270	7315	8360	10450	12540	14630		
			NC	11	20	27	32	37	41	47	53	58		
			0°	34-55-103	49-74-119	61-92-133	74-103-146	86-111-157	97-119-168	109-133-188	119-146-206	128-157-222		
			Throw 22.5° (ft) 45°	27-43-80 16-25-46	38-57-92 22-33-53	48-71-103 28-41-60	57-80-113 33-46-66	67-86-122 39-50-71	75-92-130 44-53-76	84-103-146 49-60-85	92-113-160 53-66-93	99-122-172 58-71-100		

900H/900V, AL900/AL900V, 990H/990V, AL990H/AL990V Supply Registers

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

Nom. Duct Size (in.)	Nom. Duct Area (ft ²)	Core Area (ft ²)	NC-20			NC-30			NC-40			NC-50		
			Core Vel.	300	400	500	600	700	800	1000	1200	1400		
			Vel. Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122		
			Total 22.5° Press. 45°	0.016 0.018 0.028	0.029 0.033 0.049	0.046 0.051 0.077	0.066 0.074 0.111	0.090 0.100 0.152	0.117 0.131 0.198	0.183 0.204 0.309	0.263 0.294 0.445	0.358 0.401 0.606		
42x38	11.08	10.67	cfm	3201	4268	5335	6402	7469	8536	10670	12804	14938		
			NC	12	20	27	32	37	41	48	53	58		
			0°	35-56-104	50-74-120	62-93-134	74-104-147	87-112-159	98-120-170	110-134-190	120-147-208	130-159-225		
			Throw 22.5° (ft)	27-43-81	38-58-93	48-72-104	58-81-114	67-87-123	76-93-132	85-104-147	93-114-161	101-123-174		
			45°	16-25-47	22-34-54	28-42-60	34-47-66	39-51-71	44-54-76	49-60-85	54-66-94	58-71-101		
40x40	11.11	10.7	cfm	3210	4280	5350	6420	7490	8560	10700	12840	14980		
			NC	12	20	27	32	37	41	48	53	58		
			0°	35-56-104	50-75-120	62-93-134	75-104-147	87-113-159	98-120-170	110-134-190	120-147-208	130-159-225		
			Throw 22.5° (ft)	27-43-81	39-58-93	48-72-104	58-81-114	67-87-123	76-93-132	85-104-147	93-114-161	101-123-174		
			45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	49-61-86	54-66-94	58-72-101		
48x36	12.00	11.57	cfm	3471	4628	5785	6942	8099	9256	11570	13884	16198		
			NC	12	21	27	33	37	41	48	53	58		
			0°	36-58-108	52-78-125	65-97-140	78-108-153	90-117-165	102-125-177	114-140-198	125-153-217	135-165-234		
			Throw 22.5° (ft)	28-45-84	40-60-97	50-75-108	60-84-119	70-91-128	79-97-137	88-108-153	97-119-168	105-128-181		
			45°	16-26-49	23-35-56	29-44-63	35-49-69	41-53-74	46-56-80	51-63-89	56-69-97	61-74-105		
42x42	12.25	11.82	cfm	3546	4728	5910	7092	8274	9456	11820	14184	16548		
			NC	12	21	27	33	37	41	48	53	58		
			0°	37-59-109	52-78-126	65-98-141	78-109-155	91-118-167	103-126-179	115-141-200	126-155-219	137-167-236		
			Throw 22.5° (ft)	28-46-85	40-61-98	51-76-110	61-85-120	71-92-130	80-98-139	89-110-155	98-120-170	106-130-183		
			45°	16-26-49	24-35-57	29-44-64	35-49-70	41-53-75	46-57-80	52-64-90	57-70-99	61-75-106		
44x44	13.44	12.99	cfm	3897	5196	6495	7794	9093	10392	12990	15588	18186		
			NC	12	21	28	33	38	42	48	54	58		
			0°	38-62-115	55-82-133	68-103-148	82-115-162	96-124-175	108-133-187	121-148-210	133-162-230	143-175-248		
			Throw 22.5° (ft)	30-48-89	42-64-103	53-80-115	64-89-126	74-96-136	84-103-145	94-115-162	103-126-178	111-136-192		
			45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	54-67-94	60-73-103	64-79-112		
48x42	14.00	13.54	cfm	4062	5416	6770	8124	9478	10832	13540	16248	18956		
			NC	13	21	28	33	38	42	49	54	59		
			0°	39-63-117	56-84-135	70-105-151	84-117-166	98-127-179	110-135-191	124-151-214	135-166-234	146-179-253		
			Throw 22.5° (ft)	30-49-91	43-65-105	54-81-117	65-91-128	76-98-139	86-105-148	96-117-166	105-128-182	113-139-196		
			45°	18-28-53	25-38-61	31-47-68	38-53-75	44-57-81	50-61-86	56-68-96	61-75-105	66-81-114		
46x46	14.69	14.22	cfm	4266	5688	7110	8532	9954	11376	14220	17064	19908		
			NC	13	21	28	33	38	42	49	54	59		
			0°	40-64-120	57-86-139	72-107-155	86-120-170	100-130-183	113-139-196	127-155-219	139-170-240	150-183-259		
			Throw 22.5° (ft)	31-50-93	44-67-107	56-83-120	67-93-132	78-101-142	88-107-152	98-120-170	107-132-186	116-142-201		
			45°	18-29-54	26-39-62	32-48-70	39-54-76	45-58-83	51-62-88	57-70-99	62-76-108	67-83-117		
48x46	15.33	14.85	cfm	4455	5940	7425	8910	10395	11880	14850	17820	20790		
			NC	13	22	28	34	38	42	49	54	59		
			0°	41-66-123	59-88-142	73-110-158	88-123-174	102-133-187	116-142-200	129-158-224	142-174-245	153-187-265		
			Throw 22.5° (ft)	32-51-95	45-68-110	57-85-123	68-95-134	79-103-145	90-110-155	100-123-174	110-134-190	119-145-205		
			45°	18-30-55	26-40-64	33-49-71	40-55-78	46-60-84	52-64-90	58-71-101	64-78-110	69-84-119		
48x48	16.00	15.50	cfm	4650	6200	7750	9300	10850	12400	15500	18600	21700		
			NC	13	22	28	34	38	42	49	55	59		
			0°	42-67-125	60-90-145	75-112-162	90-125-177	105-135-192	118-145-205	132-162-229	145-177-251	156-192-271		
			Throw 22.5° (ft)	33-52-97	46-70-112	58-87-125	70-97-137	81-105-148	92-112-159	102-125-177	112-137-194	121-148-210		
			45°	19-30-56	27-40-65	34-50-73	40-56-80	47-61-86	53-65-92	59-73-103	65-80-113	70-86-122		

- 0°, 22.5° & 45° represent blade deflection angles
- Performance data is based on duct sizes in bold, the performance varies slightly for duct sizes not shown in bold
- See the section, Engineering Guidelines, for drop information when selecting larger supply grilles for cooling purposes
- See the "Performance Notes" portion in this section for notes and correction factors

- See the section, Engineering Guidelines, for catalog throw information
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10⁻¹² watts

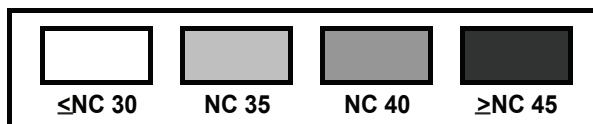


ALH/ALV, ALHM/ALVM, ALHOB/ALVOB, ALHV/ALVH, ALHVOB/ALVHOB Supply Register and Grilles

Deflection A

Face Velocity		400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss		.010	.016	.022	.031	.040	.050	.062	.075	.090	.105	.122	.160	.202	.249
8x4	CFM	60	80	95	110	125	140	155	170	185	205	220	250	280	310
Ak .156	Throw	6.5	8.5	10	12	13	15	16	18	19	22	23	26	29	33
10x4	CFM	80	100	120	140	160	180	200	220	240	260	275	315	355	395
Ak .198	Throw	7.5	9.5	12	13	15	17	19	20	22	24	26	29	33	37
12x4	CFM	95	120	145	170	190	215	240	265	290	310	335	385	430	480
Ak .240	Throw	8	10	12	14	16	18	20	22	25	26	28	33	36	41
14x4	CFM	115	140	170	195	225	255	280	310	340	365	395	450	510	565
Ak.282	Throw	9	11	13	15	18	20	22	24	27	29	31	35	40	44
12x5	CFM	125	155	185	215	250	280	310	340	370	405	435	495	560	620
Ak .310	Throw	9	12	14	16	19	21	23	25	28	30	32	37	42	46
10x6	CFM	125	155	190	220	250	280	315	345	375	405	440	500	565	625
Ak .313	Throw	9	12	14	16	19	21	23	26	28	30	33	37	42	46
14x5	CFM	145	180	220	255	290	330	365	400	435	475	510	580	655	730
Ak .364	Throw	10	12	15	18	20	23	25	28	30	33	35	40	45	50
12x6	CFM	150	190	225	265	305	340	380	415	455	495	530	605	680	760
Ak .379	Throw	10	13	15	18	21	23	26	28	31	33	36	41	46	51
16x5	CFM	165	210	250	295	335	375	420	460	500	545	585	670	750	835
Ak .418	Throw	11	13	16	19	22	24	27	30	32	35	38	43	48	54
14x6	CFM	180	225	270	310	355	400	445	490	535	580	625	715	805	890
Ak .446	Throw	11	14	17	19	22	25	28	30	33	36	39	44	50	55
16x6	CFM	205	255	305	360	410	460	510	565	615	665	715	820	920	1025
Ak .512	Throw	11	14	17	20	22	25	28	31	34	36	39	45	55	56
20x5	CFM	210	265	315	370	420	475	525	580	630	685	735	840	945	1050
Ak .526	Throw	12	15	18	21	24	27	30	33	36	39	42	48	54	60
24x5	CFM	255	315	380	445	505	570	635	695	760	825	890	1015	1140	1270
Ak .634	Throw	13	16	20	23	26	30	33	36	40	43	46	53	59	66
20x6	CFM	260	325	385	450	515	580	645	710	775	840	905	1030	1160	1290
Ak .645	Throw	13	17	20	23	27	30	33	37	40	43	47	53	60	67
24x6	CFM	310	390	465	545	620	700	775	855	930	1010	1090	1245	1400	1555
Ak .777	Throw	15	18	22	26	29	33	37	40	44	48	51	59	66	73
20x8	CFM	355	440	530	615	705	795	880	970	1060	1145	1235	1410	1590	1765
Ak .882	Throw	16	19	23	27	31	35	39	43	47	51	55	62	70	78
30x6	CFM	390	490	585	685	780	880	975	1075	1170	1270	1365	1560	1755	1950
Ak .976	Throw	16	21	25	29	33	37	41	45	49	53	57	66	74	82
24x8	CFM	425	530	635	740	850	955	1060	1165	1270	1380	1485	1695	1910	2120
Ak 1.06	Throw	17	21	23	30	34	38	43	47	51	56	60	68	77	85
30x8	CFM	535	670	805	940	1070	1205	1340	1475	1610	1740	1875	2145	2410	2680
Ak 1.34	Throw	19	24	29	34	38	43	48	53	58	62	67	77	87	96
24x10	CFM	540	675	810	945	1080	1215	1350	1485	1620	1755	1890	2160	2430	2700
Ak 1.35	Throw	19	24	29	34	39	43	48	53	58	63	68	77	87	97
36x8	CFM	645	805	965	1125	1290	1450	1610	1770	1930	2095	2255	2575	2900	3220
Ak 1.61	Throw	21	26	32	37	42	47	52	58	63	68	73	84	94	105
24x12	CFM	655	820	985	1150	1310	1475	1640	1805	1970	2130	2295	2625	2950	3280
Ak 1.64	Throw	21	27	32	37	43	48	53	59	64	69	75	85	96	107
30x10	CFM	675	845	1015	1185	1350	1520	1690	1860	2030	2195	2365	2705	3040	3380
Ak 1.69	Throw	21	27	32	38	43	48	54	59	65	70	75	86	97	108
36x10	CFM	815	1020	1225	1430	1630	1835	2040	2245	2450	2650	2855	3265	3670	4080
Ak 2.04	Throw	24	30	36	42	47	53	59	65	71	77	83	95	107	119
30x12	CFM	820	1025	1230	1435	1640	1845	2050	2255	2460	2665	2870	3280	3690	4100
Ak 2.05	Throw	24	30	36	42	48	54	59	65	71	77	83	95	107	119
36x12	CFM	990	1235	1480	1730	1975	2225	2470	2715	2965	3210	3460	3950	4445	4940
Ak 2.47	Throw	26	33	39	46	52	59	65	72	78	85	91	104	114	130

Terminal Velocity of 75 FPM

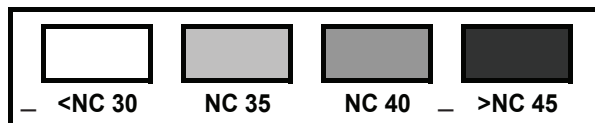


ALH/ALV, ALHM/ALVM, ALHOB/ALVOB, ALHV/ALVH, ALHVOB/ALVHOB Supply Register and Grilles

Deflection C

Face Velocity		400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss		.010	.016	.022	.031	.040	.050	.062	.075	.090	.105	.122	.160	.202	.249
8x4	CFM	55	70	85	100	115	125	140	155	170	185	195	225	255	280
Ak .141	Throw	5	6.5	7.5	9	10	11	13	14	15	17	18	20	23	25
10x4	CFM	70	90	105	125	140	160	180	195	215	230	250	285	320	355
Ak .178	Throw	5.5	7	8.5	10	11	13	14	16	17	18	20	23	26	29
12x4	CFM	85	110	130	150	175	195	215	240	260	280	300	345	390	430
Ak .216	Throw	6	8	9.5	11	13	14	16	18	19	20	22	25	28	31
14x4	CFM	100	125	150	180	205	230	255	280	305	330	355	405	455	510
Ak .254	Throw	7	8.5	10	12	14	16	17	19	21	22	24	27	31	34
12x5	CFM	110	140	165	195	225	250	280	305	335	365	390	445	500	560
Ak .279	Throw	7	9	11	13	14	16	18	20	22	23	25	29	32	36
10x6	CFM	115	140	170	195	225	255	280	310	340	365	395	450	510	565
Ak .282	Throw	7.5	9	11	12	14	16	18	20	22	23	25	29	33	36
14x5	CFM	130	165	195	230	260	295	330	360	395	425	460	525	590	655
Ak .328	Throw	7.5	10	12	14	15	17	20	21	23	25	27	31	35	39
12x6	CFM	135	170	205	240	275	310	340	375	410	445	480	545	615	685
Ak .342	Throw	8	10	12	14	16	18	20	22	24	26	28	32	36	40
16x5	CFM	150	190	225	265	300	340	375	415	450	490	525	605	680	755
Ak .377	Throw	8.5	11	12	15	17	19	21	23	25	27	29	34	38	41
14x6	CFM	165	205	245	290	330	370	410	455	495	535	575	660	740	825
Ak .412	Throw	9	11	13	16	18	22	22	24	27	28	31	35	40	44
16x6	CFM	185	230	275	325	370	415	460	510	555	600	645	740	830	925
Ak .462	Throw	9	11	13	15	18	20	22	24	26	28	31	35	39	44
20x5	CFM	190	235	285	330	380	425	475	520	570	615	665	760	855	950
Ak .474	Throw	9.5	12	14	16	19	21	23	26	28	30	33	38	42	47
24x5	CFM	230	285	345	400	460	515	570	630	685	745	800	915	1030	1145
Ak .572	Throw	10	13	15	18	21	23	26	28	33	33	36	41	46	51
20x6	CFM	230	290	350	405	465	525	580	640	695	755	815	930	1045	1160
Ak .581	Throw	10	13	16	18	21	23	26	29	31	34	36	41	47	52
24x6	CFM	280	350	420	490	560	630	700	770	840	910	980	1120	1260	1400
Ak .701	Throw	11	14	17	20	23	26	28	31	34	37	40	45	51	57
20x8	CFM	320	400	475	555	635	715	795	875	955	1035	1115	1270	1430	1590
Ak .795	Throw	12	15	18	21	24	27	30	33	36	39	42	48	54	61
30x6	CFM	350	440	530	615	705	790	880	970	1055	1145	1230	1410	1585	1760
Ak .880	Throw	13	16	19	22	26	29	32	35	38	41	46	51	57	64
24x8	CFM	385	480	575	670	765	865	960	1055	1150	1245	1345	1535	1725	1920
Ak .959	Throw	13	17	20	23	27	30	33	37	40	43	47	53	60	67
30x8	CFM	480	600	720	840	960	1080	1200	1320	1440	1560	1680	1920	2160	2400
Ak 1.20	Throw	15	19	22	26	30	33	37	41	45	48	52	60	67	74
24x10	CFM	490	610	730	855	975	1100	1220	1340	1465	1585	1710	1950	2200	2440
Ak 1.22	Throw	15	19	22	26	30	34	38	41	45	49	53	60	68	75
36x8	CFM	580	725	870	1015	1160	1305	1450	1595	1740	1885	2030	2320	2610	2900
Ak 1.45	Throw	16	20	25	29	33	37	41	45	49	53	57	65	74	82
24x12	CFM	590	735	880	1030	1175	1325	1470	1615	1765	1910	2060	2350	2645	2940
Ak 1.47	Throw	17	21	25	29	33	37	41	45	49	53	58	66	74	82
30x10	CFM	610	765	920	1070	1225	1375	1530	1685	1835	1990	2140	2450	2755	3060
Ak 1.53	Throw	17	21	25	29	34	38	42	46	50	55	59	67	76	84
36x10	CFM	735	920	1105	1290	1470	1655	1840	2025	2210	2390	2575	2945	3310	3680
Ak 1.84	Throw	18	23	28	32	37	42	46	51	55	60	65	74	83	92
30x12	CFM	740	925	1110	1295	1400	1665	1850	2035	2220	2405	2590	2960	3330	3700
Ak 1.85	Throw	19	23	28	32	37	42	46	51	56	60	65	74	83	93
36x12	CFM	890	1115	1340	1560	1785	2000	2230	2455	2675	2900	3120	3570	4015	4460
Ak 2.23	Throw	20	25	31	36	41	46	51	56	61	66	71	81	92	102

Terminal Velocity of 75 FPM



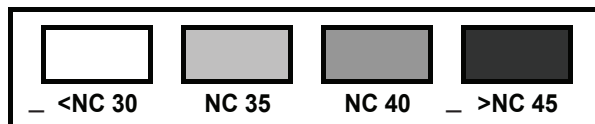


ALH/ALV, ALHM/ALVM, ALHOB/ALVOB, ALHV/ALVH, ALHVOB/ALVHOB Supply Register and Grilles

Deflection E

Face Velocity		400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss		.010	.016	.022	.031	.040	.050	.062	.075	.090	.105	.122	.160	.202	.249
8x4	CFM	45	60	70	85	95	105	120	130	140	155	165	190	210	235
Ak .127	Throw	2.5	3.5	4	5	5.5	6	6.5	7.5	8	8.5	9.5	11	12	13
10x4	CFM	60	75	90	105	120	135	150	165	180	195	210	240	270	300
Ak .162	Throw	3	3.5	4.5	5	6	6.5	7.5	8	9	9.5	10	12	13	15
12x4	CFM	80	100	120	140	160	175	195	215	235	255	275	315	355	395
Ak .197	Throw	4.5	6	7.5	8.5	10	11	12	13	14	16	17	19	22	24
14x4	CFM	90	115	140	160	185	210	230	255	275	300	325	370	415	460
Ak.231	Throw	5	6.5	8	9	11	12	13	14	16	17	18	21	23	26
12x5	CFM	100	125	150	180	205	230	255	280	305	330	355	405	455	510
Ak .254	Throw	5.5	6.5	8	9.5	12	12	14	15	16	18	19	22	25	27
10x6	CFM	105	130	155	180	205	230	255	285	310	335	360	410	465	515
Ak .257	Throw	5.5	7.5	8.5	9.5	11	12	14	15	17	18	19	22	25	28
14x5	CFM	120	150	180	210	240	270	300	330	360	385	415	475	535	595
Ak .291	Throw	6	7.5	9	10	12	13	15	16	18	19	21	24	27	30
12x6	CFM	125	155	185	220	250	280	310	340	375	405	435	500	560	620
Ak .311	Throw	6	7.5	9	11	12	14	15	17	18	20	21	24	28	30
16x5	CFM	135	170	205	240	275	310	345	375	410	445	480	550	615	685
Ak .343	Throw	6.5	8	9.5	11	13	14	16	17	19	21	22	26	29	32
14x6	CFM	145	185	220	255	290	330	365	400	440	475	510	585	655	730
Ak .365	Throw	6.5	8.5	10	11	13	15	16	18	20	21	23	26	29	33
16x6	CFM	170	215	260	300	345	390	430	475	545	560	605	690	775	860
Ak .431	Throw	7	9	11	12	14	16	18	20	21	23	25	28	32	36
20x5	CFM	190	235	280	330	375	425	470	515	565	610	660	750	845	940
Ak .470	Throw	7.5	9.5	11	13	15	17	19	20	22	24	26	30	33	37
24x5	CFM	210	260	310	365	415	470	520	570	625	675	730	830	935	1040
Ak .520	Throw	8	10	12	14	16	18	20	21	24	25	27	31	35	39
20x6	CFM	210	265	315	370	420	475	530	580	635	685	740	845	950	1055
Ak .528	Throw	8	10	12	14	16	18	20	22	24	26	28	32	35	39
24x6	CFM	255	320	380	445	510	575	635	700	765	830	890	1020	1145	1275
Ak .637	Throw	8.5	11	13	15	17	20	22	24	26	28	30	35	39	43
20x8	CFM	290	360	435	505	580	650	725	795	870	940	1010	1155	1300	1445
Ak .723	Throw	9	12	14	16	19	21	23	25	28	30	32	37	42	46
30x6	CFM	320	400	480	560	640	720	800	880	960	1040	1120	1280	1440	1600
Ak .800	Throw	10	12	15	17	19	22	24	27	29	32	34	39	44	49
24x8	CFM	350	435	525	610	700	785	870	960	1045	1135	1220	1400	1570	1745
Ak .872	Throw	10	13	15	18	20	23	25	28	30	33	36	41	48	51
30x8	CFM	435	545	655	765	870	980	1090	1200	1310	1415	1525	1745	1960	2180
Ak 1.09	Throw	11	14	17	20	23	25	28	31	34	37	40	45	51	57
24x10	CFM	445	555	665	775	890	1000	1110	1220	1330	1445	1555	1775	2000	2220
Ak 1.11	Throw	11	14	17	20	23	26	29	31	34	37	40	46	52	57
36x8	CFM	530	660	790	925	1055	1190	1320	1450	1585	1715	1850	2110	2375	2640
Ak 1.32	Throw	14	17	21	24	27	31	34	38	41	45	48	55	62	69
24x12	CFM	535	670	805	940	1070	1205	1340	1475	1610	1740	1875	2145	2410	2680
Ak 1.34	Throw	13	16	19	22	25	28	31	35	38	41	44	50	57	63
30x10	CFM	555	695	835	975	1110	1250	1390	1530	1670	1805	1945	2225	2500	2780
Ak 1.39	Throw	13	16	19	22	26	29	32	38	38	42	45	51	58	64
36x10	CFM	670	835	1000	1170	1335	1505	1670	1835	2005	2170	2340	2670	3005	3340
Ak 1.67	Throw	14	18	21	25	28	32	35	39	42	46	49	56	63	70
30x12	CFM	670	840	1010	1175	1345	1510	1680	1850	2015	2185	2350	2690	3025	3360
Ak 1.68	Throw	14	16	21	25	28	32	35	39	42	46	49	56	63	70
36x12	CFM	810	1015	1220	1420	1625	1825	2030	2235	2435	2640	2840	3250	3655	4060
Ak 2.03	Throw	15	19	23	27	31	35	39	43	46	50	54	62	70	78

Terminal Velocity of 75 FPM

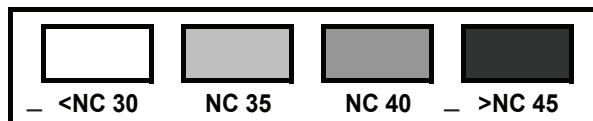


ALH/ALV, ALHM/ALVM, ALHOB/ALVOB, ALHV/ALVH, ALHVOB/ALVHOB Supply Register and Grilles

Deflection G

Face Velocity		400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss		.010	.016	.022	.031	.040	.050	.062	.075	.090	.105	.122	.160	.202	.249
8x4	CFM	45	60	70	85	95	105	120	130	140	155	165	190	210	235
Ak .118	Throw	2.5	3.5	4	5	5.5	6	6.5	7.5	8	8.5	9.5	11	12	13
10x4	CFM	60	75	90	105	120	135	150	165	180	195	210	240	270	300
Ak .149	Throw	3	3.5	4.5	5	6	6.5	7.5	8	9	9.5	10	12	13	15
12x4	CFM	70	90	110	125	145	165	180	200	215	235	255	290	325	360
Ak .181	Throw	3	4	5	5.5	6.5	7.5	8	9	10	11	12	13	15	16
14x4	CFM	85	105	125	150	170	190	210	235	255	275	300	340	380	425
Ak.212	Throw	3.5	4.5	5	6.5	7	8	9	10	11	12	13	14	16	18
12x5	CFM	95	115	140	165	185	210	235	255	280	305	325	375	420	465
Ak .233	Throw	4	4.5	5.5	6.5	7.5	8.5	9.5	10	11	12	13	15	17	19
10x6	CFM	95	120	140	165	190	210	235	260	285	305	330	380	425	470
Ak .236	Throw	4	5	5.5	6.5	7.5	8.5	9.5	10	11	12	13	15	17	19
14x5	CFM	110	135	165	190	220	245	275	300	330	355	385	440	495	550
Ak .274	Throw	4	5	6	7	8	9	10	11	12	13	14	16	18	20
12x6	CFM	115	145	170	200	230	255	285	315	345	370	400	460	515	570
Ak .286	Throw	4	5	6	7	8.5	9	10	11	12	13	14	17	19	21
16x5	CFM	125	160	190	220	250	285	315	345	380	410	440	505	565	630
Ak .315	Throw	4.5	5.5	6.5	7.5	8.5	10	11	12	13	14	15	17	19	22
14x6	CFM	135	170	200	235	270	300	335	370	405	435	470	540	605	670
Ak .336	Throw	4.5	5.5	6.5	8	9	10	11	12	13	13	16	18	20	22
16x6	CFM	155	195	230	270	310	345	385	425	465	500	540	620	695	770
Ak .386	Throw	4.5	5.5	6.5	8	9	10	11	12	14	15	16	18	20	23
20x5	CFM	160	200	240	280	320	355	395	435	475	515	555	635	715	795
Ak .397	Throw	5	6	7.5	8.5	10	11	12	13	15	16	17	19	22	24
24x5	CFM	190	240	285	335	380	430	480	525	575	620	670	765	860	955
Ak .478	Throw	5.5	6.5	8	9.5	11	12	13	15	16	17	19	21	24	27
20x6	CFM	195	245	290	340	390	435	485	535	585	630	680	780	875	970
Ak .486	Throw	5.5	7	8	9.5	11	12	13	15	16	17	19	22	24	27
24x6	CFM	235	295	350	410	470	525	585	645	705	760	820	940	1055	1170
Ak .586	Throw	6	7.5	9	10	12	13	15	16	18	19	21	24	27	29
20x8	CFM	265	335	400	465	530	600	665	730	800	865	930	1065	1195	1330
Ak .665	Throw	6.5	8	9.5	11	13	14	16	17	19	21	22	25	28	32
30x6	CFM	295	370	440	515	590	660	735	810	885	955	1030	1180	1325	1470
Ak .736	Throw	6.5	8.5	10	12	13	15	17	18	20	21	23	27	30	33
24x8	CFM	320	400	480	560	640	720	800	880	960	1045	1125	1285	1445	1605
Ak .802	Throw	7	8.5	10	12	14	15	17	19	21	22	24	28	31	35
30x8	CFM	405	505	605	705	810	910	1010	1110	1210	1315	1415	1615	1820	2020
Ak 1.01	Throw	8	9.5	12	14	16	17	19	21	23	25	27	31	35	39
24x10	CFM	410	510	610	715	815	920	1020	1120	1225	1325	1430	1630	1835	2040
Ak 1.02	Throw	8	9.5	12	14	16	18	19	21	23	25	27	31	35	40
36x8	CFM	485	605	725	845	970	1090	1210	1330	1450	1575	1695	1935	2180	2420
Ak 1.21	Throw	8.5	11	13	15	17	19	21	23	25	28	30	34	38	42
24x12	CFM	490	615	740	860	985	1105	1230	1355	1475	1600	1720	1970	2215	2460
Ak 1.23	Throw	8.5	11	13	15	17	19	21	24	26	28	30	34	39	43
30x10	CFM	510	640	770	900	1025	1150	1280	1410	1535	1665	1790	2050	2305	2560
Ak 1.28	Throw	8.5	11	13	15	18	20	22	24	26	28	31	35	39	44
36x10	CFM	615	770	925	1080	1230	1385	1540	1695	1850	2000	2155	2465	2770	3080
Ak 1.54	Throw	9.5	12	14	17	19	22	24	26	29	31	34	38	43	48
30x12	CFM	620	775	930	1085	1240	1395	1550	1705	1860	2015	2170	2480	2790	3100
Ak 1.55	Throw	9.5	12	14	17	19	22	24	26	29	31	34	38	43	48
36x12	CFM	745	930	1115	1300	1490	1675	1860	2045	2230	2420	2605	2975	3350	3720
Ak 1.86	Throw	11	13	16	18	21	24	26	29	31	34	37	42	47	52

Terminal Velocity of 75 FPM





ALHR90 Return Air Registers and Grilles

Avg. Face Velocity*		400	500	600	700	800	900	1000
6 x 6	CFM	60	70	90	100	120	130	150
Ak .145	Ps	.037	.058	.083	.113	.148	.189	.232
8 x 8	CFM	103	129	155	181	207	233	259
Ak .259	Ps	.011	.017	.024	.034	.043	.054	.067
12 x 6	CFM	119	148	178	208	237	267	297
Ak .297	Ps	.011	.017	.024	.034	.043	.054	.067
14 x 6	CFM	141	177	212	248	283	318	354
Ak .354	Ps	.011	.017	.024	.033	.042	.053	.066
14 x 8	CFM	195	244	292	341	390	438	487
Ak .487	Ps	.010	.016	.023	.032	.041	.052	.064
12 x 12	CFM	256	320	384	448	512	576	640
Ak .640	Ps	.010	.016	.022	.030	.040	.050	.062
24 x 8	CFM	348	435	523	610	697	784	871
Ak .871	Ps	.009	.015	.021	.028	.038	.045	.055
18 x 12	CFM	395	493	592	691	789	888	987
Ak .987	Ps	.009	.014	.021	.027	.037	.044	.054
30 x 8	CFM	441	552	662	772	882	993	1103
Ak 1.10	Ps	.009	.014	.020	.026	.036	.043	.053
24 x 12	CFM	535	668	802	936	1069	1203	1337
Ak 1.34	Ps	.009	.014	.019	.025	.035	.042	.052
18 x 18	CFM	605	756	907	1059	1210	1361	1512
Ak 1.51	Ps	.008	.013	.018	.023	.033	.040	.050
30 x 12	CFM	676	845	1014	1182	1351	1520	1689
Ak 1.69	Ps	.008	.013	.018	.023	.032	.039	.049
20 x 20	CFM	755	943	1132	1321	1509	1698	1887
Ak 1.89	Ps	.008	.012	.017	.022	.031	.038	.048
36 x 12	CFM	818	1023	1227	1432	1636	1841	2045
Ak 2.05	Ps	.007	.012	.017	.021	.030	.037	.047
24 x 20	CFM	914	1142	1370	1599	1827	2055	2284
Ak 2.28	Ps	.007	.012	.016	.021	.028	.035	.045
30 x 18	CFM	1034	1292	1551	1809	2068	2326	2584
Ak 2.58	Ps	.007	.011	.015	.020	.026	.033	.043
24 x 24	CFM	1106	1383	1659	1936	2213	2489	2766
Ak 2.77	Ps	.007	.011	.016	.021	.025	.035	.042
36 x 18	CFM	1252	1565	1878	2191	2505	2818	3131
Ak 3.13	Ps	.007	.011	.017	.022	.027	.037	.045
30 x 24	CFM	1399	1749	2099	2449	2799	3149	3499
Ak 3.50	Ps	.008	.012	.018	.023	.029	.039	.048
36 x 24	CFM	1697	2122	2546	2971	3395	3819	4244
Ak 4.24	Ps	.008	.014	.020	.026	.033	.044	.054
30 x 30	CFM	1773	2216	2659	3102	3546	3989	4432
Ak 4.43	Ps	.009	.014	.020	.027	.034	.045	.056
36 x 30	CFM	2154	2692	3231	3769	4307	4846	5384
Ak 5.38	Ps	.010	.016	.023	.031	.040	.051	.063
48 x 24	CFM	2308	2885	3462	4039	4616	5193	5771
Ak 5.77	Ps	.010	.017	.024	.032	.042	.053	.066
36 x 36	CFM	2621	3276	3931	4587	5242	5897	6552
Ak 6.55	Ps	.011	.018	.026	.035	.046	.058	.072
48 x 36	CFM	3588	4485	5382	6279	7176	8073	8971
Ak 8.97	Ps	.010	.016	.023	.031	.040	.051	.063
48 x 48	CFM	4946	6183	7419	8656	9893	11129	12366
Ak 12.40	Ps	.010	.016	.023	.031	.041	.052	.064

ALH45FF and ALHR45 Return Air Registers and Grilles

Avg. Face Velocity*		400	500	600	700	800	900	1000
6 x 6	CFM	50	63	76	88	101	113	126
Ak .126	Ps	.011	.018	.025	.036	.044	.056	.069
8 x 8	CFM	100	120	140	170	190	220	240
Ak .241	Ps	.032	.050	.072	.098	.128	.163	.200
12 x 6	CFM	110	140	170	190	220	250	280
Ak .278	Ps	.031	.048	.069	.094	.122	.155	.191
14 x 6	CFM	130	170	200	230	270	300	330
Ak .334	Ps	.029	.045	.065	.088	.114	.145	.179
14 x 8	CFM	190	230	280	330	370	420	460
Ak .464	Ps	.025	.039	.055	.075	.097	.123	.152
12 x 12	CFM	250	310	370	430	490	550	610
Ak .614	Ps	.021	.032	.046	.062	.079	.100	.125
24 x 8	CFM	340	420	500	590	670	760	840
Ak .839	Ps	.020	.032	.046	.061	.079	.100	.124
18 x 12	CFM	380	480	570	670	760	860	950
Ak .952	Ps	.020	.032	.046	.061	.080	.101	.124
30 x 8	CFM	430	530	640	750	850	960	1100
Ak 1.07	Ps	.020	.032	.046	.061	.080	.101	.124
24 x 12	CFM	520	650	780	900	1000	1200	1300
Ak 1.29	Ps	.020	.032	.046	.062	.081	.102	.124
18 x 18	CFM	580	730	880	1000	1200	1300	1500
Ak 1.46	Ps	.020	.032	.046	.062	.081	.102	.124
30 x 12	CFM	650	820	980	1100	1300	1500	1600
Ak 1.63	Ps	.021	.032	.046	.062	.082	.103	.124
20 x 20	CFM	730	910	1100	1300	1500	1600	1800
Ak 1.82	Ps	.021	.032	.046	.063	.083	.104	.124
36 x 12	CFM	790	990	1200	1400	1600	1800	2000
Ak 1.98	Ps	.021	.032	.046	.063	.084	.105	.125
24 x 20	CFM	880	1100	1300	1500	1800	2000	2200
Ak 2.21	Ps	.021	.032	.047	.064	.085	.107	.126
30 x 18	CFM	1000	1200	1500	1700	2000	2200	2500
Ak 2.50	Ps	.021	.033	.048	.065	.087	.109	.128
24 x 24	CFM	1100	1300	1600	1900	2100	2400	2700
Ak 2.67	Ps	.022	.033	.048	.066	.088	.110	.130
36 x 18	CFM	1200	1500	1800	2100	2400	2700	3000
Ak3.02	Ps	.023	.035	.051	.069	.092	.116	.137
30 x 24	CFM	1300	1700	2000	2400	2700	3000	3400
Ak 3.37	Ps	.024	.037	.053	.073	.096	.121	.144
36 x 24	CFM	1600	2000	2400	2900	3300	3700	4100
Ak 4.08	Ps	.027	.040	.058	.080	.105	.132	.158
30 x 30	CFM	1700	2100	2600	3000	3400	3800	4300
Ak 4.26	Ps	.027	.041	.060	.081	.107	.135	.162
36 x 30	CFM	2100	2600	3100	3600	4100	4600	5200
Ak 5.15	Ps	.030	.045	.066	.090	.117	.149	.179
48 x 24	CFM	2200	2800	3300	3900	4400	5000	5500
Ak 5.51	Ps	.031	.047	.069	.093	.122	.154	.186
36 x 36	CFM	2500	3100	3700	4400	5000	5600	6200
Ak 6.24	Ps	.034	.051	.074	.100	.130	.165	.200
48 x 36	CFM	3400	4200	5100	5900	6800	7600	8500
Ak 8.48	Ps	.025	.038	.055	.075	.098	.124	.153
48 x 48	CFM	4600	5800	6900	8100	9200	10000	12000
Ak 11.60	Ps	.022	.034	.048	.066	.086	.109	.134

*Velocity measured 1 inch from face. Multiple readings are taken in face areas not exceeding 6" x 6", but in no case less than 6 readings, to ensure a representative CFM = Ak x Average Measured Velocity.

ALC / ALCML / ALCOBD Curved-Blade Diffusers

Selection Procedure

1. Determine the diffuser air pattern best suited to the duct layout and room area to be served.
2. Select the air pattern type and CFM per outlet. The ALC tables gives the recommended limits of air volume per outlet for various ceiling heights. Choose the correct table for the style diffuser selected. Outlets are assumed to be mounted flush on the ceiling with no obstruction to the air stream.
3. Turn to the proper SIZE TABLE for the air pattern desired.
4. Determine the appropriate size based on the CFM, Throw, Pressure Loss, and Face Velocity requirements.

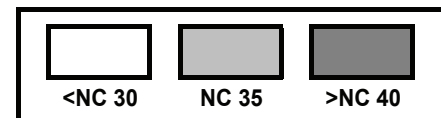
One-Way, Two Way

Face Velocity		400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.010	.016	.022	.031	.040	.050	.062	.075	.090
6 x 6	CFM	0.35	45	55	65	70	80	90	100	110
Ak .09	Throw 1/2	3.5/2.5	5/3.5	6/4	7/5	7.5/5.5	8.5/6	9.5/7	11/7.5	11.5/8.5
8 x 6	CFM	40	50	60	70	80	90	100	110	120
Ak .10	Throw 1/2	3.5/2.5	4.5/3	5.5/4	6.5/4.5	7/5	8/6	9/6.5	10/7	11/7.5
10 x 6	CFM	60	75	90	105	120	135	150	165	180
Ak .15	Throw 1/2	5/3.5	6/4.5	7/5	8.5/6	9.5/7	11/7.5	12/8.5	13/9.5	14/10
8 x 8	CFM	65	80	95	110	130	145	160	175	190
Ak .16	Throw 1/2	5/3.5	6/4.5	7.5/5	8.5/6	10/7	11/8	12/9	14/9.5	15/10
12 x 6	CFM	70	90	110	125	145	160	180	200	215
Ak .18	Throw 1/2	5/3.5	6.5/4.5	8/5.5	9/6.5	11/7.5	12/8.5	13/9.5	15/10	16/11
14 x 6	CFM	85	105	125	145	170	190	210	230	250
Ak .21	Throw 1/2	5.5/4	7/5	8.5/6	10/7	11/8	13/9	14/10	16/11	17/12
10 x 10	CFM	95	120	145	170	190	215	240	265	290
Ak .24	Throw 1/2	6/4	7.5/5	9/6.5	10/7.5	12/8	13/9.5	15/10	16/11	18/13
12 x 10	CFM	115	145	175	205	230	260	290	320	350
Ak .29	Throw 1/2	6.5/4.5	8/5.5	9.5/7	11/8	13/9	14/10	16/11	18/13	19/14
16 x 8	CFM	125	155	185	215	250	280	310	340	370
Ak .31	Throw 1/2	6.5/5	8.5/6	10/7	12/8	13/9.5	15/11	17/12	18/13	20/14
12 x 12	CFM	140	175	210	245	280	315	350	385	420
Ak .35	Throw 1/2	7/5	9/6	11/7.5	12/8.5	14/10	16/11	18/12	19/14	21/15
16 x 12	CFM	185	230	275	320	370	415	460	505	550
Ak .46	Throw 1/2	8/5.5	10/7	12/8.5	14/10	16/11	18/13	20/14	22/16	24/17
14 x 14	CFM	190	240	290	335	385	430	480	530	575
Ak .48	Throw 1/2	8/5.5	10/7.5	12/9	14/10	17/12	18/13	21/15	23/16	25/17
16 x 16	CFM	250	315	380	440	505	565	630	695	755
Ak .63	Throw 1/2	9.5/6.5	12/8.5	14/10	16/12	19/13	21/15	23/17	26/18	28/20
20 x 14	CFM	270	340	410	475	545	610	680	750	815
Ak .68	Throw 1/2	9.5/7	12/8.5	15/10	17/12	19/14	22/15	24/17	27/19	29/21
24 x 12	CFM	280	350	420	490	560	630	700	770	840
Ak .70	Throw 1/2	10/7	12/8.5	15/10	17/12	20/14	22/16	25/17	27/19	30/21
30 x 10	CFM	290	365	440	510	585	655	730	805	875
Ak .73	Throw 1/2	10/7	13/9	15/11	18/12	20/14	23/16	25/18	28/20	30/21
36 x 10	CFM	350	440	530	615	705	790	880	970	1055
Ak .88	Throw 1/2	11/8	14/10	17/12	19/14	22/16	25/18	28/20	31/22	33/24
36 x 12	CFM	420	525	630	735	840	945	1050	1155	1260
Ak 1.05	Throw 1/2	12/8.5	15/11	18/13	21/15	24/17	27/19	30/21	33/23	36/25
30 x 16	CFM	460	575	690	805	920	1035	1150	1265	1380
Ak 1.15	Throw 1/2	12/9	16/11	19/13	22/15	25/18	28/20	31/22	34/24	37/26
36 x 16	CFM	560	700	840	980	1120	1260	1400	1540	1680
Ak 1.40	Throw 1/2	14/9.5	17/12	21/15	24/17	27/19	31/22	34/24	38/27	41/29

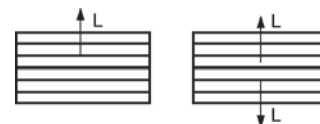
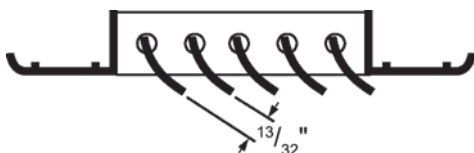
Terminal Velocity of 75 FPM

Curved-Blade - ALC Series

Ceiling Height in Feet	Maximum Cooling Temperature Differential (°F)	Maximum CFM per Outlet			
		1-way	2-way	3-way	4-way
7	15°	75	150	225	300
8	18°	100	200	300	400
9	20°	200	400	600	800
10	22°	300	600	900	1200
11	25°	400	800	1200	1600
12	25°	500	1000	1500	2000
14	25°	700	1400	2100	2800
16	25°	900	1800	2700	3600



The Face Bars on the Curved-Blade Diffuser should be preset to the dimension shown below.

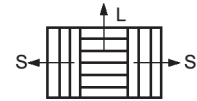




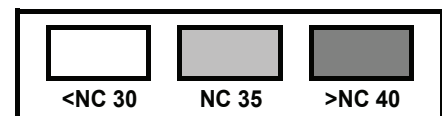
ALC / ALCML / ALCOBD Curved-Blade Diffusers

Three-Way

Face Velocity		400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.010	.016	.022	.031	.040	.050	.062	.075	.090
6 x 6 Ak .09	Total CFM	35	45	55	65	70	80	90	100	110
	CFM L/S	9/13	11/17	15/20	17/24	18/26	22/29	24/33	26/37	30/40
	Throw L/S	2/2	2.5/3	3/3.5	3.5/4	4/4.5	4.5/5	5/6	5.5/6.5	6/7
8 x 6 Ak .10	Total CFM	40	50	60	70	80	90	100	110	120
	CFM L/S	18/11	24/13	28/16	32/19	36/22	42/24	46/27	50/30	56/32
	Throw L/S	2.5/2	3/2.5	3.5/3	4.5/3.5	5/4	5.5/4.5	6/5	7/5	7.5/5.5
10 x 6 Ak .15	Total CFM	60	75	90	105	120	135	150	165	180
	CFM L/S	22/19	27/24	32/29	39/33	44/38	49/43	54/48	61/52	66/57
	Throw L/S	3/2.5	3.5/3	4.5/4	5/4.5	6/5	6.5/5.5	7/6.5	8/7	9/7.5
8 x 8 Ak .16	Total CFM	65	80	95	110	130	145	160	175	190
	CFM L/S	31/17	36/22	43/26	50/30	60/35	67/39	74/43	81/47	88/51
	Throw L/S	3.5/2.5	4/3.5	5/4	5.5/4.5	7/5	7.5/6	8.5/6.5	9/7	10/7.5
12 x 6 Ak .18	Total CFM	70	90	110	125	145	160	180	200	215
	CFM L/S	20/25	26/32	32/39	37/44	43/51	48/56	54/63	60/70	65/75
	Throw L/S	2.5/3	3.5/4	4.5/5	5/5.5	5.5/6.5	6.5/7	7/8	8/8.5	8.5/9.5
14 x 6 Ak .21	Total CFM	85	105	125	145	170	190	210	230	250
	CFM L/S	21/32	27/39	31/47	37/54	44/63	48/71	54/78	58/86	64/93
	Throw L/S	2.5/3.5	3.5/4.5	4/5	5/6	6/7	6.5/8	7/8.5	8/9.5	17/12
10 x 10 Ak .24	Total CFM	95	120	145	170	190	215	240	265	290
	CFM L/S	35/30	44/38	53/46	62/54	70/60	79/68	88/76	97/84	106/92
	Throw L/S	3.5/3	4.5/4	5.5/5	6/6	7/6.5	8/7.5	9/8	10/9	11/10
12 x 10 Ak .29	Total CFM	115	145	175	205	230	260	290	320	350
	CFM L/S	35/40	44/51	53/61	62/72	70/80	78/91	88/101	96/112	106/122
	Throw L/S	3.5/4	4.5/5	5.5/5.5	6.5/7	7/7.5	8/8.5	9/9.5	9.5/11	11/11
16 x 8 Ak .31	Total CFM	125	155	185	215	250	280	310	340	370
	CFM L/S	43/41	55/50	65/60	75/70	88/81	98/91	108/101	120/110	130/120
	Throw L/S	4/4	5/4.5	6/5.5	7/6.5	8/7.5	9/8.5	10/9.5	11/10	12/11
12 x 12 Ak .35	Total CFM	140	175	210	245	280	315	350	385	420
	CFM L/S	42/49	53/61	62/74	73/86	84/98	95/110	105/123	115/135	126/147
	Throw L/S	4/4	5/5	6/6.5	6.5/7.5	7.5/8.5	8.5/9.5	9.5/10	11/11	13/13
16 x 12 Ak .46	Total CFM	185	230	275	320	370	415	460	505	550
	CFM L/S	65/60	80/75	97/89	113/104	130/120	146/134	162/149	178/164	194/178
	Throw L/S	4.5/4.5	6/5.5	7/7	8.5/8	9.5/9	11/10	12/11	13/12	14/14
14 x 4 Ak .48	Total CFM	190	240	290	335	385	430	480	530	575
	CFM L/S	48/71	62/89	74/108	86/125	99/143	110/160	123/179	136/197	147/214
	Throw L/S	4/5	5/6.5	6.5/7.5	7.5/9	8.5/10	9.5/11	10/13	12/14	13/15
16 x 16 Ak .63	Total CFM	250	315	380	440	505	565	630	695	755
	CFM L/S	88/81	111/102	134/123	155/143	178/164	199/183	222/204	245/225	266/245
	Throw L/S	5.5/5.5	7/7	8.5/8	9.5/9.5	11/11	13/12	14/13	15/15	17/16
20 x 14 Ak .68	Total CFM	270	340	410	475	545	610	680	750	815
	CFM L/S	76/97	95/122	115/148	133/171	153/196	171/220	190/245	210/270	228/293
	Throw L/S	5/6	6.5/7	7.5/9	9/10	10/12	12/13	13/15	14/16	15/17
24 x 12 Ak .70	Total CFM	280	350	420	490	560	630	700	770	840
	CFM L/S	90/95	112/119	134/143	156/167	178/191	200/215	222/239	244/263	268/286
	Throw L/S	5.5/5.5	7/7	8.5/8.5	9.5/10	11/12	12/13	14/14	15/16	17/17
30 x 10 Ak .73	Total CFM	290	365	440	510	585	655	730	805	875
	CFM L/S	92/99	117/124	140/150	164/173	187/199	210/223	234/248	258/274	280/298
	Throw L/S	5.5/6	7/7.5	8.5/9	10/10	11/12	13/13	14/15	16/16	17/18
36 x 10 Ak .88	Total CFM	350	440	530	615	705	790	880	970	1055
	CFM L/S	113/118	143/149	172/179	199/208	228/238	256/267	285/297	314/328	342/357
	Throw L/S	6.5/6.5	8/8	9.5/9.5	11/11	13/13	14/14	16/16	17/18	19/19
36 x 12 Ak 1.05	Total CFM	420	525	630	735	840	945	1050	1155	1260
	CFM L/S	135/142	169/178	203/214	237/249	270/285	304/320	338/356	372/392	406/427
	Throw L/S	7/7	8.5/9	10/11	12/12	14/14	15/16	17/18	19/19	20/21
30 x 16 Ak 1.15	Total CFM	460	575	690	805	920	1035	1150	1265	1380
	CFM L/S	148/156	183/196	220/235	258/274	295/313	331/352	368/391	405/430	442/469
	Throw L/S	7/7	9/9	10/11	12/13	14/15	16/16	18/18	19/20	21/22
36 x 16 Ak 1.40	Total CFM	560	700	840	980	1120	1260	1400	1540	1680
	CFM L/S	180/190	226/237	270/285	316/332	360/380	406/427	450/475	496/522	540/570
	Throw L/S	8/8	10/10	12/12	14/14	16/16	18/18	19/20	21/22	23/24



Terminal Velocity of 75 FPM

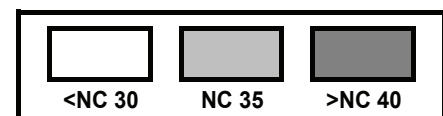
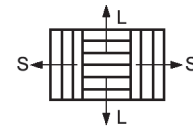


ALC / ALCML / ALCOBD Curved-Blade Diffusers

Four-Way

Face Velocity		400	500	600	700	800	900	1000	1100	1200
Pressure Loss		.010	.016	.022	.031	.040	.050	.062	.075	.090
6 x 6 Ak .09	Total CFM	35	45	55	65	70	80	90	100	110
	CFM L/S	5/13	6/17	7/20	9/24	9/26	11/29	12/33	13/37	15/40
	Throw L/S	1.5/2	1.5/3	2/3.5	2.5/4	2.5/4.5	3.5	3.5/6	4/6.5	4.5/7
8 x 6 Ak .10	Total CFM	40	50	60	70	80	90	100	110	120
	CFM L/S	9/11	12/13	14/16	16/19	18/22	21/24	23/27	25/30	28/32
	Throw L/S	1.5/1.5	2.5/2	2.5/2.5	3/2.5	3.5/3	4/3.5	4.5/4	4.5/4.5	5.5/4.5
10 x 6 Ak .15	Total CFM	60	75	90	105	120	135	150	165	180
	CFM L/S	11/19	14/24	16/29	19/33	22/38	25/43	27/48	30.52	33/57
	Throw L/S	2/2.5	2.5/3.5	3/4	3.5/4.5	4/5.5	4.5/6	5/7	5.5/7.5	6/8
8 x 8 Ak .16	Total CFM	65	80	95	110	130	145	160	175	190
	CFM L/S	15/17	18/22	22/26	25/30	30/35	33/39	37/43	40/47	44/51
	Throw L/S	2.5/2	3/2.5	3.5/3	4/3.5	5/4.5	5.5/5	6/5.5	6.5/6	7/6.5
12 x 6 Ak .18	Total CFM	70	90	110	125	145	160	180	200	215
	CFM L/S	10/25	13/32	16/39	19/44	22/51	24/56	27/63	30/70	32.75
	Throw L/S	2/3	2.5/4	3/5	3.5/5.5	4/6.5	4.5/7	5/8	5.5/8.5	6/9.5
14 x 6 Ak .21	Total CFM	85	105	125	145	170	190	210	230	250
	CFM L/S	11/32	13/39	16/47	18/54	22/63	24/71	27/78	29/86	32/93
	Throw L/S	2/3.5	2.5/4.5	3/5	3.5/6	4/7	4.5/8	5/8.5	5.5/9.5	6/10
10 x 10 Ak .24	Total CFM	95	120	145	170	190	215	240	265	290
	CFM L/S	17/30	22/38	26/46	31/54	35/60	39/68	44/76	48/84	53/92
	Throw L/S	2.5/3	3/4	3.5/5	4.5/6	5/6.5	5.5/7.5	6.5/8	7/9	7.5/10
12 x 10 Ak .29	Total CFM	115	145	175	205	230	260	290	320	350
	CFM L/S	17/40	22/51	26/61	31/72	35/80	39/91	44/101	48/112	53.122
	Throw L/S	2.5/4	3/5	3.5/5.5	4.5/7	5/7.5	5.5/8.5	6.5/9.5	7/11	7.5/11
16 x 8 Ak .31	Total CFM	125	155	185	215	250	280	310	340	370
	CFM L/S	22/41	27/50	33/60	38/70	44/81	49/91	55/100	60/110	65/120
	Throw L/S	3/4	3.5/4.5	4/5.5	5/6.5	5.5/7.5	6.5/8.5	7/9.5	7.5/10	8.5/11
12 x 12 Ak .35	Total CFM	140	175	210	245	280	315	350	385	420
	CFM L/S	21/49	26.61	31/74	37/86	42.98	47/110	52/123	58/135	63/147
	Throw L/S	2.5/4	3.5/5	4/6.5	5/7.5	5.5/8.5	6/9.5	7/10	7.5/11	8/13
16 x 12 Ak .46	Total CFM	185	230	275	320	370	415	460	505	550
	CFM L/S	33/60	40/75	48/89	56/104	65/120	73.135	81/149	89/164	97/178
	Throw L/S	3.5/4.5	4/5.5	5/7	6/8	7/9	7.5/10	8.5/11	9/12	10/14
14 x 4 Ak .48	Total CFM	190	240	290	335	385	430	480	530	575
	CFM L/S	24/71	31/89	37/108	43/125	49/143	55/160	61/179	68/197	74/214
	Throw L/S	3/5	3.5/6.5	4.5/7.5	5/9	6/10	6.5/11	7.5/13	8/14	9/15
16 x 16 Ak .63	Total CFM	250	315	380	440	505	565	630	695	755
	CFM L/S	44/81	55/102	67/123	77/143	89/164	99/183	111/204	122/225	133/245
	Throw L/S	4/5.5	5/6.5	6/8	7/9.5	8/11	9/12	10/13	11/15	12/16
20 x 14 Ak .68	Total CFM	270	340	410	475	545	610	680	750	815
	CFM L/S	38/97	48/122	57/148	67/171	76/196	85/220	95/245	105/270	114/293
	Throw L/S	3.5/6	4.5/7	5.5/9	6.5/10	7/12	8/13	9/15	10/16	11/17
24 x 12 Ak .70	Total CFM	280	350	420	490	560	630	700	770	840
	CFM L/S	45/95	56/119	67/143	78/167	89/191	100/215	111/239	122/263	134/286
	Throw L/S	4/5.5	5/7	6/8.5	7/10	8/12	9/13	10/14	11/16	12/17
30 x 10 Ak .73	Total CFM	290	365	440	510	585	655	730	805	875
	CFM L/S	46/99	58/124	70/150	82/173	94/199	105/223	117/248	129/274	140/298
	Throw L/S	4/6	5/7.5	6/9	7/10	8/12	9/13	10/15	11/16	12/18
36 x 10 Ak .88	Total CFM	350	440	530	615	705	790	880	970	1055
	CFM L/S	57/118	71/149	86/179	100/208	114/238	128/267	143/297	157/328	171/357
	Throw L/S	4.5/6.5	5.5/8	6.5/9.5	8/11	9/13	10/14	11/16	12/18	13/19
36 x 12 Ak 1.05	Total CFM	420	525	630	735	840	945	1050	1155	1260
	CFM L/S	67/142	85/178	101/214	118/249	135/285	152/320	169/356	186/392	203/427
	Throw L/S	5/7	6/9	7/11	8.5/12	9.5/14	11/16	12/18	13/19	14/21
30 x 16 Ak 1.15	Total CFM	460	575	690	805	920	1035	1150	1265	1380
	CFM L/S	74/156	92/196	110/235	129/274	147/313	166/352	184/391	202/430	221/469
	Throw L/S	5/7	6/9	7.5/11	8.5/13	10/15	11/16	12/18	14/20	15/22
36 x 16 Ak 1.40	Total CFM	560	700	840	980	1120	1260	1400	1540	1680
	CFM L/S	90/190	113/237	135/285	158/332	180/380	203/427	225/475	248/522	270/570
	Throw L/S	5.5/8	7/10	8.5/12	9.5/14	11/16	12/18	14/20	15/22	17/24

Terminal Velocity of 75 FPM





ALHR45T and ALH45TFF
T-Bar Return Air Grilles and Filter Grilles

Type and Size		Average Face Velocity FPM							
		300	400	500	600	700	800	900	1000
ALHR45T									
22x22	CFM	785	1045	1305	1565	1825	2090	2350	2610
Ak 2.61	-Ps	.015	.030	.043	.062	.084	.120	.140	.170
46x22	CFM	1635	2180	2725	3270	3815	4360	4905	5450
Ak 5.46	-Ps	.015	.030	.040	.059	.081	.116	.136	.165
ALH45TFF									
20x20	CFM	650	870	1085	1300	1520	1735	1955	2170
Ak 2.17	-Ps	.015	.025	.040	.060	.080	.105	.135	.152
44x20	CFM	1430	1910	2385	2860	3340	3815	4295	4770
Ak 4.77	-Ps	.015	.024	.039	.058	.078	.103	.132	.148



PERFORMANCE DATA—LIGHT COMMERCIAL

Models 291, 292, 293, 294

	8" Height								10" Height								12" Height							
Static Pressure in H ₂ O Neck Velocity (FPM)	.033 300	.055 400	.088 500	.130 600	.173 700	.224 800	.287 900	.355 1000	.033 300	.055 400	.088 500	.130 600	.173 700	.224 800	.287 900	.355 1000	.033 300	.055 400	.088 500	.130 600	.173 700	.224 800	.287 900	.355 1000
Noise Criteria	<30	30	35	37	42	44	48	50																
8" Width																								
CFM	133	178	222	267	311	356	400	444																
1-Way Throw (ft)	16	21	27	32	38	42	48	52																
2-Way Throw (ft)	14	18	23	27	31	35	40	43																
3-Way Throw (ft)	13	16	21	25	28	32	36	40																
4-Way Throw (ft)	12	15	19	23	26	30	33	36																
Noise Criteria	<30	30	35	38	43	46	49	52	<30	30	35	39	44	47	50	53								
10" Width																								
CFM	167	222	278	333	389	444	500	555	208	278	347	417	486	555	625	695								
1-Way Throw (ft)	17	23	29	35	40	46	50	54	19	25	31	37	43	49	52	57								
2-Way Throw (ft)	15	19	25	28	33	37	42	46	16	21	26	30	35	40	44	49								
3-Way Throw (ft)	13	17	22	25	30	33	37	42	14	18	23	27	31	35	40	44								
4-Way Throw (ft)	12	16	20	24	28	31	35	39	13	17	21	25	29	33	37	41								
Noise Criteria	<30	30	36	39	43	47	50	53	<30	30	37	40	44	46	51	54	<30	30	35	41	45	49	52	55
12" Width																								
CFM	200	267	333	400	467	534	600	637	250	334	416	500	584	666	750	844	300	400	500	600	700	800	900	1000
1-Way Throw (ft)	18	24	30	36	42	48	52	56	20	26	32	38	45	50	56	61	21	27	34	40	47	52	59	63
2-Way Throw (ft)	16	20	25	30	35	39	43	48	17	22	27	32	36	42	46	51	17	22	28	33	38	43	48	53
3-Way Throw (ft)	14	18	23	27	31	35	39	43	15	19	24	28	33	37	42	46	15	20	26	30	34	38	43	48
4-Way Throw (ft)	13	17	21	25	29	33	36	41	13	18	22	26	30	35	38	42	13	18	24	28	32	36	40	44
Noise Criteria	<30	30	37	39	43	47	51	54	<30	30	37	41	44	48	52	56	<30	30	37	42	45	49	52	57
14" Width																								
CFM	234	312	389	467	545	623	700	779	292	389	486	583	680	776	875	972	350	467	584	700	817	935	1050	1170
1-Way Throw (ft)	19	25	32	37	44	49	55	58	21	26	33	39	47	51	58	63	22	28	34	40	47	53	60	68
2-Way Throw (ft)	16	21	26	31	36	41	45	50	17	22	27	33	38	43	48	53	18	23	29	34	40	45	50	55
3-Way Throw (ft)	14	19	24	28	32	36	41	44	15	20	25	30	34	38	43	48	16	21	26	31	36	40	44	50
4-Way Throw (ft)	13	17	22	26	30	34	38	42	14	18	23	22	31	36	40	44	15	20	25	29	33	37	41	46
Noise Criteria	<30	30	36	39	42	47	51	54	<30	30	36	40	43	47	51	55	<30	30	36	40	43	47	51	55
16" Width																								
CFM	266	356	445	533	622	710	800	890	334	445	555	667	778	890	1000	1110	400	545	667	800	935	1070	1200	1335
1-Way Throw (ft)	20	26	33	38	46	50	57	61	21	27	35	41	48	53	61	65	22	29	35	41	48	55	62	71
2-Way Throw (ft)	17	22	27	32	37	42	46	52	18	23	28	34	39	44	50	54	18	25	30	35	41	46	51	58
3-Way Throw (ft)	15	20	25	28	33	37	42	46	16	21	26	31	35	40	44	50	16	22	27	32	37	42	46	51
4-Way Throw (ft)	14	18	23	27	31	35	39	43	15	19	24	28	32	37	41	46	15	20	25	30	34	39	42	48
Noise Criteria	<30	30	36	39	43	46	51	55	<30	30	36	40	43	47	52	59	<30	30	37	41	43	47	53	56
18" Width																								
CFM	300	400	500	600	700	800	900	1000	375	500	625	750	875	1000	1125	1250	450	600	750	900	1050	1200	1350	1500
1-Way Throw (ft)	21	27	34	40	47	52	59	63	22	28	36	42	49	57	63	67	23	30	36	42	50	57	63	73
2-Way Throw (ft)	17	22	28	33	38	43	48	53	18	24	29	35	40	45	51	56	19	25	30	36	42	47	52	60
3-Way Throw (ft)	15	20	25	30	34	38	43	48	16	21	27	31	36	41	46	51	17	22	28	32	38	43	47	52
4-Way Throw (ft)	14	19	23	28	32	36	40	44	15	20	25	29	34	38	42	47	16	21	26	30	35	40	44	50
Noise Criteria	<30	30	37	39	44	46	52	55	<30	30	37	40	44	47	53	55	<30	30	37	42	45	49	54	56
20" Width																								
CFM	334	445	555	667	778	890	1000	1110	417	555	695	834	973	1110	1250	1390	500	667	834	1000	1167	1334	1500	1667
1-Way Throw (ft)	21	27	35	41	48	53	61	65	22	29	37	43	50	58	65	69	24	30	37	43	51	59	66	76
2-Way Throw (ft)	17	23	28	34	39	44	50	54	18	25	30	36	41	46	52	58	19	26	31	37	43	49	53	61
3-Way Throw (ft)	16	21	26	31	35	40	44	50	17	22	27	32	37	42	48	52	17	23	28	33	39	44	49	53
4-Way Throw (ft)	15	20	24	29	33	37	41	45	16	21	26	30	35	40	43	48	16	21	27	31	36	41	45	51
Noise Criteria	<30	30	37	40	45	47	52	56	<30	30	37	42	45	48	54	57	<30	31	37	43	46	50	55	58
24" Width																								
CFM	400	545	667	800	935	1070	1200	1335	502	669	836	1005	1170	1340	1505	1670	600	800	1000	1200	1400	1600	1800	2000
1-Way Throw (ft)	22	28	36	42	50	57	63	68	23	31	38	46	51	60	68	72	25	32	39	46	53	62	70	82
2-Way Throw (ft)	18	25	30	35	41	46	52	57	19	26	32	37	42	48	54	61	21	27	33	39	45	51	57	64
3-Way Throw (ft)	16	22	27	32	37	42	46	52	17	23	28	34	39	44	50	54	18	25	30	35	41	46	51	57
4-Way Throw (ft)	15	20	26	30	34	39	42	48	16	22	27	31	36	41	46	51	17	22	28	33	38	41	48	53
Noise Criteria	<30	31	38	42	46	50	54	58	<30	31	38	42	46	49	55	59	<30	31	39	43	47	49	57	-
30" Width																								
CFM	502	669	836	1005	1170	1340	1505	1670	625	833	1040	1250	1460	1667	1875	2080	750	1000	1250	1500	1750	2000	2250	2500
1-Way Throw (ft)	23	31	38	46	51	60	68	72	25	32	40	48	55	62	70	75	26							

Models 291, 292, 293, 294

Static Pressure in H ₂ O Neck Velocity (FPM)	14" Height								16" Height								18" Height							
	.033	.055	.088	.130	.173	.224	.287	.355	.033	.055	.088	.130	.173	.224	.287	.355	.033	.055	.088	.130	.173	.224	.287	.355
	300	400	500	600	700	800	900	1000	300	400	500	600	700	800	900	1000	300	400	500	600	700	800	900	1000
Noise Criteria	<30	30	37	42	46	51	54	58																
14" Width																								
CFM	408	545	680	816	955	1090	1225	1360																
1-Way Throw (ft)	22	29	35	42	49	55	63	71																
2-Way Throw (ft)	18	25	30	35	41	46	52	58																
3-Way Throw (ft)	16	22	27	32	37	42	46	52																
4-Way Throw (ft)	15	20	25	30	35	39	43	48																
Noise Criteria	<30	30	36	42	44	46	53	57	<30	30	37	43	47	52	56	59								
16" Width																								
CFM	467	623	778	935	1090	1245	1400	1555	534	710	890	1070	1245	1425	1600	1780								
1-Way Throw (ft)	23	30	37	43	50	57	65	74	23	31	38	45	52	60	67	78								
2-Way Throw (ft)	19	26	31	37	42	48	53	60	20	26	32	38	43	50	56	62								
3-Way Throw (ft)	17	23	28	33	38	43	48	53	17	23	29	34	40	44	50	55								
4-Way Throw (ft)	16	21	26	31	35	40	44	50	16	21	27	32	36	41	46	51								
Noise Criteria	<30	30	37	42	44	48	54	57	<30	31	37	42	45	49	56	59	<30	33	38	44	49	53	57	61
18" Width																								
CFM	525	700	875	1050	1225	1400	1575	1750	600	800	1000	1200	1400	1600	1800	2000	675	900	1125	1350	1575	1800	2025	2250
1-Way Throw (ft)	23	31	38	44	51	59	67	78	24	32	39	46	53	61	69	82	25	32	40	47	55	63	72	86
2-Way Throw (ft)	20	26	31	38	43	49	55	62	21	27	33	39	45	51	57	63	21	27	34	40	46	52	60	67
3-Way Throw (ft)	17	23	28	34	40	44	50	55	18	24	30	35	41	46	52	57	18	25	30	36	41	47	52	60
4-Way Throw (ft)	16	22	27	31	36	41	46	51	17	22	28	33	38	41	48	52	17	23	28	34	39	43	50	54
Noise Criteria	<30	31	38	43	46	50	55	57	<30	31	38	43	47	51	56	59	<30	32	38	45	49	53	56	60
20" Width																								
CFM	584	779	973	1170	1360	1550	1750	1945	668	890	1110	1335	1560	1780	2000	2220	750	1000	1250	1500	1750	2000	2250	2500
1-Way Throw (ft)	24	32	39	46	53	61	70	81	25	32	40	47	55	63	72	86	26	33	41	49	56	65	76	90
2-Way Throw (ft)	20	27	32	39	44	51	57	63	20	27	34	40	46	53	60	67	22	28	35	41	47	53	61	69
3-Way Throw (ft)	18	24	30	35	40	45	52	57	18	25	30	36	42	47	53	59	19	26	31	37	42	48	54	61
4-Way Throw (ft)	17	22	28	32	37	41	47	52	17	23	29	34	39	42	50	54	18	24	29	35	40	45	51	56
Noise Criteria	<30	31	38	43	47	51	56	59	<30	31	38	44	47	51	57	-	<30	34	39	46	52	56	60	-
24" Width																								
CFM	700	934	1170	1400	1634	1870	2100	2334	800	1070	1335	1600	1870	2135	2400	2665	900	1200	1500	1800	2100	2400	2700	3000
1-Way Throw (ft)	26	33	41	48	56	64	73	88	26	34	41	50	58	67	78	92	27	35	43	51	60	69	82	98
2-Way Throw (ft)	21	28	34	41	46	53	60	67	22	28	35	41	48	55	63	72	23	29	36	43	50	58	65	73
3-Way Throw (ft)	19	25	31	37	42	48	53	60	20	26	32	37	43	50	56	63	20	27	33	39	44	51	57	65
4-Way Throw (ft)	17	23	29	34	40	43	50	55	18	24	30	35	40	45	51	57	19	25	31	36	41	47	52	59
Noise Criteria	<30	31	39	44	48	52	57	-	<30	32	40	44	49	53	59	-	<30	32	40	45	49	55	-	-
30" Width																								
CFM	875	1170	1460	1750	2040	2330	2625	2915	1000	1335	1670	2000	2335	2670	3000	3335	1125	1500	1875	2250	2625	3000	3355	3750
1-Way Throw (ft)	27	35	42	51	60	69	81	98	27	36	43	52	61	72	85	105	28	37	46	53	63	75	90	100
2-Way Throw (ft)	23	29	36	43	49	56	63	73	23	30	37	43	51	58	67	77	24	31	38	46	52	61	70	80
3-Way Throw (ft)	20	26	32	39	44	50	56	63	21	27	33	40	46	52	59	67	21	28	35	41	48	53	61	70
4-Way Throw (ft)	18	25	30	36	41	46	52	58	19	25	31	37	42	48	53	61	20	26	32	38	43	50	55	62
Noise Criteria	<30	32	40	45	48	53	58	-	<30	33	40	45	50	56	-	-	<30	33	41	46	51	57	-	-
36" Width																								
CFM	1050	1400	1750	2100	2450	2800	3150	3500	1200	1600	2000	2400	2800	3200	3600	4000	1350	1800	2250	2700	3150	3600	4050	4500
1-Way Throw (ft)	28	36	44	52	62	73	86	110	26	37	46	55	66	77	93	118	30	38	47	57	67	81	100	130
2-Way Throw (ft)	24	30	38	45	52	60	68	78	25	32	39	46	53	62	72	82	25	32	40	47	56	64	73	85
3-Way Throw (ft)	21	27	34	41	47	52	60	68	22	28	35	41	48	54	62	70	22	29	36	43	50	57	65	74
4-Way Throw (ft)	19	26	32	37	42	49	54	62	2	26	32	39	43	51	56	63	21	27	33	40	45	52	59	67
Noise Criteria	<30	33	42	46	51	57	-	-	<30	33	42	46	51	58	-	-	<30	34	43	47	52	58	-	-
48" Width																								
CFM	1400	1870	2330	2800	3265	3730	4200	4660	1600	2135	2670	3200	3740	4260	4800	5340	1800	2400	3000	3600	4200	4800	5400	6000
1-Way Throw (ft)	30	39	48	58	68	82	100	130	31	40	45	60	72	86	110	143	32	41	51	61	74	91	118	155
2-Way Throw (ft)	26	32	40	48	56	65	75	87	27	34	42	50	58	68	78	85	27	35	43	51	60	70	82	98
3-Way Throw (ft)	23	30	37	43	50	57	65	75	23	31	37	44	52	60	67	80	25	32	38	46	53	61	72	83
4-Way Throw (ft)	21	27	34	40	46	52	60	67	22	28	35	41	48	53	61	70	22	29	36	42	50	56	64	73



Static Pressure in H ₂ O Neck Velocity (FPM)	20" Height								24" Height								30" Height									
	.033 300	.055 400	.088 500	.130 600	.173 700	.224 800	.287 900	.355 1000	.033 300	.055 400	.088 500	.130 600	.173 700	.224 800	.287 900	.355 1000	.033 300	.055 400	.088 500	.130 600	.173 700	.224 800	.287 900	.355 1000		
	Noise Criteria																									
	20" Width																									
	CFM	835	1110	1390	1670	1945	2220	2500	2780																	
	1-Way Throw (ft)	26	34	42	50	59	67	80	95																	
	2-Way Throw (ft)	22	29	35	42	49	56	63	72																	
	3-Way Throw (ft)	20	26	32	38	43	50	56	63																	
	4-Way Throw (ft)	18	25	30	35	41	47	51	58																	
	Noise Criteria	<30	34	39	46	51	55	58	61																	
20" Width	24" Height								30" Height																	
	CFM	1000	1335	1670	2000	2340	2665	3000	3330	1200	1600	2000	2400	2800	3200	3600	4000									
	1-Way Throw (ft)	27	36	43	52	61	72	86	105	28	37	46	55	66	77	93	118									
	2-Way Throw (ft)	23	30	37	43	51	59	67	77	25	32	39	46	53	62	72	82									
	3-Way Throw (ft)	21	27	33	40	46	52	59	67	22	28	35	41	48	54	62	71									
	4-Way Throw (ft)	19	26	31	37	42	49	53	61	21	26	33	39	44	50	56	63									
	Noise Criteria	<30	34	39	46	52	56	60	-	<30	35	41	47	53	58	60	-									
	24" Width	30" Height								36" Height																
		CFM	1250	1670	2080	2500	2920	3340	3750	4170	1500	2000	2500	3000	3500	4000	4500	5000	1875	2500	3125	3750	4375	5000	5625	6250
		1-Way Throw (ft)	29	38	46	56	66	79	95	120	30	40	48	59	70	85	105	140	32	42	52	62	76	93	120	153
2-Way Throw (ft)		25	32	40	46	54	62	72	83	26	33	41	48	57	66	77	90	27	35	43	52	60	72	83	100	
3-Way Throw (ft)		22	28	36	42	49	55	63	72	23	30	37	43	51	58	67	77	25	32	39	46	53	62	72	83	
4-Way Throw (ft)		20	27	33	39	44	51	57	65	22	28	35	41	47	52	61	68	22	30	36	42	50	57	65	75	
Noise Criteria		<30	34	41	47	52	58	-	-	<30	34	42	48	53	60	-	-	<30	35	42	49	55	60	-	-	
30" Width		36" Height								42" Height																
		CFM	1500	2000	2500	3000	3500	4000	4500	5000	1800	2400	3000	3600	4200	4800	5400	6000	2250	3000	3750	4500	5250	6000	6750	7500
		1-Way Throw (ft)	30	40	48	59	70	84	105	140	32	41	51	62	74	91	118	155	33	43	54	67	81	103	138	180
	2-Way Throw (ft)	26	33	41	48	57	65	76	90	27	35	43	51	60	70	82	98	28	37	45	54	64	76	90	110	
	3-Way Throw (ft)	23	30	37	43	51	58	66	76	25	31	38	46	53	61	72	83	26	33	41	48	57	66	76	90	
	4-Way Throw (ft)	21	28	35	41	47	53	61	68	23	29	36	42	50	55	64	73	23	31	38	44	52	60	68	80	
	Noise Criteria	<30	34	43	47	53	60</																			

Recommended Noise Criteria and Face Velocity Ranges are on page 19.

1230 – Perforated Return

Neck Velocity		200	300	400	500	600	700	800
- Ps		.01	.02	.03	.05	.07	.10	.12
6"								
An .20	cfm	40	60	80	100	120	140	160
8"								
An .35	cfm	70	105	140	175	210	245	280
10"								
An .54	cfm	110	165	220	275	330	385	440
12"								
An .78	cfm	160	240	320	395	475	550	630
14"								
An 1.07	cfm	215	320	430	535	640	750	855

NOTE: The use of a balancing hood is recommended to balance the system.

An = Neck Area in square feet

- Ps = Negative Static Pressure Loss in inches of water

1234 Curved-Blade Perforated Diffuser

One-Way Supply

		Neck Velocity - V _N							
Neck Size		300	400	500	600	700	800	1000	1200
6"	CFM	60	80	100	120	140	160	200	240
	Ps	.060	.080	.100	.150	.200	.260	.400	.580
	Throw	2.5-4.0-5.0	3.5-5.0-6.0	4.0-6.0-7.0	4.5-7.0-8.5	5.5-8.0-9.5	6.5-9.5-11.5	8.0-12.0-14.5	9.5-14.0-17.0
	NC	<20	<20	<20	22	26	30	40	>45
8"	CFM	105	140	175	210	245	280	350	420
	Ps	.080	.110	.160	.240	.320	.420	.650	.930
	Throw	4.0-6.0-7.0	5.5-8.0-9.5	6.5-10.0-12.0	8.0-12.0-14.5	7.5-14.0-17.0	10.5-10.6-19.0	13.5-20.0-24.0	16.0-24.0-29.0
	NC	<20	<20	21	26	31	39	>45	>45
10"	CFM	165	220	275	325	380	435	545	650
	Ps	.080	.110	.170	.250	.320	.430	.660	.940
	Throw	4.5-7.0-8.5	6.5-9.5-11.5	8.0-12.0-14.5	9.5-14.5-17.5	11.0-16.5-20.0	12.5-19.0-23.0	16.0-24.0-29.0	19.0-28.5-34.0
	NC	<20	<20	23	26	34	40	>45	>45
12"	CFM	235	315	395	470	550	630	790	940
	Ps	.080	.110	.170	.250	.340	.440	.690	.980
	Throw	5.5-8.5-10.0	7.5-11.0-13.5	9.5-14.0-17.0	11.0-16.5-20.0	13.0-19.5-26.5	14.5-22.0-26.5	18.5-27.5-33.0	22.0-33.0-39.5
	NC	<20	20	25	33	40	45	>45	>45
14"	CFM	325	430	535	640	750	860	1075	1275
	Ps	.110	.140	.210	.300	.420	.550	.860	1.200
	Throw	4.5-7.0-8.5	6.5-9.5-11.5	8.0-12.0-14.5	9.5-14.5-17.5	11.5-17.0-20.5	13.0-17.5-23.5	16.5-24.5-29.5	19.5-29.0-35.0
	NC	<20	20	25	30	38	44	>45	>45
16'	CFM	420	560	700	840	980	1120	1400	1680
	Ps	.020	.040	.060	.080	.110	.140	.220	.260
	Throw	5.0-8.0-10.0	7.0-10.0-12.0	10.0-13.0-16.0	12.0-15.0-18.0	13.0-18.0-21.0	14.0-19.0-24.0	18.0-26.0-30.0	20.0-31.0-36.0
	NC	<20	<20	26	34	39	43	>45	>45



1234 Curved-Blade Perforated Diffuser

Two-Way Supply

		Neck Velocity - V_N							
Neck Size		300	400	500	600	700	800	1000	1200
6"	CFM	60	80	100	120	140	160	200	240
	Ps	.050	.070	.090	.130	.170	.220	.340	.500
	Throw	2.0-3.0-3.5	2.5-3.5-4.5	3.5-5.0-6.0	4.0-5.5-6.5	4.5-6.5-8.0	5.0-7.5-9.0	6.5-9.5-11.5	7.5-11.5-13.5
	NC	<20	<20	<20	20	24	28	37	44
8"	CFM	105	140	175	210	245	280	350	420
	Ps	.040	.054	.084	.120	.165	.215	.330	.480
	Throw	3.0-4.5-5.5	3.5-5.5-6.5	4.5-7.0-8.5	5.5-8.5-10.0	6.5-9.5-11.5	7.5-11.0-13.0	9.5-14.0-17.0	11.0-16.5-20.0
	NC	<20	<20	<20	23	29	36	43	>45
10"	CFM	165	220	275	325	380	435	545	650
	Ps	.060	.080	.130	.180	.250	.310	.510	.730
	Throw	4.5-6.5-7.5	5.5-8.5-10.0	7.0-10.5-12.5	8.5-12.5-15.0	9.5-14.5-17.5	11.0-16.5-20.0	14.0-21.0-25.0	16.5-25.0-30.0
	NC	<20	<20	<20	25	29	37	45	>45
12"	CFM	235	315	395	470	550	630	790	940
	Ps	.050	.070	.110	.150	.210	.270	.430	.600
	Throw	4.5-6.5-7.5	5.5-8.5-10.0	7.0-10.5-12.5	8.5-12.5-15.0	10.0-15.0-18.0	11.5-17.0-20.5	14.5-21.5-26.0	17.0-25.5-30.5
	NC	<20	<20	<20	30	37	43	>45	>45
14"	CFM	325	430	535	640	750	860	1075	1275
	Ps	.050	.070	.100	.150	.200	.260	.410	.570
	Throw	3.5-5.5-6.5	4.5-7.0-8.5	6.0-9.0-11.0	7.0-10.5-12.5	8.5-12.5-15.0	9.5-14.0-17.0	11.5-17.5-21.0	14.0-21.0-25.0
	NC	<20	<20	22	28	35	40	>45	>45
16"	CFM	420	560	700	840	980	1120	1400	1680
	Ps	.020	.040	.060	.080	.110	.140	.220	.260
	Throw	4.0-6.0-8.0	5.0-8.0-9.0	7.0-10.0-12.0	9.0-11.0-13.0	10.0-14.0-16.0	11.0-16.0-19.0	13.0-19.0-24.0	16.0-22.0-27.0
	NC	<20	<20	26	34	39	43	>45	>45

Three-Way Supply

		Neck Velocity - V_N							
Neck Size		300	400	500	600	700	800	1000	1200
6"	CFM	60	80	100	120	140	160	200	240
	Ps	.020	.030	.040	.060	.080	.100	.150	.230
	Throw	2.5-3.5-4.5	3.0-4.5-5.5	3.5-5.5-6.5	4.5-6.5-8.0	5.0-7.5-9.0	5.5-8.5-10.5	7.5-11.0-13.5	8.5-13.0-15.5
	NC	<20	<20	<20	<20	23	25	34	40
8"	CFM	105	140	175	210	245	280	350	420
	Ps	.020	.030	.040	.060	.080	.100	.160	.220
	Throw	3.0-4.0-5.0	4.0-5.5-6.5	4.5-7.0-8.5	5.5-8.0-9.5	6.5-9.5-11.5	7.5-11.0-13.5	9.0-13.5-16.0	11.0-16.5-20.0
	NC	<20	<20	<20	21	26	33	39	44
10"	CFM	165	220	275	325	380	435	545	650
	Ps	.030	.040	.060	.090	.120	.150	.240	.340
	Throw	4.5-6.5-8.0	5.5-8.5-10.5	7.0-10.5-12.5	8.5-12.5-15.0	9.5-14.5-17.5	11.5-17.0-20.5	14.0-21.0-25.0	17.0-25.0-30.0
	NC	<20	<20	<20	21	26	34	41	>45
12"	CFM	235	315	395	470	550	630	790	940
	Ps	.020	.030	.050	.070	.100	.130	.200	.290
	Throw	4.5-6.5-8.0	5.5-8.5-10.0	7.0-10.5-12.5	8.5-12.5-15.0	10.0-14.5-17.5	11.0-16.5-20.0	13.5-20.5-24.5	16.5-24.5-29.5
	NC	<20	<20	21	27	34	39	44	>45
14"	CFM	325	430	535	640	750	860	1075	1275
	Ps	.020	.030	.050	.070	.100	.130	.200	.280
	Throw	4.0-5.0-7.0	5.5-8.0-9.5	6.0-9.0-11.0	8.0-12.0-14.5	9.5-14.0-17.0	10.5-16.0-19.5	13.5-20.0-24.0	15.5-23.5-28.0
	NC	<20	<20	20	25	32	37	44	>45
16"	CFM	420	560	700	840	980	1120	1400	1680
	Ps	.020	.040	.060	.080	.110	.140	.220	.260
	Throw	5.0-6.0-8.0	6.0-9.0-10.0	7.0-9.0-12.0	9.0-13.0-15.0	10.0-13.0-16.0	11.0-15.0-18.0	12.0-18.0-21.0	15.0-21.0-26.0
	NC	<20	<20	26	34	39	43	>45	>45

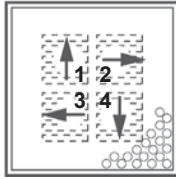
Four-Way Supply

		Neck Velocity - V_N							
Neck Size		300	400	500	600	700	800	1000	1200
6"	CFM	60	80	100	120	140	160	200	240
	Ps	<.010	.010	.020	.030	.040	.050	.080	.120
	Throw	1.5-2.0-2.5	1.5-2.5-3.0	2.0-3.0-4.0	2.5-3.5-4.5	3.0-4.5-5.5	3.5-5.0-6.0	4.0-6.0-7.0	5.0-7.5-9.0
	NC	<20	<20	<20	<20	21	24	32	38
8"	CFM	105	140	175	210	245	280	350	420
	Ps	<.010	.010	.020	.030	.040	.060	.090	.120
	Throw	1.5-2.5-3.0	2.0-3.0-4.0	2.5-4.0-5.0	3.5-5.0-6.0	4.0-5.5-7.0	4.5-6.5-8.0	5.5-8.0-10.0	6.5-9.5-11.5
	NC	<20	<20	<20	<20	25	31	37	42
10"	CFM	165	220	275	325	380	435	545	650
	Ps	0.01	.020	.030	.040	.060	.070	.110	.160
	Throw	3.0-4.0-5.0	3.5-5.5-6.5	4.5-6.5-8.0	5.5-8.0-10.0	6.0-9.0-11.0	7.0-10.5-12.5	9.0-13.0-15.5	10.5-15.5-18.5
	NC	<20	<20	<20	21	27	32	39	44
12"	CFM	235	315	395	470	550	630	790	940
	Ps	.010	.020	.030	.040	.060	.080	.120	.170
	Throw	2.5-3.5-4.0	3.0-4.5-5.5	3.5-5.5-6.5	4.5-7.0-8.5	5.5-8.0-9.5	6.0-7.0-11.0	7.5-11.5-14.0	9.0-13.5-16.0
	NC	<20	<20	20	26	32	37	42	>45
14"	CFM	325	430	535	640	750	860	1075	1275
	Ps	.010	.020	.030	.050	.060	.080	.130	.180
	Throw	2.0-3.0-3.5	2.5-4.0-5.0	3.5-5.0-6.0	4.0-6.0-7.0	4.5-7.0-8.5	5.5-8.0-10.0	6.5-10.0-12.0	7.5-11.5-14.0
	NC	<20	<20	<20	24	30	35	42	>45
16"	CFM	420	560	700	840	980	1120	1400	1680
	Ps	.020	.040	.060	.080	.110	.140	.220	.260
	Throw	3.0-4.0-5.0	4.0-6.0-7.0	5.0-8.0-11.0	6.0-9.0-12.0	8.0-11.0-14.0	9.0-13.0-16.0	10.0-15.0-19.0	12.0-17.0-22.0
	NC	<20	<20	26	34	39	43	>45	>45

Notes:

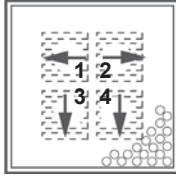
1. P_s is static Pressure Loss in inches of H_2O .
2. NC is based on 10dB room attenuation (RE: 10^{-12} watts).
3. Throw is isothermal air at 150, 100, 75 FPM terminal velocities.
4. The use of a balancing hood is recommended to balance the system.

1235 Perforated Supply



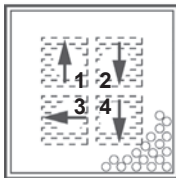
Four-Way (Short Throw)

- For throw in all four directions, use short throw data.



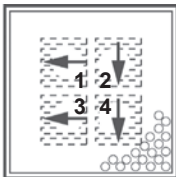
Three-Way (Short Throw)

- For throw in all three directions, use short throw data.



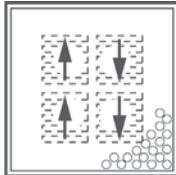
Three-Way (Long and Short)

- For throw in the #2 and #4 directions, use long throw data.
- For throw in the #1 and #3 directions, use short throw data.



Two-Way Corner (Long and Short)

- For throw in the #2 and #4 directions, use long throw data.
- For throw in the #1 and #3 directions, use short throw data.



Two-Way (Long Throw)

- For throw in both directions, use long throw data.

Neck Velocity	300	400	500	600	700	800	900	1000	1200	1400
Velocity Pressure	.006	.010	.016	.022	.031	.040	.051	.062	.090	.122
6" Diameter	CFM	60	80	100	120	140	160	180	200	240
	Total Pressure	.005	.008	.013	.025	.025	.032	.041	.050	.027
	Short Horizontal Throw	2-1-1	2-1-1	3-1-1	3-2-1	4-2-1	4-2-1	5-2-2	5-3-2	6-3-2
	Long Horizontal Throw	3-1-1	4-2-1	5-2-2	6-3-2	7-3-2	8-4-3	9-4-3	10-5-3	12-6-4
8" Diameter	Noise Criteria	<20	<20	<20	<20	<20	22	24	26	31
	CFM	105	140	175	210	245	280	315	350	420
	Total Pressure	.009	.015	.024	.034	.046	.061	.077	.095	.136
	Short Horizontal Throw	3-1-1	4-2-1	5-2-2	6-4-3	7-3-2	8-4-3	9-4-3	10-5-3	12-6-4
10" Diameter	Long Horizontal Throw	5-3-2	7-4-2	9-5-3	11-5-4	13-6-4	15-7-5	16-8-5	18-9-6	22-11-7
	Noise Criteria	<20	<20	<20	<20	20	25	30	34	39
	CFM	165	220	275	330	385	440	495	550	660
	Total Pressure	.013	.023	.036	.052	.071	.092	.117	.144	.208
12" Diameter	Short Horizontal Throw	5-2-2	6-3-2	8-4-3	10-5-3	11-6-4	13-6-4	14-7-5	16-8-5	19-10-6
	Long Horizontal Throw	9-5-3	12-6-4	15-8-5	18-9-6	21-11-7	24-12-8	27-14-9	30-15-10	36-18-12
	Noise Criteria	<20	<20	<20	22	25	28	33	36	41
	CFM	240	320	400	480	560	640	720	800	960
14" Diameter	Total Pressure	.017	.030	.047	.068	.093	.121	.153	.189	.273
	Short Horizontal Throw	7-4-2	10-5-3	12-6-4	15-7-5	17-9-6	20-10-7	22-11-7	25-12-8	30-15-10
	Long Horizontal Throw	14-7-5	19-9-6	23-12-8	28-14-9	33-16-11	37-19-12	42-21-14	47-23-16	56-28-19
	Noise Criteria	<20	<20	21	25	29	32	35	38	44
16" Diameter	CFM	330	440	550	660	770	880	990	1100	1320
	Total Pressure	.020	.036	.057	.081	.111	.145	.183	.226	.326
	Short Horizontal Throw	11-6-4	15-7-5	18-9-6	22-11-7	26-13-9	29-15-10	33-17-11	37-18-12	44-22-15
	Long Horizontal Throw	21-10-7	28-14-9	34-17-11	41-21-14	48-24-16	55-28-18	62-31-21	69-34-23	83-41-28
18" Diameter	Noise Criteria	<20	<20	25	31	36	40	43	45	48
	CFM	420	560	700	840	980	1120	1260	1400	1680
	Total Pressure	.025	.042	.066	.093	.125	.161	.201	.246	.366
	Short Horizontal Throw	13-6-4	18-9-6	22-11-7	27-14-9	31-17-11	35-19-12	39-21-14	44-23-16	52-26-17
20" Diameter	Long Horizontal Throw	24-12-8	32-18-12	39-23-16	47-25-18	55-30-21	63-34-23	71-38-25	80-43-28	97-48-32
	Noise Criteria	<20	<20	25	31	36	40	43	45	48
	CFM	510	680	850	1020	1190	1360	1530	1700	2040
	Total Pressure	.030	.050	.075	.105	.140	.180	.225	.275	.420

Notes: Tests conducted in accordance with ANSI/ASHRAE 70-1991 at isothermal conditions.

Tests conducted with a straight rigid inlet condition. Other inlet conditions may alter performance.

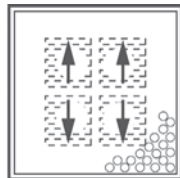
Unit of measure: Neck Velocity = FPM; Velocity Pressure = in. w.c.; Airflow Rate = CFM; Total Pressure = in. w.c.;

Throw = ft at 50, 100, and 150 FPM terminal velocity

Noise Criteria (NC) is based upon 10dB room absorption (Re: 10⁻¹² watts) evaluated at 125 thru 4000 Hz octave

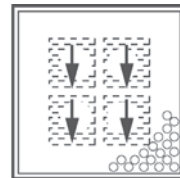
bands.

Flow hoods are recommended for system balancing.



Two-Way (Short Throw)

- For throw in both directions, use short throw data.



One-Way (Long Throw)

- For throw, use long throw data.



Models 1274, 12P, 12PFF, 12PFFI Return Air Grille Balancing Data

Neck Area

The cross-sectional area (sq. ft.) of the duct at the point where the diffuser is attached, all dimensions are nominal.

Neck Velocity

Airflow Rate (CFM) divided by Neck Area (sq. ft.) equals Neck Velocity (FPM).

Static Pressure

Static Pressure Drop is given in inches of W.G.

To Determine CFM:

1. Use an ALNOR Velometer with No. 2220 or 2220A Tip or a 4" rotating vane anemometer. If a 4" rotating vane anemometer is used, place dial face against perforated plate, and sample in a random manner for at least 1 minute.

2. Select proper Ak from Table by unit size and instrument used for measuring velocity.
3. Determine CFM by the following equation: $CFM = Ak \times \text{Average Velocity}$.

Sample Problem

Determine Return Airflow Rate (CFM) through a 10 x 10, using an ALNOR Velometer with Tip No. 2220 or 2220A.

Solution

1. Assume the average of 6 velocity readings taken with an ALNOR Velometer is 2000 FPM.
2. From Table, the Area Factor for a 10 x 10 using an ALNOR Velometer is $Ak = .39$ sq. ft.
3. $CFM = Ak \times \text{Average Velocity} = .39 \text{ sq. ft.} \times 2000 \text{ FPM} = 780 \text{ CFM}$

Neck Velocity			200	300	400	500	600	650	700	750	800	900
S.P. Drop w/OBD			.012	.027	.049	.078	.110	.130	.150	.170	.190	.240
Size	Ak ALNOR	Ak 4" ROT. Vane	Air Capacities - CFM									
10 x 10	.39	.55	140	210	285	350	415	450	485	520	555	625
12 x 12	.46	.79	200	300	400	500	600	650	700	750	800	900
14 x 14	.62	1.07	270	410	545	680	815	885	955	1020	1090	1225
10 x 22	.71	1.21	305	460	610	765	915	995	1070	1150	1220	1375
16 x 16	.82	1.40	355	530	710	890	1065	1155	1245	1335	1425	1600
18 x 18	1.05	1.77	450	675	900	1125	1350	1460	1575	1690	1800	2030
20 x 20	1.28	2.25	555	835	1110	1390	1665	1805	1945	2080	2220	2500
22 x 22	1.55	2.70	670	1010	1345	1680	2020	2180	2350	2520	2690	3020

Model 4250

Neck Velocity		300	400	500	600	700	800	900	1000	1200
6"	CFM	60	80	100	120	135	155	175	195	235
	Ps	.007	.013	.020	.029	.037	.048	.062	.076	.110
	NC	<20	<20	<20	20	21	24	28	33	37
	1-Way Throw	4.0	6.0	7.0	8.0	10.0	11.0	13.0	14.0	16.0
	2- and 3-Way Throw	3.5	4.5	6.0	7.0	8.0	9.5	10.5	11.5	13.0
8"	4-Way Throw	2.5	3.5	4.5	5.0	6.0	7.0	7.5	8.0	9.0
	CFM	105	140	175	210	245	280	315	350	420
	Ps	.011	.019	.030	.043	.059	.077	.097	.120	.173
	NC	<20	<20	<20	20	22	27	31	35	40
	1-Way Throw	6.0	8.0	10.0	11.5	13.0	14.5	16.0	18.0	21.0
10"	2- and 3-Way Throw	5.0	7.0	8.5	10.5	12.0	13.5	14.5	16.0	19.0
	4-Way Throw	4.0	5.0	6.5	7.5	9.0	10.0	11.5	12.5	14.0
	CFM	165	220	275	325	380	435	490	545	655
	Ps	.015	.026	.040	.046	.076	.100	.125	.115	.225
	NC	<20	<20	<20	21	27	33	37	40	45
12"	1-Way Throw	8.5	11.0	14.0	16.5	19.0	22.0	25.0	27.0	30.0
	2- and 3-Way Throw	7.5	10.0	12.5	14.5	17.0	19.5	22.0	24.0	27.0
	4-Way Throw	5.0	7.0	8.5	10.5	12.0	14.0	15.5	17.0	20.0
	CFM	235	315	395	470	550	630	705	785	940
	Ps	.016	.029	.045	.068	.086	.113	.140	.170	.250
14"	NC	<20	<20	<20	20	25	32	35	38	44
	1-Way Throw	10.0	13.0	16.5	19.5	22.0	25.0	27.0	30.0	34.0
	2- and 3-Way Throw	8.5	11.5	14.5	17.5	20.0	22.0	25.0	27.0	30.0
	4-Way Throw	6.0	8.0	10.0	12.0	14.0	16.5	18.0	20.0	23.0
	CFM	320	430	535	640	750	855	960	1070	1285
16"	Ps	.021	.037	.057	.082	.112	.145	.180	.225	.320
	NC	<20	<20	20	26	31	36	40	44	49
	1-Way Throw	11.0	15.0	19.0	22.5	26.0	29.0	32.0	35.0	39.0
	2- and 3-Way Throw	10.0	13.5	17.0	20.0	23.0	26.0	28.0	31.0	35.0
	4-Way Throw	7.0	10.0	12.0	14.4	17.0	19.0	21.0	23.0	27.0

Notes: The use of a balancing hood is recommended to balance the system.

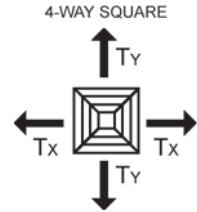
NC is based on 10dB room attenuation (Re: 10^{-12} watts) ASHRAE 36-72.

Terminal Velocity of 75 FPM

Series 1400/AL1400 Square/Rectangular Ceiling Diffuser

Four-Way Square

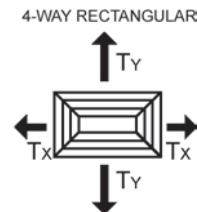
Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
6 x 6	CFM	50	60	70	80	90	100	120	140	160	180	200
Ak .100	Throw X/Y	2-3/2-3	2-3/2-3	2-4/2-4	2-4/2-4	3-5/3-5	3-5/3-5	4-6/4-6	4-8/4-8	5-9/5-9	6-11/6-11	
9 x 9	CFM	110	135	155	180	205	225	270	315	360	410	450
Ak .220	Throw X/Y	2-4/2-4	2-4/2-4	3-5/3-5	3-5/3-5	4-6/4-6	5-8/5-8	5-9/5-9	6-11/6-11	6-12/6-12	7-13/7-13	8-14/8-14
12 x 12	CFM	200	240	280	320	360	400	480	560	640	725	800
Ak .400	Throw X/Y	3-5/3-5	4-6/4-6	4-8/4-8	5-8/5-8	5-9/5-9	6-11/6-11	6-12/6-12	7-13/7-13	8-15/8-15	9-17/9-17	10-19/10-19
15 x 15	CFM	310	375	440	500	565	625	750	875	1000	1125	1250
Ak .620	Throw X/Y	4-6/4-6	4-8/4-8	5-9/5-9	6-11/6-11	6-11/6-11	6-12/6-12	8-15/8-15	10-18/10-18	10-19/10-19	12-21/12-21	13-23/13-23
18 x 18	CFM	450	540	630	720	810	900	1080	1260	1440	1620	1800
Ak .900	Throw X/Y	4-8/4-8	5-9/5-9	5-11/5-11	6-12/6-12	7-13/7-13	8-15/8-15	10-17/10-17	11-20/11-20	13-23/13-23	15-27/15-27	16-30/16-30
21 x 21	CFM	615	740	860	985	1110	1230	1475	1725	1970	2220	2460
Ak 1.230	Throw X/Y	5-9/5-9	6-11/6-11	7-13/7-13	8-14/8-14	9-15/9-15	9-17/9-17	11-21/11-21	13-25/13-25	15-29/15-29	17-31/17-31	19-35/19-35
24 x 24	CFM	800	960	1120	1275	1440	1600	1925	2240	2570	2890	3200
Ak 1.600	Throw X/Y	5-11/5-11	7-13/7-13	7-14/7-14	8-15/8-15	9-17/9-17	10-19/10-19	12-23/12-23	14-29/14-29	16-31/16-31	18-35/18-35	20-39/20-39
27 x 27	CFM	1010	1215	1420	1615	1820	2020	2430	2840	3240	3650	4040
Ak 2.020	Throw X/Y	6-12/6-12	7-13/7-13	8-15/8-15	10-18/10-18	10-19/10-19	12-22/12-22	14-27/14-27	16-32/16-32	18-35/18-35	20-38/20-38	23-42/23-42
33 x 33	CFM	1370	1650	1925	2200	2470	2750	3300	3850	4400	4950	5500
Ak 2.750	Throw X/Y	7-13/7-13	9-16/9-16	10-18/10-18	21-21/21-21	14-24/14-24	16-27/16-27	18-33/18-33	19-37/19-37	23-41/23-41	27-46/27-46	31-50/31-50



Note: The minimum Throw Dimension is based on a terminal velocity of 200 FPM. The maximum Throw Dimension is based on a terminal velocity of 100 FPM.

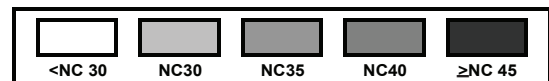
Four-Way Rectangular

Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
9 x 6	CFM	75	90	105	120	135	150	180	210	240	270	300
Ak .150	Throw X/Y	1-3/2-4	1-3/3-5	2-4/3-5	2-4/4-6	3-5/4-8	3-5/4-8	4-6/5-9	4-6/5-9	4-8/7-13	5-9/8-15	6-11/8-15
12 x 6	CFM	100	120	140	160	180	200	240	280	320	360	400
Ak .200	Throw X/Y	1-3/3-5	1-3/4-6	2-4/4-8	2-4/4-8	2-4/5-9	3-5/6-11	4-6/7-13	4-8/8-15	4-8/8-15	5-9/10-18	6-11/11-21
12 x 9	CFM	150	180	210	240	270	300	360	420	480	540	600
Ak .300	Throw X/Y	2-4/3-5	2-4/3-5	3-5/4-6	4-6/4-8	4-7/5-10	4-8/6-11	5-9/6-12	6-11/7-13	7-13/9-17	7-13/10-18	8-14/11-19
15 x 9	CFM	185	225	265	300	340	375	450	525	600	675	750
Ak .370	Throw X/Y	2-4/4-6	2-4/4-6	3-5/5-9	4-6/6-11	4-6/6-12	4-8/8-14	5-9/8-15	5-9/9-17	6-12/11-21	7-13/13-25	7-13/13-25
18 x 9	CFM	225	270	315	360	405	450	540	630	720	810	900
Ak .450	Throw X/Y	2-4/4-6	2-4/5-9	3-5/6-11	4-6/6-12	4-6/8-14	4-8/8-15	5-9/10-19	5-10/11-23	6-12/13-25	8-14/15-29	10-17/17-32
21 x 9	CFM	265	320	370	425	475	530	635	740	850	955	1060
Ak .530	Throw X/Y	2-4/5-9	2-4/6-11	3-5/8-14	4-6/8-15	4-8/10-18	4-8/10-19	5-9/11-21	6-17/13-25	8-13/16-31	9-15/19-35	10-17/21-38
15 x 12	CFM	250	300	350	400	450	500	600	700	800	900	1000
Ak .500	Throw X/Y	3-5/4-6	3-5/4-8	4-6/5-9	4-8/6-11	5-9/6-12	6-11/7-13	6-12/8-15	7-13/10-18	8-15/11-21	10-18/13-23	12-21/14-27
18 x 12	CFM	295	355	415	475	535	595	715	835	950	1070	1190
Ak .590	Throw X/Y	2-4/4-8	3-5/5-9	4-6/6-11	4-8/7-13	5-9/8-14	6-11/8-15	6-12/10-18	8-14/11-21	9-16/13-23	10-18/15-27	12-21/17-31
21 x 12	CFM	345	415	485	555	625	690	830	970	1100	1240	1375
Ak .690	Throw X/Y	3-5/5-9	3-5/6-11	4-6/7-13	4-8/8-14	4-8/8-15	5-9/10-18	6-11/11-21	7-13/14-26	8-15/16-29	9-17/17-31	10-19/19-35
24 x 12	CFM	400	480	560	640	720	800	960	1140	1280	1440	1600
Ak .800	Throw X/Y	2-4/6-11	4-6/7-13	4-6/8-14	4-8/9-16	4-8/10-18	5-9/11-21	6-12/14-26	8-14/15-29	9-17/17-31	10-19/19-35	10-19/21-39
18 x 15	CFM	375	450	525	600	675	750	900	1050	1200	1350	1500
Ak .75	Throw X/Y	4-6/4-8	4-8/5-9	5-9/6-11	6-11/6-12	6-12/8-14	7-13/8-15	8-15/10-18	9-17/10-19	10-19/13-23	12-22/15-26	14-25/17-29
24 x 15	CFM	500	600	700	800	900	1000	1200	1400	1600	1800	2000
Ak 1.000	Throw X/Y	4-6/6-11	4-8/6-12	5-9/8-14	6-11/9-17	6-12/10-18	7-13/11-21	8-15/13-25	10-18/15-29	11-21/17-32	13-23/20-36	15-27/22-39
24 x 18	CFM	600	720	840	960	1080	1200	1440	1680	1920	2160	2400
Ak 1.200	Throw X/Y	4-8/6-11	5-9/6-12	6-11/7-14	6-12/8-15	7-14/10-19	8-15/11-21	10-18/13-23	11-21/15-27	13-25/18-34	15-30/21-37	16-32/23-41
33 x 21	CFM	960	1150	1340	1530	1725	1920	2300	2690	3070	3450	3840
Ak 1.920	Throw X/Y	4-8/8-15	6-11/10-18	7-13/12-22	8-14/13-25	8-15/15-29	10-18/17-31	12-21/21-35	14-26/24-39	16-29/26-43	17-31/29-47	21-39/35-56
30 x 24	CFM	1000	1200	1400	1600	1800	2000	2400	2800	3200	3600	4000
Ak 2.000	Throw X/Y	6-11/7-13	6-12/8-15	8-14/10-18	8-15/11-21	10-18/13-23	10-19/14-26	12-23/16-29	15-28/19-35	16-31/21-39	19-35/24-43	22-40/29-51



Note: The minimum Throw Dimension is based on a terminal velocity of 200 FPM. The maximum Throw Dimension is based on a terminal velocity of 100 FPM.

Ceiling Height in Feet	Max. Rec. Cooling Temp. Differential	Max. Rec. CFM Per Diff.			
		1400/AL1400			
		Four-Way	Three-Way	Two-Way	One-Way
7	15°	400	300	200	100
8	20°	600	450	300	150
9	25°	1200	900	600	300
10	25°	1800	1350	900	450
12	30°	3200	2400	1600	800
14	30°	4800	3600	2400	1200
16	30°	6000	4500	3000	1500



See Description of NC Criteria on page 96.

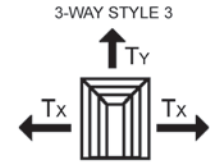


PERFORMANCE DATA—LIGHT COMMERCIAL

Series 1400/AL1400 Square/Rectangular Ceiling Diffuser

Three-Way Style 3

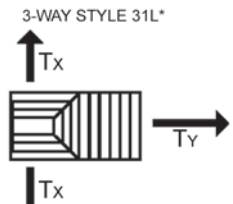
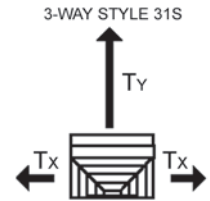
Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
6 x 6	CFM	50	60	70	80	90	100	120	140	160	180	200
Ak .100	Throw X/Y	2-4/1-2	2-4/1-2	3-5/2-3	3-5/2-3	4-7/2-4	4-7/2-4	5-9/3-6	6-10/3-6	6-11/4-7	6-11/4-7	7-13/4-8
9 x 9	CFM	110	135	155	180	205	225	270	315	360	410	450
Ak .220	Throw X/Y	2-4/2-3	3-6/2-3	4-7/2-4	4-8/2-4	5-9/3-6	5-9/3-6	6-12/4-7	7-13/5-9	9-15/6-10	10-18/6-11	11-20/7-12
12 x 12	CFM	200	240	280	320	360	400	480	560	640	725	800
Ak .400	Throw X/Y	4-7/2-5	5-9/3-6	6-10/4-7	6-10/4-7	6-11/4-8	7-13/5-9	9-16/6-10	12-21/7-12	13-22/8-13	14-24/8-14	16-27/9-15
15 x 15	CFM	310	375	440	500	565	625	750	875	1000	1125	1250
Ak .620	Throw X/Y	4-8/2-4	6-11/4-7	7-13/4-7	8-14/4-8	8-15/5-9	9-16/6-10	11-19/7-12	13-23/9-15	15-26/10-18	17-29/11-20	19-33/12-21
18 x 18	CFM	450	540	630	720	810	900	1080	1260	1440	1620	1800
Ak .900	Throw X/Y	4-9/3-5	6-11/4-7	7-13/5-9	9-15/6-10	10-18/6-11	11-20/7-12	13-24/9-15	15-26/10-18	18-32/11-20	20-35/12-22	23-40/14-25
21 x 21	CFM	615	740	860	985	1110	1230	1475	1725	1970	2220	2460
Ak 1.230	Throw X/Y	5-11/3-6	7-13/4-8	11-19/6-11	11-20/7-12	12-21/8-13	13-23/8-14	16-29/10-17	19-34/11-20	21-39/14-23	24-42/16-25	27-45/18-29
24 x 24	CFM	800	960	1120	1275	1440	1600	1925	2240	2570	2890	3200
Ak 1.600	Throw X/Y	7-14/5-9	9-16/6-11	11-19/7-13	13-21/8-14	14-24/9-15	16-27/9-16	17-31/11-19	21-35/14-24	25-39/16-27	28-43/18-31	32-47/20-33
27 x 27	CFM	1010	1215	1420	1615	1820	2020	2430	2840	3240	3650	4040
Ak 2.020	Throw X/Y	7-13/4-9	9-16/6-11	11-20/7-13	13-23/9-15	14-25/9-16	15-27/10-18	18-31/12-21	22-37/14-25	25-41/18-30	28-46/19-33	31-50/21-36



Note: The minimum Throw Dimension is based on a terminal velocity of 170 FPM. The maximum Throw Dimension is based on a terminal velocity of 85 FPM.

Three-Way Style 31S and Style 31L*

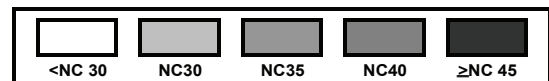
Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
9 x 6	CFM	75	90	105	120	135	150	180	210	240	270	300
Ak .150	Throw X/Y	2-3/4-7	2-3/4-7	2-3/4-7	2-4/4-8	3-5/5-8	3-6/5-9	4-7/6-11	4-8/7-12	6-10/9-15	6-11/10-17	6-11/11-19
9 x 9*	CFM	115	135	155	180	200	225	270	315	360	405	450
Ak .220	Throw X/Y	1-3/4-7	2-3/5-9	2-3/6-11	2-4/7-12	3-6/8-14	3-6/9-16	4-7/10-18	4-8/12-21	5-9/14-24	6-10/16-28	6-11/18-32
12 x 9	CFM	150	180	210	240	270	300	360	420	480	540	600
Ak .300	Throw X/Y	2-3/4-8	2-4/5-9	3-6/6-10	4-7/7-12	4-8/8-14	4-8/8-14	5-9/9-16	6-10/11-20	7-12/14-24	8-13/15-26	9-15/16-28
12 x 12*	CFM	200	240	280	320	360	400	480	560	640	720	800
Ak .40	Throw X/Y	2-3/5-11	2-4/7-13	3-6/9-15	3-6/10-17	4-7/11-19	4-8/12-21	6-10/15-26	6-11/18-32	7-12/20-34	7-13/21-36	8-14/24-42
15 x 15*	CFM	310	375	440	500	565	625	750	875	1000	1125	1250
Ak .620	Throw X/Y	2-4/7-13	3-6/10-18	4-7/11-20	4-8/12-21	5-9/14-25	5-9/14-25	6-11/19-34	7-13/22-38	8-14/25-43	9-16/27-44	10-18/30-45
18 x 15	CFM	375	450	525	600	675	750	900	1050	1200	1350	1500
Ak .750	Throw X/Y	3-6/7-13	4-7/9-15	4-8/9-16	5-9/11-20	6-10/13-23	6-11/15-26	7-13/17-30	9-16/19-35	10-18/22-39	11-20/27-40	13-25/30-46
21 x 18	CFM	525	630	735	840	945	1050	1260	1475	1680	1890	2100
Ak 1.050	Throw X/Y	4-7/8-14	4-8/10-18	5-9/11-20	6-10/18-23	6-11/14-25	7-12/16-28	9-15/19-34	10-18/22-39	11-20/27-40	13-23/29-46	15-26/33-51
21 x 21*	CFM	615	740	860	985	1110	1230	1475	1725	1970	2210	2460
Ak 1.230	Throw X/Y	3-6/9-17	4-8/12-21	5-9/16-27	6-10/17-30	7-11/19-32	7-12/21-36	9-15/26-40	11-19/30-45	13-22/34-51	15-25/39-56	17-28/43-60
27 x 21	CFM	780	940	1080	1250	1400	1560	1870	2180	2500	2800	3120
Ak 1.560	Throw X/Y	5-9/10-18	5-9/11-20	6-10/13-22	7-12/15-26	8-14/18-32	9-16/21-36	11-19/23-40	13-21/25-43	15-24/29-47	17-29/34-53	19-33/38-59
30 x 24	CFM	1000	1200	1400	1600	1800	2000	2400	2800	3200	3500	4000
Ak 2.000	Throw X/Y	5-9/11-20	6-11/13-23	7-13/16-27	8-14/17-31	9-16/20-35	10-18/22-40	12-21/25-44	14-25/31-48	16-29/34-53	18-32/38-57	20-35/43-61
33 x 27	CFM	1230	1475	1725	1970	2220	2460	2950	3450	3925	4425	4920
Ak 2.460	Throw X/Y	6-10/13-23	7-13/17-28	8-14/19-33	9-16/21-35	11-18/23-39	12-20/25-44	14-25/29-47	16-29/33-51	18-33/37-56	22-37/42-59	25-41/47-64



*Style 31L not available in square configuration

Note: The minimum Throw Dimension is based on a terminal velocity of 170 FPM. The maximum Throw Dimension is based on a terminal velocity of 85 FPM.

Ceiling Height in Feet	Max. Rec. Cooling Temp. Differential	Max. Rec. CFM Per Diff.			
		1400/AL1400			
		Four-Way	Three-Way	Two-Way	One-Way
7	15°	400	300	200	100
8	20°	600	450	300	150
9	25°	1200	900	600	300
10	25°	1800	1350	900	450
12	30°	3200	2400	1600	800
14	30°	4800	3600	2400	1200
16	30°	6000	4500	3000	1500

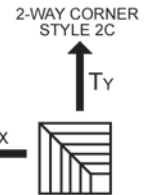


See Description of NC Criteria on page 96.

Series 1400/AL1400 Square/Rectangular Ceiling Diffuser

Two-Way Corner Style 2C

Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
6 x 6	CFM	45	55	60	70	80	90	105	125	140	160	180
Ak .090	Throw X/Y	1-3/1-3	2-5/2-5	2-5/2-5	3-7/3-7	3-7/3-7	5-8/5-8	5-8/5-8	6-11/6-11	7-12/7-12	8-13/8-13	9-14/9-14
9 x 9	CFM	95	115	135	155	175	195	235	275	315	350	390
Ak .190	Throw X/Y	4-6/4-6	4-6/4-6	5-7/5-7	5-8/5-8	6-10/6-10	6-11/6-11	8-13/8-13	9-14/9-14	10-16/10-16	13-20/13-20	14-22/14-22
12 x 12	CFM	175	210	245	280	315	350	420	480	560	635	700
Ak .350	Throw X/Y	5-7/5-7	5-8/5-8	6-11/6-11	8-13/8-13	8-13/8-13	9-14/9-14	10-16/10-16	13-19/13-19	14-22/14-22	16-26/16-26	19-29/19-29
15 x 15	CFM	275	330	385	440	495	550	660	775	885	995	1100
Ak .550	Throw X/Y	5-9/5-9	7-12/7-12	8-13/8-13	9-14/9-14	10-16/10-16	11-18/11-18	13-21/13-21	15-25/15-25	19-29/19-29	21-33/21-33	23-36/23-36
18 x 18	CFM	390	470	545	625	700	780	935	1090	1250	1410	1560
Ak .780	Throw X/Y	7-12/7-12	9-14/9-14	10-15/10-15	10-16/10-16	12-19/12-19	14-22/14-22	16-25/16-25	18-29/18-29	21-33/21-33	25-38/25-38	28-42/28-42
21 x 21	CFM	540	650	760	865	975	1080	1300	1515	1730	1945	2160
Ak 1.080	Throw X/Y	8-13/8-13	10-15/10-15	12-18/12-18	13-21/13-21	15-23/15-23	17-28/17-28	20-32/20-32	22-35/22-35	25-39/25-39	29-43/29-43	32-47/32-47
24 x 24	CFM	705	845	990	1130	1270	1410	1690	1950	2250	2540	2820
Ak 1.410	Throw X/Y	9-16/9-16	11-18/11-18	13-21/13-21	15-24/15-24	17-27/17-27	19-29/19-29	22-34/22-34	25-38/25-38	29-42/29-42	33-47/33-47	37-51/37-51
27 x 27	CFM	880	1055	1230	1410	1585	1760	2110	2470	2820	3170	3520
Ak 1.760	Throw X/Y	10-17/10-17	12-19/12-19	14-22/14-22	16-26/16-26	19-29/19-29	21-33/21-33	24-37/24-37	28-41/28-41	32-46/32-46	35-50/35-50	39-55/39-55



Note: The minimum Throw Dimension is based on a terminal velocity of 135 FPM. The maximum Throw Dimension is based on a terminal velocity of 65 FPM.

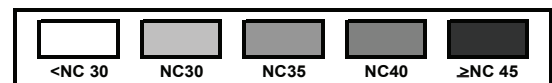
Two-Way Corner Style 2CR

Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
9 x 6	CFM	65	80	95	105	120	130	160	185	210	240	260
Ak .130	Throw X/Y	2-4/3-5	3-5/4-7	4-6/5-8	4-6/5-8	5-7/6-11	5-7/6-11	6-9/8-13	6-10/9-14	7-12/11-16	8-13/13-21	10-16/16-25
12 x 6	CFM	90	105	120	140	160	175	210	245	280	315	350
Ak .170	Throw X/Y	2-4/3-6	3-5/5-8	3-5/6-11	4-6/7-12	5-7/8-13	5-7/9-14	5-8/10-15	6-11/13-20	7-12/15-24	8-13/17-26	10-15/19-29
15 x 6	CFM	110	130	155	175	200	220	265	310	350	395	440
Ak .220	Throw X/Y	2-4/5-8	3-5/6-10	3-5/7-12	4-6/8-13	5-7/10-15	5-8/11-17	6-9/13-20	6-10/15-24	8-12/17-27	10-14/20-30	11-17/22-34
12 x 9	CFM	130	155	180	210	235	260	310	365	415	470	520
Ak .260	Throw X/Y	4-6/5-7	4-6/5-8	5-7/6-10	5-8/6-11	6-10/8-12	6-11/9-14	8-13/10-16	11-17/14-21	19-19/16-24	13-20/17-26	14-23/19-30
15 x 9	CFM	165	195	230	260	295	325	390	460	525	590	650
Ak .320	Throw X/Y	4-6/6-10	5-7/6-11	6-8/8-12	6-9/10-14	6-11/10-16	7-12/12-19	9-14/14-22	10-15/16-25	12-17/19-29	13-20/21-33	14-22/23-35
18 x 9	CFM	195	235	275	310	350	390	470	545	625	700	780
Ak .390	Throw X/Y	4-6/6-11	5-7/8-13	5-7/9-14	5-8/10-15	6-10/11-18	7-12/13-21	8-13/16-25	9-15/19-29	11-17/22-33	12-20/23-35	14-22/26-39
21 x 9	CFM	230	275	320	365	410	455	545	635	730	820	910
Ak .450	Throw X/Y	4-6/8-13	5-7/10-15	6-8/11-17	6-9/12-19	6-10/13-21	6-11/15-24	8-13/18-29	10-15/22-34	12-18/24-38	13-21/26-42	15-25/30-47
15 x 12	CFM	220	260	305	350	390	435	525	610	700	785	870
Ak .430	Throw X/Y	5-7/5-8	5-8/6-11	6-10/8-13	7-12/9-14	8-13/10-16	9-14/12-19	11-18/14-22	13-20/16-25	15-24/19-29	16-26/21-32	18-29/24-37
18 x 12	CFM	260	315	370	420	475	525	630	735	840	945	1050
Ak .520	Throw X/Y	4-7/6-11	5-8/8-13	6-10/9-14	7-12/11-17	9-14/13-21	10-15/14-22	12-18/17-26	14-20/21-30	16-24/23-34	18-27/27-38	21-31/29-42
21 x 15	CFM	380	455	530	605	685	760	915	1060	1220	1370	1520
Ak .760	Throw X/Y	6-10/8-13	6-11/9-14	8-13/11-18	9-14/13-20	10-16/15-24	12-19/16-26	13-21/19-29	15-26/22-33	18-29/25-38	21-33/29-44	25-38/32-49
24 x 15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750
Ak .870	Throw X/Y	4-9/8-14	6-11/10-16	8-13/13-20	9-14/15-24	10-16/16-26	12-19/19-29	14-22/22-34	16-25/25-38	19-29/29-44	21-32/33-48	25-37/37-52
21 x 18	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830
Ak .980	Throw X/Y	6-11/8-13	8-13/10-15	10-15/11-18	11-17/12-20	12-19/14-22	13-21/16-25	16-26/19-29	19-30/22-34	22-34/26-39	25-38/29-43	27-42/32-48
27 x 21	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760
Ak 1.380	Throw X/Y	8-13/10-17	10-15/13-20	12-19/15-24	14-21/17-27	15-23/19-30	16-26/21-33	20-30/25-37	24-36/29-42	28-41/33-46	30-46/37-51	34-51/42-56



Note: The minimum Throw Dimension is based on a terminal velocity of 135 FPM. The maximum Throw Dimension is based on a terminal velocity of 65 FPM.

Ceiling Height in Feet	Max. Rec. Cooling Temp. Differential	Max. Rec. CFM Per Diff.			
		1400/AL1400			
		Four-Way	Three-Way	Two-Way	One-Way
7	15°	400	300	200	100
8	20°	600	450	300	150
9	25°	1200	900	600	300
10	25°	1800	1350	900	450
12	30°	3200	2400	1600	800
14	30°	4800	3600	2400	1200
16	30°	6000	4500	3000	1500



See Description of NC Criteria on page 96.

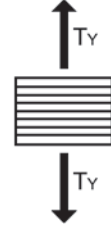


Series 1400/AL1400 Square/Rectangular Ceiling Diffuser

Two-Way Style 2L

Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
9 x 6	CFM	65	80	95	105	120	130	160	185	210	240	260
Ak .130	Throw Y	3-5	3-5	5-7	6-8	7-10	7-10	8-12	10-14	11-17	14-20	16-23
12 x 6	CFM	90	105	120	140	160	175	210	245	280	315	350
Ak .170	Throw Y	3-5	5-7	6-8	6-9	7-10	8-12	10-14	12-18	15-21	16-23	17-25
15 x 6	CFM	110	130	155	175	200	220	265	310	350	395	440
Ak .220	Throw Y	4-6	6-8	6-9	7-10	9-13	10-14	10-15	13-19	15-21	18-26	21-30
12 x 9	CFM	130	155	180	210	235	260	310	365	415	470	520
Ak .260	Throw Y	5-7	6-8	6-9	8-12	10-14	10-14	11-17	14-21	16-24	19-27	20-31
15 x 9	CFM	165	195	230	260	295	325	390	460	525	590	650
Ak .320	Throw Y	6-8	7-10	8-12	9-13	10-15	12-18	14-20	16-24	18-26	21-31	24-35
18 x 9	CFM	195	235	275	310	350	390	470	545	625	700	780
Ak .390	Throw Y	6-9	8-12	9-13	10-14	11-17	13-19	15-21	17-25	19-29	22-33	25-39
21 x 9	CFM	230	275	320	365	410	455	545	635	730	820	910
Ak .450	Throw Y	7-10	8-12	9-13	11-16	12-18	14-20	16-24	19-27	22-32	25-36	29-41
15 x 12	CFM	220	260	305	350	390	435	525	610	700	785	870
Ak .430	Throw Y	6-9	8-12	10-14	10-15	12-18	14-20	15-24	18-27	22-32	24-36	28-41
18 x 12	CFM	260	315	370	420	475	525	630	735	840	945	1050
Ak .520	Throw Y	7-11	9-13	11-15	12-18	13-19	15-21	18-26	20-29	23-34	27-39	31-42
21 x 15	CFM	380	455	530	605	685	760	915	1060	1220	1370	1520
Ak .760	Throw Y	9-13	10-15	12-18	14-20	15-23	17-25	20-30	23-34	27-40	31-44	34-48
24 x 15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750
Ak .870	Throw Y	8-14	11-16	13-19	15-21	17-25	19-29	22-33	25-38	29-42	33-48	38-54
21 x 18	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830
Ak .910	Throw Y	10-15	11-17	13-19	16-22	19-25	20-28	23-33	26-38	29-42	34-46	38-51
27 x 21	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760
Ak 1.300	Throw Y	11-17	14-20	17-24	19-27	21-31	23-35	27-40	34-46	38-51	42-56	47-61

2-WAY STYLE 2L

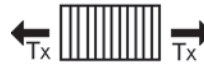


Note: The minimum Throw Dimension is based on a terminal velocity of 135 FPM. The maximum Throw Dimension is based on a terminal velocity of 65 FPM.

Two-Way Style 2S

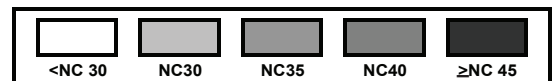
Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
9 x 6	CFM	65	80	95	105	120	130	160	185	210	240	265
Ak .130	Throw X	3-6	4-7	5-8	6-9	8-12	9-13	10-14	11-17	13-19	15-23	17-26
12 x 6	CFM	90	105	120	140	160	175	210	245	280	315	350
Ak .170	Throw X	4-7	6-8	7-10	8-12	9-13	10-14	11-17	14-20	15-23	17-25	19-29
15 x 6	CFM	110	130	155	175	200	220	265	310	350	395	440
Ak .220	Throw X	5-7	6-9	7-10	9-13	10-15	11-17	13-19	15-23	18-26	21-30	23-34
12 x 9	CFM	130	155	180	210	235	260	310	365	415	470	520
Ak .260	Throw X	6-8	6-9	7-10	9-13	10-15	13-19	15-21	17-25	19-29	21-31	
15 x 9	CFM	165	195	230	260	295	325	390	460	525	590	650
Ak .320	Throw X	7-10	8-12	9-13	10-14	12-18	14-20	16-24	18-26	19-29	23-33	27-39
18 x 9	CFM	195	235	275	310	350	390	470	545	625	700	780
Ak .390	Throw X	7-10	9-13	11-17	12-18	13-19	15-23	18-27	20-30	22-32	25-38	29-43
21 x 9	CFM	230	275	320	365	410	455	545	635	730	820	910
Ak .450	Throw X	9-13	9-14	10-15	12-18	15-21	16-24	19-29	22-33	26-38	29-42	32-47
15 x 12	CFM	220	260	305	350	390	435	525	610	700	785	870
Ak .430	Throw X	7-10	8-12	10-14	11-17	13-19	15-21	16-24	19-27	22-33	25-38	29-42
18 x 12	CFM	260	315	370	420	475	525	630	735	840	945	1050
Ak .520	Throw X	8-11	10-14	10-15	12-18	14-20	15-23	18-27	23-33	25-37	29-42	32-47
21 x 15	CFM	380	455	530	605	685	760	915	1060	1220	1370	1520
Ak .760	Throw X	10-15	11-17	14-20	15-23	18-26	20-29	22-33	26-38	29-42	35-46	39-51
24 x 15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750
Ak .870	Throw X	9-14	11-17	15-21	17-25	19-29	22-32	25-37	28-41	33-45	38-51	43-56
21 x 18	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830
Ak .910	Throw X	11-17	12-18	14-20	16-24	19-27	20-29	23-34	27-40	32-45	37-49	40-55
27 x 21	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760
Ak 1.300	Throw X	12-18	15-21	18-25	21-29	23-33	25-37	29-43	33-48	38-53	43-59	49-63

2-WAY STYLE 2S



Note: The minimum Throw Dimension is based on a terminal velocity of 135 FPM. The maximum Throw Dimension is based on a terminal velocity of 65 FPM.

Ceiling Height in Feet	Max. Rec. Cooling Temp. Differential	Max. Rec. CFM Per Diff.			
		1400/AL1400			
		Four-Way	Three-Way	Two-Way	One-Way
7	15°	400	300	200	100
8	20°	600	450	300	150
9	25°	1200	900	600	300
10	25°	1800	1350	900	450
12	30°	3200	2400	1600	800
14	30°	4800	3600	2400	1200
16	30°	6000	4500	3000	1500



See Description of NC Criteria on page 96.

Series 1400/AL1400 Square/Rectangular Ceiling Diffuser

Two-Way Style 2

Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
6 x 6	CFM	45	55	60	70	80	90	105	125	140	160	180
Ak .090	Throw Y	3-5	3-5	4-7	4-7	5-8	5-8	6-9	9-13	10-15	11-17	12-18
9 x 9	CFM	95	115	135	155	175	195	235	275	315	350	390
Ak .190	Throw Y	5-7	6-8	6-8	6-9	8-12	9-13	11-17	12-18	14-20	16-24	18-26
12 x 12	CFM	175	210	245	280	315	350	420	480	560	635	700
Ak .350	Throw Y	4-7	6-9	9-13	10-15	11-17	12-18	14-20	17-23	18-27	21-31	23-35
15 x 15	CFM	275	330	385	440	495	550	660	775	885	995	1100
Ak .550	Throw Y	8-12	10-14	10-15	12-18	14-20	15-23	18-27	22-32	24-36	26-39	29-43
18 x 18	CFM	390	470	545	625	700	780	935	1090	1250	1410	1560
Ak .780	Throw Y	9-15	11-17	12-18	14-20	15-23	18-26	20-30	24-36	27-42	31-45	36-51
21 x 21	CFM	540	650	760	865	975	1080	1300	1515	1730	1945	2160
Ak 1.080	Throw Y	11-17	14-20	15-23	18-26	19-29	23-35	26-40	29-44	34-49	38-54	43-59
24 x 24	CFM	705	845	990	1130	1270	1410	1690	1950	2250	2540	2820
Ak 1.410	Throw Y	12-19	14-22	17-25	20-30	21-33	23-35	27-40	34-46	39-51	42-56	46-60
27 x 27	CFM	880	1055	1230	1410	1585	1760	2110	2470	2820	3170	3520
Ak 1.760	Throw Y	12-20	15-23	18-26	21-31	24-36	26-40	30-45	35-50	39-56	43-61	48-66

2-WAY STYLE 2



Note: The minimum Throw Dimension is based on a terminal velocity of 135 FPM. The maximum Throw Dimension is based on a terminal velocity of 65 FPM.

One-Way Style

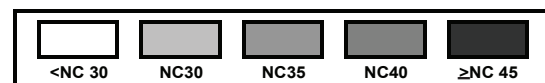
Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
6 x 6	CFM	45	55	60	70	80	90	105	125	140	160	180
Ak .090	Throw	3-5	4-7	5-8	6-9	8-10	9-12	10-14	12-18	14-20	15-22	16-24
9 x 9	CFM	95	115	135	155	175	195	235	275	315	350	390
Ak .190	Throw	6-9	7-10	9-13	10-14	11-17	13-19	15-21	18-26	19-29	22-33	25-38
12 x 12	CFM	175	210	245	280	315	350	420	480	560	635	700
Ak .350	Throw	8-12	10-14	12-18	13-19	15-21	18-26	21-31	24-36	27-40	30-43	33-45
15 x 15	CFM	275	330	385	440	495	550	660	775	885	995	1100
Ak .550	Throw	10-16	13-19	14-22	18-26	19-29	21-31	25-37	30-43	35-46	38-50	42-56
18 x 18	CFM	390	470	545	625	700	780	935	1090	1250	1410	1560
Ak .780	Throw	13-21	15-23	18-26	19-29	22-33	25-38	29-42	35-46	42-49	44-52	49-56
21 x 21	CFM	540	650	760	865	975	1080	1300	1515	1730	1945	2160
Ak 1.080	Throw	14-23	17-25	21-30	24-36	27-40	30-43	34-48	39-54	44-60	48-64	53-68
24 x 24	CFM	705	845	990	1130	1270	1410	1690	1950	2250	2540	2820
Ak 1.410	Throw	20-29	23-33	24-36	27-40	30-44	35-48	39-54	43-60	48-65	52-69	56-74
27 x 27	CFM	880	1055	1230	1410	1585	1760	2110	2470	2820	3170	3520
Ak 1.760	Throw	19-27	22-31	25-38	28-42	33-47	36-53	43-58	49-63	54-68	60-73	65-77

1-WAY STYLE



Note: The minimum Throw Dimension is based on a terminal velocity of 135 FPM. The maximum Throw Dimension is based on a terminal velocity of 65 FPM.

Ceiling Height in Feet	Max. Rec. Cooling Temp. Differential	Max. Rec. CFM Per Diff.			
		1400/AL1400			
		Four-Way	Three-Way	Two-Way	One-Way
7	15°	400	300	200	100
8	20°	600	450	300	150
9	25°	1200	900	600	300
10	25°	1800	1350	900	450
12	30°	3200	2400	1600	800
14	30°	4800	3600	2400	1200
16	30°	6000	4500	3000	1500



See Description of NC Criteria on page 96.



Series 1400/AL1400 Square/Rectangular Ceiling Diffuser

One-Way Style 1L

Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
9 x 6	CFM	65	80	95	105	120	130	160	185	210	240	265
Ak .130	Throw	5-8	6-9	7-11	8-12	9-13	10-15	12-18	15-21	16-24	19-29	21-32
12 x 6	CFM	90	105	120	140	160	175	210	245	280	315	350
Ak .170	Throw	5-8	6-9	6-13	9-14	10-15	12-18	14-20	17-25	18-27	20-30	23-35
15 x 6	CFM	110	130	155	175	200	220	265	310	350	395	440
Ak .220	Throw	5-8	7-10	9-13	10-15	12-18	14-20	16-24	18-27	21-31	24-36	28-41
12 x 9	CFM	130	155	180	210	235	260	310	365	415	470	520
Ak .260	Throw	7-10	8-12	10-14	11-17	12-18	14-20	17-25	19-29	22-23	25-37	28-41
15 x 9	CFM	165	195	230	260	295	325	390	460	525	590	650
Ak .320	Throw	9-13	10-14	11-17	12-18	15-23	17-25	20-30	22-33	25-37	29-42	32-45
18 x 9	CFM	195	235	275	310	350	390	470	545	625	700	780
Ak .390	Throw	9-13	10-15	12-18	14-20	16-24	18-26	20-30	25-37	27-40	31-44	36-48
15 x 12	CFM	220	260	305	350	390	435	525	610	700	785	870
Ak .430	Throw	10-14	11-17	13-19	15-23	18-26	19-29	22-32	26-39	30-43	35-48	39-54
18 x 12	CFM	260	315	370	420	475	525	630	735	840	945	1050
Ak .520	Throw	10-15	12-18	14-20	17-25	19-27	21-30	25-36	28-41	32-45	36-49	42-54
21 x 15	CFM	380	455	530	605	685	760	915	1060	1220	1370	1520
Ak .760	Throw	13-19	15-21	18-26	19-29	22-34	25-38	29-42	34-46	38-51	43-56	48-61
24 x 15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750
Ak .870	Throw	14-22	16-24	18-27	21-31	24-36	27-40	30-43	35-47	41-52	46-57	53-61
21 x 18	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830
Ak .910	Throw	14-20	16-24	19-29	22-32	24-36	26-39	30-43	35-47	41-51	45-56	49-62
27 x 21	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760
Ak 1.380	Throw	17-27	19-29	23-35	26-40	30-45	34-49	38-54	43-60	48-67	54-72	59-80

1-WAY STYLE 1L



Note: The minimum Throw Dimension is based on a terminal velocity of 135 FPM. The maximum Throw Dimension is based on a terminal velocity of 65 FPM.

One-Way Style 1S

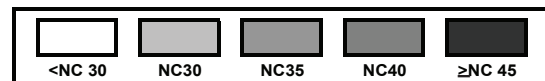
Face Velocity		500	600	700	800	900	1000	1200	1400	1600	1800	2000
Pressure Loss		.020	.020	.030	.040	.050	.060	.090	.120	.160	.200	.250
9 x 6	CFM	65	80	95	105	120	130	160	185	210	240	265
Ak .130	Throw	4-7	5-9	7-11	9-13	11-17	13-19	15-21	16-24	18-27	21-32	23-35
12 x 6	CFM	90	105	120	140	160	175	210	245	280	315	350
Ak .170	Throw	6-10	8-12	10-15	12-17	14-19	15-21	17-25	21-31	23-35	25-37	29-44
15 x 6	CFM	110	130	155	175	200	220	265	310	350	395	440
Ak .220	Throw	9-12	10-14	12-18	14-20	16-24	18-26	21-31	23-35	27-40	31-45	35-51
12 x 9	CFM	130	155	180	210	235	260	310	365	415	470	520
Ak .260	Throw	8-12	10-14	10-15	12-18	14-20	16-24	18-27	23-33	24-37	28-42	30-44
15 x 9	CFM	165	195	230	260	295	325	390	460	525	590	650
Ak .320	Throw	10-15	12-18	13-19	15-21	18-26	22-32	23-35	26-39	30-43	35-46	38-47
18 x 9	CFM	195	235	275	310	350	390	470	545	625	700	780
Ak .390	Throw	11-17	13-19	15-23	17-25	20-30	22-33	25-38	31-44	34-45	38-47	42-51
15 x 12	CFM	220	260	305	350	390	435	525	610	700	785	870
Ak .430	Throw	11-16	12-18	15-21	17-25	19-29	22-32	25-38	28-44	33-45	36-49	42-54
18 x 12	CFM	260	315	370	420	475	525	630	735	840	945	1050
Ak .520	Throw	12-18	14-20	16-24	19-27	21-31	22-33	27-40	32-45	37-47	42-50	45-56
21 x 15	CFM	380	455	530	605	685	760	915	1060	1220	1370	1520
Ak .760	Throw	14-20	16-24	19-29	22-32	24-37	28-41	33-45	39-48	43-52	48-58	54-63
24 x 15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750
Ak .870	Throw	16-23	18-26	22-32	25-37	28-41	32-45	37-47	44-54	49-59	54-66	59-71
21 x 18	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830
Ak .910	Throw	18-24	18-26	21-31	24-33	26-38	28-41	33-47	39-53	44-58	48-63	54-69
27 x 21	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760
Ak 1.380	Throw	19-29	21-32	25-38	31-44	37-49	40-51	42-55	46-61	51-66	56-71	61-77

1-WAY STYLE 1S



Note: The minimum Throw Dimension is based on a terminal velocity of 135 FPM. The maximum Throw Dimension is based on a terminal velocity of 65 FPM.

Ceiling Height in Feet	Max. Rec. Cooling Temp. Differential	Max. Rec. CFM Per Diff.			
		1400/AL1400			
		Four-Way	Three-Way	Two-Way	One-Way
7	15°	400	300	200	100
8	20°	600	450	300	150
9	25°	1200	900	600	300
10	25°	1800	1350	900	450
12	30°	3200	2400	1600	800
14	30°	4800	3600	2400	1200
16	30°	6000	4500	3000	1500



See Description of NC Criteria on page 96.

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		
4-way throw in feet	9	12	15	18	21	24	27	30	1000	400
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		
4-way throw in feet	10	13	17	20	23	27	30	33	1250	500
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		
4-way throw in feet	11	15	18	22	25	29	33	36	1500	600
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		
4-way throw in feet	12	16	20	24	28	31	35	39	1750	700
Noise Criteria	<20	<25	<30	<30	<35	<40	<40	<40		
Static Press inches wc	.028	.040	.057	.077	.101	.128	.159	.193		
CFM	200	356	556	800	1089	1422	1800	2222		
4-way throw in feet	13	17	21	25	29	34	38	42	2000	800
Noise Criteria	<20	<25	<30	<35	<40	<45	<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)

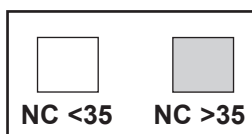
Step-Down Diffusers 1500 / 1520 / AL1520 1530 / 1540 / 1540D / 1560 / 1570

1600 Adjustable Round Diffuser

Neck Velocity	400	500	600	700	800	900	1000	1200	1400
6" CFM	80	100	120	140	160	180	200	235	275
Ps	<.010	<.010	<.010	<.010	0.014	0.02	0.02	0.03	0.03
Throw	2.00	2.00	2.0	3.0	3.0	4.0	4.0	5.0	6.0
8" CFM	140	175	210	245	280	315	350	420	490
Ps	<.010	<.010	<.010	<.010	0.01	0.02	0.02	0.03	0.04
Throw	3.5	3.0	3.0	4.0	4.0	5.0	5.0	7.0	8.0
10" CFM	218	273	327	382	436	491	545	654	763
Ps	<.010	<.010	<.010	0.01	0.01	0.02	0.02	0.03	0.04
Throw	3.0	3.0	4.0	5.0	5.0	6.0	7.0	8.0	10.0
12" CFM	315	390	470	550	630	705	785	940	1100
Ps	<.010	<.010	<.010	0.01	0.01	0.02	0.02	0.03	0.04
Throw	3.0	4.0	5.0	6.0	7.0	7.0	8.0	10.0	11.0
14" CFM	425	530	635	745	850	955	1060	1270	1490
Ps	<.010	<.010	<.010	0.01	0.01	0.02	0.02	0.03	0.04
Throw	4.0	5.0	6.0	7.0	8.0	8.0	9.0	11.0	13.0
16" CFM	560	700	840	980	1120	1260	1400	1680	1960
Ps	<.010	<.010	<.010	0.01	0.01	0.02	0.02	0.03	0.04
Throw	4.0	5.0	7.0	8.0	9.0	10.0	11.0	13.0	15.0
18" CFM	710	885	1060	1240	1420	1590	1770	2120	2480
Ps	<.010	<.010	<.010	0.01	0.01	0.02	0.02	0.03	0.04
Throw	5.0	6.0	7.0	9.0	10.0	11.0	12.0	15.0	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" CFM	80	100	120	135	155	175	195	235	275	315
Ps	.008	.012	.017	.021	.028	.035	.043	.063	.086	.112
NC	<20	<20	<20	<20	<20	<20	<20	20	25	30
Ak .200										
Throw	2.0	3.0	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0
8" CFM	140	175	210	245	280	315	350	420	490	560
Ps	.010	.015	.022	.029	.038	.049	.060	.086	.117	.150
NC	<20	<20	<20	<20	<20	<20	<20	20	25	30
Ak .350										
Throw	3.5	4.5	5.5	6.5	7.0	8.0	9.0	10.5	12.5	14.5
10" CFM	220	270	325	380	435	490	545	655	765	870
Ps	.014	.021	.030	.041	.054	.068	.084	.122	.167	.212
NC	<20	<20	<20	20	25	30	35	35	40	45
Ak 1.200										
Throw	5.5	7.0	8.5	10.0	11.0	12.5	14.0	17.0	19.5	22.0
12" CFM	315	390	470	550	630	705	785	940	1100	1255
Ps	.015	.023	.033	.045	.060	.072	.094	.132	.180	.230
NC	<20	<20	<20	20	25	30	35	35	40	45
Ak 1.650										
Throw	6.0	7.5	9.0	10.5	12.0	13.5	15.0	18.0	21.0	24.0
14" CFM	430	535	640	750	855	960	1070	1285	1500	1710
Ps	.023	.036	.051	.071	.093	.115	.140	.205	.277	.350
NC	<20	<20	20	25	30	35	40	40	45	50
Ak 2.060										
Throw	6.5	8.0	9.5	11.5	13.0	14.5	16.0	19.0	22.5	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" CFM	60	80	100	120	135	155	175	195	235	275	315
Ps	.004	.006	.010	.014	.018	.023	.030	.037	.054	.073	.096
NC	<20	<20	<20	<20	<20	<20	20	25	30	35	40
An .200											
Throw	1.0	1.0	1.5	1.5	2.0	2.0	2.5	2.5	3.0	3.5	4.0
8" CFM	105	140	175	210	245	280	315	350	420	490	560
Ps	.010	.010	.015	.022	.029	.038	.049	.060	.086	.117	.150
NC	<20	<20	<20	<20	20	25	30	30	35	40	45
An .350											
Throw	1.5	2.0	2.0	2.5	3.0	3.5	4.0	4.5	5.5	6.5	7.0
10" CFM	165	220	275	325	380	435	490	545	655	765	875
Ps	.014	.014	.021	.030	.041	.054	.068	.084	.122	.167	.212
NC	<20	<20	<20	<20	20	25	30	35	40	45	50
An .540											
Throw	2.0	3.0	3.5	4.0	5.0	5.5	6.5	7.0	8.5	10.0	10.5
12" CFM	235	315	395	470	550	630	705	785	945	1100	1260
Ps	.015	.015	.023	.033	.045	.060	.072	.094	.132	.180	.230
NC	<20	<20	<20	20	25	30	35	35	40	45	50
An .780											
Throw	3.0	4.0	5.0	6.0	7.0	8.0	8.5	9.5	11.5	13.5	14.0
14" CFM	320	430	535	640	750	855	960	1070	1280	1500	1710
Ps	.023	.023	.036	.051	.071	.093	.115	.140	.205	.277	.350
NC	<20	<20	20	25	30	35	40	45	50	55	55
An 1.070											
Throw	5.0	7.0	8.5	10.5	12.0	13.5	15.5	17.0	20.5	24.0	24.5

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



1520-12 Step-Down Diffusers

Neck Velocity		400	500	600	700	800	1000	1200	1400	1600
6"	CFM	80	100	120	135	155	195	235	275	315
An .200	Ps	.008	.012	.019	.025	.033	.052	.074	.101	.131
	NC	<20	<20	<20	<20	<20	25	30	35	40
	Throw	4	5	5	6	7	8	9	10	11
7"	CFM	107	134	160	187	214	267	321	374	428
An .275	Ps	.01	.015	.023	.031	.041	.064	.091	.125	.162
	NC	<20	<20	<20	<20	20	30	35	40	45
	Throw	4	5	6	7	8	10	11	12	13
8"	CFM	140	175	210	245	280	350	420	490	560
An .350	Ps	.012	.019	.028	.038	.05	.078	.112	.153	.199
	NC	<20	<20	<20	<20	20	30	35	40	45
	Throw	5	6	7	8	9	11	12	14	15

Terminal Velocity of 75 FPM

An = Neck Area in Sq. Ft.

NC = Noise Criteria based on 10dB room absorption (Re: 10^{-12} watts).

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: 10⁻¹² watts).



1280 Filter Grille

Average Face Velocity		300	400	500	600
659T	CFM	730	975	1220	1465
Ak 2.440	-Ps	.017	.030	.047	.067
PFT	CFM	820	1095	1370	1645
Ak 2.740	-Ps	.028	.050	.078	.113
659-TI	CFM	670	890	1115	1340
w/12" collar	-Ps	.084	.147	.230	.330
w/14" collar	CFM	680	905	1130	1355
Ak 2.260	-Ps	.060	.105	.165	.240
w/16" collar	CFM	695	930	1160	1390
Ak 2.320	-Ps	.039	.068	.106	.155
PFTI	CFM	770	1025	1280	1535
w/12" collar	-Ps	.098	.170	.265	.380
w/14" collar	CFM	775	1035	1295	1555
Ak 2.590	-Ps	.076	.125	.200	.283
w/16" collar	CFM	790	1050	1315	1580
Ak 2.630	-Ps	.055	.094	.145	.210

Note: Tested without filters. Typical capacity is 2 CFM per square inch of nominal filter area. Recommended face velocity is 300-450 FPM. Velocities higher will decrease filter performance, increase flow resistance, and possibly be of noise concern. Velocity measured 1" from face.

4230 Perforated Return

Neck Velocity		200	300	400	500	600	700	800
6" Diameter	CFM	40	60	80	100	120	135	155
	-Ps	.003	.007	.012	.019	.027	.034	.044
8" Diameter	CFM	70	105	140	175	210	245	380
	-Ps	.004	.010	.017	.026	.037	.051	.068
10" Diameter	CFM	110	165	220	275	325	380	435
	-Ps	.005	.011	.020	.030	.043	.058	.076
12" Diameter	CFM	155	235	315	395	470	550	630
	-Ps	.005	.012	.021	.033	.046	.063	.083
14" Diameter	CFM	215	320	430	535	640	750	855
	-Ps	.006	.013	.023	.035	.050	.069	.090
16" Diameter	CFM	280	420	560	700	840	975	1115
	-Ps	.008	.018	.031	.048	.070	.094	.120
18" Diameter	CFM	355	530	705	885	1060	1235	1415
	-Ps	.008	.018	.031	.049	.070	.092	.125
24" x 24"	CFM	735	1100	1470	1835	2200	2570	2935
	-Ps	.008	.018	.032	.050	.070	.095	.130

4235 Perforated Supply

Neck Velocity		300	400	500	600	700	800	900	1000	1100
6" Diameter An .200	CFM	60	80	100	120	140	160	180	200	220
	Ps	.008	.011	.017	.024	.032	.042	.054	.066	.080
	NC	<20	<20	<20	<20	24	27	32	36	38
	Throw	1.0	2.0	3.0	3.0	4.0	4.0	5.0	5.0	6.0
8" Diameter An .350	CFM	105	140	175	210	245	280	310	350	385
	Ps	.008	.011	.017	.024	.034	.043	.054	.068	.083
	NC	<20	<20	<20	20	24	27	30	34	38
	Throw	2.0	3.0	4.0	4.0	5.0	6.0	7.0	8.0	8.5
10" Diameter An .540	CFM	165	220	270	325	385	430	490	550	600
	Ps	.008	.012	.017	.024	.032	.043	.056	.068	.082
	NC	<20	<20	20	24	29	33	36	39	42
	Throw	2.0	3.0	4.0	5.0	5.0	6.0	7.0	8.0	9.0
12" Diameter An .780	CFM	230	310	390	470	550	610	700	780	870
	Ps	.009	.016	.026	.037	.050	.065	.080	.100	.125
	NC	<20	<20	20	23	26	31	34	37	40
	Throw	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
14" Diameter An 1.070	CFM	315	430	535	640	750	855	960	1090	1200
	Ps	.009	.016	.026	.037	.050	.065	.083	.125	.150
	NC	<20	20	25	30	35	39	43	45	48
	Throw	3.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0

Note: The use of a balancing hood is recommended to balance the system.

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

AL440 Supply Diffuser

Neck Velocity		250	350	450	550	650	750	850	1000	1200
6" Diameter	CFM	50	70	90	110	130	145	165	195	235
	Ps	.004	.009	.014	.021	.029	.036	.046	.065	.094
	NC	<20	<20	<20	<20	<20	23	27	31	35
	Throw	3.0	3.5	4.5	6.0	7.5	8.0	9.0	11.0	12.0
8" Diameter	CFM	85	120	155	190	225	260	295	350	420
	Ps	.006	.012	.019	.029	.040	.054	.070	.098	.140
	NC	<20	<20	<20	<20	21	26	31	34	37
	Throw	4.0	5.0	6.5	8.0	9.5	11.0	13.0	15.0	17.0
10" Diameter	CFM	135	190	245	300	355	410	465	545	655
	Ps	.009	.017	.028	.043	.069	.078	.102	.140	.205
	NC	<20	<20	<20	22	29	35	38	42	46
	Throw	4.0	6.0	8.0	10.0	12.0	13.0	15.0	18.0	19.0
12" Diameter	CFM	190	245	300	355	410	465	545	655	785
	Ps	.012	.024	.040	.059	.082	.110	.142	.195	.275
	NC	<20	<20	<20	28	35	39	44	47	52
	Throw	5.0	7.5	10.0	11.5	14.0	16.0	18.0	19.0	20.0
14" Diameter	CFM	285	375	480	590	695	800	910	1070	1285
	Ps	.015	.031	.050	.075	.105	.137	.177	.245	.350
	NC	<20	<20	<20	31	36	40	45	48	53
	Throw	6.0	9.0	11.0	14.0	17.0	19.0	20.0	22.0	24.0
16" Diameter	CFM	385	510	640	785	935	1090	1255	1440	1655
	Ps	.020	.040	.065	.100	.140	.190	.250	.320	.410
	NC	<20	<20	<20	<20	<20	<20	<20	<20	<20
	Throw	8.0	11.0	14.0	17.0	20.0	23.0	25.0	26.0	27.0

Note: The use of a balancing hood is recommended to balance the system.

NC is based on 10dB room attenuation (Re: 10⁻¹² watts) ASHRAE 36-72.
Terminal Velocity of 75 FPM

AL4240 Ceiling Supply

Neck Velocity		180	220	300	350	400	450	500	580	650	700
6" Diameter Ak .430	CFM	35	45	60	70	80	90	100	115	130	140
	Ps	.002	.003	.004	.006	.008	.010	.012	.015	.020	.022
	NC	<20	<20	<20	<20	<20	<20	20	22	26	30
	Throw	3.0	3.5	4.5	5.5	6.5	7.5	8.0	9.0	11.0	11.0
8" Diameter Ak .530	CFM	65	75	105	120	140	155	175	200	225	245
	Ps	.002	.003	.006	.008	.010	.013	.016	.021	.027	.032
	NC	<20	<20	<20	<20	<20	<20	22	25	35	38
	Throw	4.0	5.0	6.0	7.0	8.5	9.5	11.0	11.0	13.0	15.0
10" Diameter Ak .620	CFM	100	120	165	190	220	245	275	315	355	380
	Ps	.003	.005	.009	.011	.015	.019	.024	.031	.040	.045
	NC	<20	<20	<20	<20	20	23	27	33	35	39
	Throw	4.0	5.5	7.0	8.0	9.5	11.0	12.0	13.0	15.0	16.0
12" Diameter Ak .700	CFM	140	175	235	275	315	355	395	455	510	550
	Ps	.005	.007	.013	.018	.023	.029	.036	.048	.061	.071
	NC	<20	<20	<20	<20	21	24	27	33	36	40
	Throw	4.5	5.5	7.0	8.0	10.0	11.0	12.0	14.0	15.0	17.0
14" Diameter Ak .750	CFM	190	235	320	375	430	480	535	620	695	750
	Ps	.007	.011	.020	.027	.036	.044	.055	.074	.094	.107
	NC	<20	<20	<20	<20	20	24	28	32	35	40
	Throw	4.5	5.5	7.0	8.5	10.0	11.0	12.0	14.0	16.0	17.0

Termination Velocity of 75 FPM

Note: The use of a balancing hood is recommended to balance the system.

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.

4205FF
Eggcrate Return Filter Grille

6" Diameter Inlet	CFM	100	150	200	225	250	275	300
	NC	<20	<20	<20	22	25	28	32
Ak .840	Static Pressure	-.040	-.091	-.162	-.205	-.253	-.306	-.364
8" Diameter Inlet	CFM	150	200	250	300	400	500	600
	NC	<20	<20	<20	<20	24	30	36
Ak .930	Static Pressure	-.029	-.051	-.080	-.115	-.205	-.320	-.460
10" Diameter Inlet	CFM	400	500	600	700	800	900	1000
	NC	<20	<20	23	27	31	35	39
Ak 1.035	Static Pressure	-.084	-.131	-.189	-.257	-.335	-.424	-.524
12" Diameter Inlet	CFM	500	600	700	800	1000	1200	1400
	NC	<20	<20	<20	22	27	32	38
Ak 1.175	Static Pressure	-.063	-.091	-.124	-.162	-.253	-.364	-.495
14" Diameter Inlet	CFM	800	900	1000	1200	1400	1600	1800
	NC	<20	<20	20	24	27	31	35
Ak 1.330	Static Pressure	-.087	-.110	-.136	-.196	-.267	-.349	-.442
16" Diameter Inlet	CFM	800	1000	1200	1400	1800	2200	2600
	NC	<20	<20	<20	21	27	33	39
Ak 1.520	Static Pressure	-.051	-.080	-.115	-.157	-.259	-.387	-.540

4260FF
Stamped-Face Return Filter Grille

6" Diameter Inlet	CFM	100	150	200	225	250	275	300
	NC	<20	<20	21	24	27	30	32
Ak .730	Static Pressure	-.057	-.127	-.226	-.287	-.354	-.428	-.509
8" Diameter Inlet	CFM	150	200	250	300	400	500	550
	NC	<20	<20	<20	<20	25	31	36
Ak .795	Static Pressure	-.040	-.072	-.112	-.161	-.287	-.448	-.542
10" Diameter Inlet	CFM	300	400	500	600	700	800	850
	NC	<20	<20	<20	24	28	33	35
Ak .880	Static Pressure	-.066	-.117	-.183	-.264	-.359	-.469	-.530
12" Diameter Inlet	CFM	400	500	600	700	800	1000	1200
	NC	<20	<20	<20	<20	22	28	34
Ak .980	Static Pressure	-.057	-.088	-.127	-.173	-.226	-.354	-.509
14" Diameter Inlet	CFM	600	700	800	1000	1200	1400	1600
	NC	<20	<20	<20	20	24	28	34
Ak 1.105	Static Pressure	-.069	-.094	-.122	-.191	-.275	-.374	-.489
16" Diameter Inlet	CFM	800	1000	1200	1600	1800	2000	2200
	NC	<20	<20	<20	25	28	31	36
Ak 1.240	Static Pressure	-.072	-.112	-.161	-.287	-.363	-.448	-.542

Notes:

1. All performance was determined from testing in accordance with ASHRAE Standard 70-1991 in an ADC-certified testing laboratory.
2. Total and static pressures are given in inch w.c.
3. NC values are given for a typical office (12 feet wide x 12 feet long x 9 feet high) as determined from the octave band sound power levels in accordance with ARI Standard 885.
4. Throw distances (measured in feet) are listed for isothermal conditions with terminal velocities of 150 FPM, 100 FPM and 50 FPM, respectively.
5. Area factor (Ak) determined with an Alnor 2220 probe.
6. Data based on units without opposed-blade dampers.
7. Return filter grille tests performed with standard 1-inch fiberglass filter (by others) in place.



PERFORMANCE DATA—LIGHT COMMERCIAL

Series AL2000 - Wall Mount, Horizontal Flow

IP/METRIC DATA: 1/2" SLOT WIDTH, CONTINUOUS SLOT

	IP Data				NC	Metric Data										
	Air Flow	Press Ps	1-Way Throw	2-Way Throw		Air Flow	Press Ps	1-Way Throw	2-Way Throw							
	CFM/ft	"WG	ft	ft		L/s/m	Pa	m	m	2	3	4	5	6	7	
1 Slot	5	0.004	1 - 2 - 7		-	8	1.1	0.2 - 0.6 - 2.2		37	24	24	12	-	-	
	13	0.030	6 - 9 - 18		26	20	7.4	1.7 - 2.8 - 5.4		48	44	42	33	26	23	
	17	0.051	8 - 12 - 20		32	26	12.7	2.5 - 3.7 - 6.2		51	49	47	39	32	28	
	21	0.078	10 - 15 - 23		36	33	19.3	3.0 - 4.5 - 6.8		53	53	51	44	37	32	
	29	0.148	14 - 19 - 26		43	45	36.9	4.2 - 5.7 - 8.0		57	60	57	51	44	38	
2 Slots	10	0.004	2 - 4 - 12	1 - 3 - 8	10	15	1.1	0.5 - 1.2 - 3.5	0.4 - 0.9 - 2.5	40	27	27	15	-	-	
	22	0.021	9 - 13 - 23	6 - 9 - 16	26	34	5.3	2.6 - 3.9 - 7.0	1.8 - 2.8 - 5.0	49	43	42	33	25	23	
	28	0.035	11 - 16 - 26	8 - 12 - 18	31	43	8.6	3.3 - 5.0 - 7.9	2.3 - 3.5 - 5.6	51	48	46	38	31	27	
	34	0.051	13 - 20 - 29	9 - 14 - 20	35	53	12.7	4.0 - 6.0 - 8.7	2.8 - 4.3 - 6.2	54	52	50	42	35	31	
	46	0.093	18 - 24 - 33	13 - 17 - 24	41	71	23.2	5.4 - 7.2 - 10.1	3.8 - 5.1 - 7.2	57	58	55	49	42	36	
3 Slots	15	0.004	3 - 6 - 15		12	23	1.1	0.8 - 1.8 - 4.6		37	21	21	-	-	-	
	31	0.019	10 - 16 - 27		27	48	4.7	3.2 - 4.8 - 8.3		50	44	42	33	25	23	
	39	0.030	13 - 20 - 31		31	60	7.4	4.0 - 6.0 - 9.3		52	48	46	38	31	28	
	47	0.043	16 - 24 - 34		35	73	10.8	4.8 - 7.2 - 10.2		54	52	50	42	35	31	
	63	0.078	21 - 28 - 39		41	98	19.3	6.5 - 8.4 - 11.9		58	58	55	49	42	36	
4 Slots	20	0.004	3 - 8 - 18	2 - 5 - 13	13	31	1.1	1.0 - 2.3 - 5.5	0.7 - 1.6 - 3.9	43	30	30	18	-	11	
	40	0.018	12 - 18 - 31	9 - 13 - 22	27	62	4.4	3.7 - 5.5 - 9.4	2.6 - 3.9 - 6.7	51	44	43	34	26	24	
	50	0.028	15 - 23 - 35	11 - 16 - 25	32	77	6.9	4.6 - 6.9 - 10.6	3.3 - 4.9 - 7.5	53	49	47	39	31	28	
	60	0.040	18 - 27 - 38	13 - 19 - 27	36	93	9.9	5.5 - 8.2 - 11.6	3.9 - 5.8 - 8.2	55	52	50	43	35	32	
	80	0.070	24 - 31 - 44	17 - 22 - 31	41	124	17.5	7.4 - 9.4 - 13.4	5.2 - 6.7 - 9.4	58	58	56	49	42	37	
5 Slots	25	0.004	4 - 9 - 21		14	39	1.1	1.2 - 2.8 - 6.3		44	31	31	19	11	12	
	49	0.017	14 - 20 - 34		28	76	4.2	4.1 - 6.2 - 10.5		51	45	43	34	26	25	
	61	0.026	17 - 25 - 38		32	94	6.5	5.1 - 7.7 - 11.7		54	49	47	39	31	29	
	73	0.038	20 - 30 - 42		36	113	9.4	6.1 - 9.0 - 12.8		56	53	51	43	36	32	
	97	0.066	27 - 34 - 48		42	150	16.5	8.1 - 10.4 - 14.7		59	59	56	49	42	37	
6 Slots	30	0.004	5 - 10 - 23	3 - 7 - 16	15	46	1.1	1.4 - 3.2 - 7.0	1.0 - 2.2 - 5.0	45	32	32	20	12	13	
	58	0.016	15 - 22 - 37	10 - 16 - 26	28	90	4.1	4.5 - 6.8 - 11.4	3.2 - 4.8 - 8.0	52	45	44	35	27	25	
	72	0.025	18 - 28 - 42	13 - 20 - 29	33	111	6.3	5.6 - 8.4 - 12.7	4.0 - 5.9 - 9.0	54	50	48	39	32	29	
	86	0.036	22 - 32 - 46	16 - 23 - 32	37	133	9.0	6.7 - 9.8 - 13.9	4.7 - 6.9 - 9.8	56	53	51	43	36	32	
	114	0.064	29 - 37 - 52	21 - 26 - 37	42	177	15.8	8.9 - 11.3 - 16.0	6.3 - 8.0 - 11.3	60	59	57	50	42	38	
7 Slots	35	0.004	5 - 12 - 25		16	54	1.1	1.6 - 3.5 - 7.6		44	29	29	17	-	11	
	65	0.015	16 - 23 - 40		28	101	3.8	4.7 - 7.1 - 12.0		52	45	44	34	27	25	
	80	0.023	19 - 29 - 44		33	124	5.7	5.8 - 8.7 - 13.4		55	49	48	39	31	29	
	95	0.032	23 - 34 - 48		36	147	8.1	6.9 - 10.3 - 14.6		57	53	51	43	35	32	
	125	0.056	30 - 39 - 55		42	194	14.0	9.1 - 11.8 - 16.7		60	58	56	49	42	37	
8 Slots	40	0.004	6 - 13 - 27	4 - 9 - 19	16	62	1.1	1.7 - 3.9 - 8.2	1.2 - 2.7 - 5.8	46	33	33	21	13	14	
	74	0.015	17 - 25 - 42	12 - 18 - 30	29	115	3.8	5.1 - 7.6 - 12.9	3.6 - 5.4 - 9.1	53	46	44	35	27	26	
	91	0.023	21 - 31 - 47	15 - 22 - 33	33	141	5.7	6.3 - 9.4 - 14.3	4.4 - 6.6 - 10.1	55	50	48	39	32	29	
	108	0.032	24 - 36 - 51	17 - 26 - 36	37	167	8.0	7.4 - 11.0 - 15.5	5.2 - 7.8 - 11.0	57	53	51	43	36	33	
	142	0.056	32 - 41 - 59	23 - 29 - 41	42	220	13.8	9.8 - 12.6 - 17.8	6.9 - 8.9 - 12.6	60	59	57	49	42	38	

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. Odd numbered slots for 2-Way data have been intentionally left blank. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8

Series AL2000 - Ceiling Mount, Vertical Flow with Pattern Controller

IP/METRIC DATA: 1/2" SLOT WIDTH, CONTINUOUS SLOT

	IP Data				Metric Data				Octave Band, dB						
	Air Flow	Press Ps	Vertical Throw	NC	Air Flow	Press Ps	Vertical Throw								
	CFM/ft	"WG	ft		L/s/m	Pa	m		2	3	4	5	6	7	
1 Slot	5	0.003	1 - 2 - 5	-	8	0.6	0.3 - 0.6 - 1.5	-	-	-	-	-	-	-	-
	35	0.127	12 - 14 - 20	15	54	31.5	3.5 - 4.3 - 6.1	43	39	30	16	11	-	-	-
	50	0.259	14 - 17 - 24	24	78	64.4	4.2 - 5.2 - 7.3	50	46	39	22	17	-	-	-
	65	0.437	16 - 19 - 27	30	101	108.8	4.8 - 5.9 - 8.3	54	52	45	27	21	14	-	-
	95	0.933	19 - 23 - 33	40	147	232.4	5.8 - 7.1 - 10.0	61	60	54	34	27	20	-	-
2 Slots	10	0.003	1 - 3 - 7	-	16	0.6	0.4 - 1.0 - 2.3	-	-	-	-	-	-	-	-
	60	0.093	15 - 19 - 26	14	93	23.2	4.5 - 5.6 - 8.0	43	38	30	16	12	-	-	-
	85	0.187	18 - 22 - 31	23	132	46.5	5.5 - 6.7 - 9.5	50	46	38	23	17	-	-	-
	110	0.313	21 - 25 - 36	30	171	77.9	6.2 - 7.6 - 10.8	54	51	44	27	21	14	-	-
	160	0.662	25 - 30 - 43	39	248	164.8	7.5 - 9.2 - 13.0	61	59	53	34	27	20	-	-
3 Slots	15	0.003	2 - 4 - 9	-	23	0.6	0.5 - 1.2 - 2.8	-	-	-	-	-	-	-	-
	85	0.083	17 - 22 - 31	15	132	20.7	5.3 - 6.7 - 9.5	44	39	30	17	13	-	-	-
	120	0.165	21 - 26 - 37	24	186	41.2	6.5 - 8.0 - 11.3	50	46	38	23	18	11	-	-
	155	0.276	24 - 30 - 42	30	241	68.7	7.4 - 9.1 - 12.8	55	52	44	28	22	15	-	-
	225	0.582	29 - 36 - 51	39	349	144.8	8.9 - 10.9 - 15.5	62	59	53	34	28	21	-	-
4 Slots	20	0.003	2 - 5 - 11	-	31	0.6	0.6 - 1.4 - 3.2	13	-	-	-	-	-	-	-
	110	0.078	20 - 25 - 36	16	171	19.5	6.0 - 7.6 - 10.8	45	39	31	18	13	-	-	-
	155	0.155	24 - 30 - 42	24	241	38.7	7.4 - 9.1 - 12.8	51	47	39	24	19	12	-	-
	200	0.259	28 - 34 - 48	31	310	64.4	8.4 - 10.3 - 14.6	56	52	45	28	23	16	-	-
	290	0.544	33 - 41 - 58	40	450	135.3	10.1 - 12.4 - 17.6	62	60	53	35	28	21	-	-
5 Slots	25	0.003	2 - 5 - 12	-	39	0.6	0.7 - 1.6 - 3.6	14	-	-	-	-	-	-	-
	125	0.065	20 - 27 - 38	15	194	16.1	6.1 - 8.1 - 11.5	44	38	30	17	13	-	-	-
	175	0.127	26 - 32 - 45	23	272	31.5	7.9 - 9.6 - 13.6	50	46	37	23	18	11	-	-
	225	0.209	29 - 36 - 51	29	349	52.1	8.9 - 10.9 - 15.5	55	51	43	28	22	15	-	-
	325	0.437	35 - 43 - 61	39	505	108.8	10.7 - 13.1 - 18.6	61	59	52	34	28	21	-	-
6 Slots	30	0.003	3 - 6 - 13	-	47	0.6	0.8 - 1.8 - 4.0	15	-	-	-	-	-	-	-
	150	0.065	22 - 29 - 42	16	233	16.1	6.7 - 8.9 - 12.6	45	39	30	18	14	-	-	-
	210	0.127	28 - 35 - 49	24	326	31.5	8.6 - 10.6 - 14.9	51	46	38	24	19	12	-	-
	270	0.209	32 - 39 - 56	30	419	52.1	9.8 - 12.0 - 16.9	55	52	44	28	23	16	-	-
	390	0.437	39 - 47 - 67	39	605	108.8	11.8 - 14.4 - 20.4	62	59	53	35	29	22	-	-
7 Slots	35	0.003	3 - 6 - 14	-	54	0.6	0.9 - 1.9 - 4.3	13	-	-	-	-	-	-	-
	185	0.072	25 - 33 - 46	18	287	18.0	7.6 - 9.9 - 14.0	46	41	32	19	15	-	-	-
	260	0.143	32 - 39 - 55	26	404	35.5	9.6 - 11.8 - 16.6	53	48	40	26	21	14	-	-
	335	0.237	36 - 44 - 62	33	520	59.0	10.9 - 13.3 - 18.9	57	54	46	30	24	17	-	-
	485	0.496	43 - 53 - 75	42	753	123.6	13.1 - 16.0 - 22.7	64	61	55	37	30	23	-	-
8 Slots	40	0.003	3 - 7 - 15	-	62	0.6	0.9 - 2.1 - 4.6	16	-	-	-	-	-	-	-
	200	0.065	25 - 34 - 48	17	310	16.1	7.7 - 10.3 - 14.6	46	40	32	19	15	-	-	-
	280	0.127	33 - 40 - 57	25	435	31.5	10.0 - 12.2 - 17.2	52	48	40	25	20	13	-	-
	360	0.209	37 - 45 - 64	32	559	52.1	11.3 - 13.8 - 19.6	57	53	45	30	24	17	-	-
	520	0.437	45 - 55 - 77	41	807	108.8	13.6 - 16.6 - 23.5	63	61	54	36	30	23	-	-

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re^{10⁻¹²} Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8



Series AL2000 - Ceiling Mount, Vertical Flow with No Pattern Controller

IP/METRIC DATA: 1/2" SLOT WIDTH, CONTINUOUS SLOT

	IP Data				Metric Data				Octave Band, dB						
	Air Flow	Press Ps	Vertical Throw	NC	Air Flow	Press Ps	Vertical Throw								
	CFM/ft	"WG	ft		L/s/m	Pa	m		2	3	4	5	6	7	
1 Slot	5	0.001	0 - 1 - 3	-	8	0.3	0.1 - 0.3 - 1.0		-	-	-	-	-	-	
	55	0.162	11 - 14 - 20	18	85	40.3	3.5 - 4.2 - 6.0		48	38	34	20	-	-	
	80	0.342	14 - 17 - 24	26	124	85.2	4.2 - 5.1 - 7.2		55	45	41	26	15	-	
	105	0.590	16 - 19 - 27	32	163	146.8	4.8 - 5.8 - 8.3		60	49	46	30	19	11	
	155	1.285	19 - 23 - 33	41	240	320.0	5.8 - 7.1 - 10.0		67	56	53	36	25	17	
2 Slots	10	0.001	1 - 2 - 5	-	15	0.3	0.2 - 0.5 - 1.6		-	-	-	-	-	-	
	90	0.108	15 - 18 - 25	17	139	27.0	4.4 - 5.4 - 7.7		48	38	34	20	-	-	
	130	0.226	17 - 21 - 30	25	201	56.3	5.3 - 6.5 - 9.2		54	44	40	26	15	-	
	170	0.386	20 - 24 - 35	31	263	96.2	6.1 - 7.4 - 10.5		59	49	45	30	19	12	
	250	0.836	24 - 30 - 42	40	387	208.1	7.4 - 9.0 - 12.8		66	55	52	36	24	17	
3 Slots	15	0.001	1 - 2 - 7	-	23	0.3	0.3 - 0.7 - 2.1		-	-	-	-	-	-	
	115	0.079	16 - 20 - 28	16	178	19.6	5.0 - 6.1 - 8.7		47	37	33	19	-	-	
	165	0.162	20 - 24 - 34	24	255	40.3	6.0 - 7.3 - 10.4		53	43	39	25	14	-	
	215	0.275	22 - 28 - 39	30	333	68.4	6.8 - 8.4 - 11.8		58	48	44	29	18	11	
	315	0.590	27 - 33 - 47	39	488	146.8	8.3 - 10.1 - 14.3		65	54	51	35	24	16	
4 Slots	20	0.001	1 - 3 - 8	-	31	0.3	0.4 - 0.8 - 2.4		11	-	-	-	-	-	
	150	0.075	19 - 23 - 33	17	232	18.7	5.7 - 7.0 - 9.9		47	38	33	20	-	-	
	215	0.155	22 - 28 - 39	25	333	38.5	6.8 - 8.4 - 11.8		54	44	40	26	15	-	
	280	0.262	26 - 31 - 44	31	434	65.3	7.8 - 9.5 - 13.5		59	49	45	30	19	12	
	410	0.562	31 - 38 - 54	40	635	139.9	9.4 - 11.6 - 16.3		66	55	52	36	25	17	
5 Slots	25	0.001	1 - 3 - 9	-	39	0.3	0.4 - 1.0 - 2.7		12	-	-	-	-	-	
	185	0.073	21 - 26 - 36	18	286	18.2	6.3 - 7.8 - 11.0		48	39	34	21	11	-	
	265	0.150	25 - 31 - 43	26	410	37.4	7.6 - 9.3 - 13.1		55	45	41	26	16	-	
	345	0.255	28 - 35 - 49	32	534	63.4	8.7 - 10.6 - 15.0		59	49	45	31	20	13	
	505	0.546	34 - 42 - 60	40	782	135.9	10.5 - 12.8 - 18.1		66	56	52	36	25	18	
6 Slots	30	0.001	2 - 4 - 10	-	46	0.3	0.5 - 1.1 - 3.0		13	-	-	-	-	-	
	210	0.066	22 - 27 - 38	18	325	16.3	6.8 - 8.3 - 11.7		48	39	34	21	11	-	
	300	0.134	27 - 33 - 46	25	465	33.3	8.1 - 9.9 - 14.0		54	45	40	26	16	-	
	390	0.226	30 - 37 - 52	31	604	56.3	9.2 - 11.3 - 15.9		59	49	45	30	20	13	
	570	0.483	37 - 45 - 63	40	883	120.2	11.1 - 13.6 - 19.3		66	55	52	36	25	18	
7 Slots	35	0.001	2 - 4 - 11	-	54	0.3	0.5 - 1.2 - 3.3		11	-	-	-	-	-	
	235	0.060	23 - 29 - 41	18	364	15.0	7.1 - 8.7 - 12.4		48	39	34	21	11	-	
	335	0.123	28 - 34 - 49	25	519	30.5	8.5 - 10.4 - 14.8		54	45	40	26	16	-	
	435	0.207	32 - 39 - 55	31	674	51.4	9.7 - 11.9 - 16.8		59	49	45	30	20	13	
	635	0.440	39 - 47 - 67	40	983	109.6	11.7 - 14.4 - 20.3		66	55	52	36	25	18	
8 Slots	40	0.001	2 - 4 - 12	-	62	0.3	0.6 - 1.3 - 3.5		14	-	-	-	-	-	
	260	0.057	25 - 30 - 43	18	403	14.1	7.5 - 9.2 - 13.0		48	39	34	21	11	-	
	370	0.114	29 - 36 - 51	25	573	28.5	9.0 - 11.0 - 15.5		54	45	40	26	16	-	
	480	0.193	34 - 41 - 58	31	743	47.9	10.2 - 12.5 - 17.7		59	49	45	30	20	13	
	700	0.410	41 - 50 - 70	40	1084	102.0	12.3 - 15.1 - 21.3		66	55	52	36	25	18	

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8

Series AL2000 - Wall Mount, Horizontal Flow

IP/METRIC DATA: 3/4" SLOT WIDTH, CONTINUOUS SLOT

	IP Data				NC	Metric Data										
	Air Flow	Press Ps	1-Way Throw	2-Way Throw		Air Flow	Press Ps	1-Way Throw	2-Way Throw							
	CFM/ft	"WG	ft	ft		L/s/m	Pa	m	m	2	3	4	5	6	7	
1 Slot	5	0.003	1 - 1 - 6		-	8	0.8	0.2 - 0.4 - 1.7		26	12	-	-	-	-	
	15	0.030	6 - 10 - 19		14	23	7.4	1.7 - 3.0 - 5.8		40	34	31	19	-	-	
	20	0.053	9 - 13 - 22		21	31	13.2	2.6 - 4.0 - 6.7		43	40	37	28	19	14	
	25	0.083	11 - 16 - 25		27	39	20.7	3.3 - 4.9 - 7.5		46	45	43	34	26	19	
	35	0.163	15 - 21 - 29		35	54	40.5	4.6 - 6.2 - 8.8		50	52	50	44	36	27	
2 Slots	10	0.003	1 - 3 - 10	1 - 2 - 7	-	16	0.8	0.4 - 0.9 - 3.2	0.3 - 0.6 - 2.2	29	15	-	-	-	-	
	30	0.030	10 - 16 - 27	7 - 11 - 19	17	47	7.4	3.2 - 4.7 - 8.2	2.2 - 3.4 - 5.8	43	37	34	22	13	11	
	40	0.053	14 - 21 - 31	10 - 15 - 22	25	62	13.2	4.2 - 6.3 - 9.4	3.0 - 4.5 - 6.7	46	43	40	31	22	17	
	50	0.083	17 - 25 - 35	12 - 17 - 25	30	78	20.7	5.3 - 7.5 - 10.6	3.7 - 5.3 - 7.5	49	48	46	37	29	22	
	70	0.163	24 - 29 - 41	17 - 21 - 29	39	109	40.5	7.2 - 8.8 - 12.5	5.1 - 6.2 - 8.8	53	55	53	47	39	30	
3 Slots	15	0.003	2 - 4 - 13		-	23	0.8	0.6 - 1.2 - 4.1		26	-	-	-	-	-	
	45	0.030	13 - 20 - 33		19	70	7.4	4.1 - 6.1 - 10.0		45	39	36	24	15	12	
	60	0.053	18 - 27 - 38		27	93	13.2	5.4 - 8.1 - 11.6		48	45	42	33	24	19	
	75	0.083	22 - 30 - 43		32	116	20.7	6.8 - 9.1 - 12.9		51	50	47	39	31	24	
	105	0.163	29 - 36 - 50		41	163	40.5	8.8 - 10.8 - 15.3		55	56	55	49	41	32	
4 Slots	20	0.003	2 - 5 - 16	2 - 4 - 11	-	31	0.8	0.7 - 1.6 - 4.8	0.5 - 1.1 - 3.4	32	18	12	-	-	-	
	60	0.030	16 - 24 - 38	11 - 17 - 27	21	93	7.4	4.8 - 7.2 - 11.6	3.4 - 5.1 - 8.2	46	40	37	25	17	14	
	80	0.053	21 - 31 - 44	15 - 22 - 31	28	124	13.2	6.4 - 9.4 - 13.4	4.6 - 6.7 - 9.4	49	46	43	34	25	20	
	100	0.083	26 - 35 - 49	19 - 25 - 35	34	155	20.7	8.0 - 10.6 - 14.9	5.7 - 7.5 - 10.6	52	51	49	40	32	25	
	140	0.163	34 - 41 - 58	24 - 29 - 41	42	217	40.5	10.2 - 12.5 - 17.7	7.2 - 8.8 - 12.5	56	58	56	50	42	33	
5 Slots	25	0.003	3 - 6 - 18		-	39	0.8	0.8 - 1.8 - 5.5		33	19	13	-	-	-	
	75	0.030	18 - 27 - 43		22	116	7.4	5.5 - 8.2 - 12.9		47	41	38	26	17	15	
	100	0.053	24 - 35 - 49		29	155	13.2	7.3 - 10.6 - 14.9		50	47	44	35	26	21	
	125	0.083	30 - 39 - 55		35	194	20.7	9.1 - 11.8 - 16.7		53	52	50	41	33	26	
	175	0.163	38 - 46 - 65		43	272	40.5	11.4 - 14.0 - 19.8		57	59	57	51	43	34	
6 Slots	30	0.003	3 - 7 - 20	2 - 5 - 14	-	47	0.8	0.9 - 2.1 - 6.1	0.7 - 1.5 - 4.3	34	19	13	-	-	-	
	90	0.030	20 - 30 - 47	14 - 21 - 33	23	140	7.4	6.1 - 9.1 - 14.2	4.3 - 6.4 - 10.0	48	42	39	27	18	15	
	120	0.053	27 - 38 - 54	19 - 27 - 38	30	186	13.2	8.1 - 11.6 - 16.4	5.7 - 8.2 - 11.6	51	48	45	36	27	22	
	150	0.083	33 - 43 - 60	24 - 30 - 43	35	233	20.7	10.1 - 12.9 - 18.3	7.2 - 9.1 - 12.9	54	53	50	42	34	27	
	210	0.163	41 - 50 - 71	29 - 36 - 50	44	326	40.5	12.5 - 15.3 - 21.6	8.8 - 10.8 - 15.3	58	59	58	52	44	35	
7 Slots	35	0.003	3 - 8 - 22		-	54	0.8	1.0 - 2.3 - 6.6		33	17	-	-	-	-	
	101	0.028	21 - 31 - 49		22	157	6.9	6.4 - 9.6 - 15.0		48	42	38	27	18	15	
	134	0.049	28 - 40 - 57		30	208	12.1	8.5 - 12.2 - 17.3		51	48	45	35	26	22	
	167	0.076	35 - 45 - 64		35	259	18.8	10.5 - 13.7 - 19.3		54	52	50	41	33	27	
	233	0.147	43 - 53 - 75		43	362	36.6	13.2 - 16.1 - 22.8		58	59	58	51	43	34	
8 Slots	40	0.003	4 - 8 - 23	3 - 6 - 17	-	62	0.8	1.1 - 2.5 - 7.1	0.8 - 1.8 - 5.0	35	21	15	-	-	-	
	112	0.026	22 - 33 - 52	15 - 23 - 37	22	174	6.5	6.6 - 10.0 - 15.8	4.7 - 7.1 - 11.2	48	42	38	26	17	15	
	148	0.045	29 - 42 - 60	20 - 30 - 42	29	230	11.3	8.8 - 12.9 - 18.2	6.2 - 9.1 - 12.8	51	48	45	35	26	21	
	184	0.070	36 - 47 - 67	25 - 33 - 47	35	286	17.5	10.9 - 14.3 - 20.3	7.7 - 10.1 - 14.3	54	52	50	41	32	26	
	256	0.136	45 - 56 - 79	32 - 39 - 56	43	397	33.8	13.8 - 16.9 - 23.9	9.8 - 11.9 - 16.9	58	59	57	50	42	34	

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. Odd numbered slots for 2-Way data have been intentionally left blank. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8



Series AL2000 - Ceiling Mount, Vertical Flow with Pattern Controller

IP/METRIC DATA: 3/4" SLOT WIDTH, CONTINUOUS SLOT

	IP Data			NC	Metric Data			Octave Band, dB					
	Air Flow	Press Ps	Vertical Throw		Air Flow	Press Ps	Vertical Throw						
	CFM/ft	"WG	ft		L/s/m	Pa	m	2	3	4	5	6	7
1 Slot	20	0.032	6 - 10 - 15	-	31	8.1	1.9 - 2.9 - 4.6	28	23	18	12	-	-
	70	0.397	16 - 20 - 28	22	109	99.0	5.0 - 6.1 - 8.6	50	45	37	28	21	14
	95	0.732	19 - 23 - 33	28	147	182.3	5.8 - 7.1 - 10.0	55	50	42	32	24	18
	120	1.168	21 - 26 - 37	33	186	290.8	6.5 - 8.0 - 11.3	59	54	46	35	27	20
	170	2.344	26 - 31 - 44	40	264	583.7	7.8 - 9.5 - 13.4	65	60	51	40	31	24
2 Slots	30	0.018	7 - 10 - 19	-	47	4.5	2.1 - 3.1 - 5.6	26	21	16	11	-	-
	110	0.245	21 - 25 - 36	21	171	61.1	6.2 - 7.6 - 10.8	48	43	37	28	21	14
	150	0.456	24 - 29 - 42	27	233	113.6	7.3 - 8.9 - 12.6	54	49	42	32	24	18
	190	0.732	27 - 33 - 47	32	295	182.3	8.2 - 10.0 - 14.2	58	53	45	35	27	21
	270	1.478	32 - 39 - 56	39	419	368.1	9.8 - 12.0 - 16.9	64	59	51	40	31	25
3 Slots	40	0.014	8 - 11 - 21	-	62	3.6	2.3 - 3.5 - 6.5	21	15	11	-	-	-
	160	0.231	25 - 30 - 43	22	248	57.5	7.5 - 9.2 - 13.0	50	45	38	29	22	16
	220	0.436	29 - 36 - 50	28	342	108.6	8.8 - 10.8 - 15.3	55	50	43	34	26	19
	280	0.707	33 - 40 - 57	33	435	175.9	10.0 - 12.2 - 17.2	59	54	47	37	29	22
	400	1.442	39 - 48 - 68	41	621	359.1	11.9 - 14.6 - 20.6	65	61	52	42	33	26
4 Slots	50	0.013	8 - 12 - 24	-	78	3.2	2.5 - 3.8 - 7.3	26	21	16	11	-	-
	200	0.203	28 - 34 - 48	22	310	50.5	8.4 - 10.3 - 14.6	50	45	38	30	23	16
	275	0.383	32 - 40 - 56	29	427	95.5	9.9 - 12.1 - 17.1	55	50	43	34	26	20
	350	0.621	37 - 45 - 63	34	543	154.6	11.1 - 13.6 - 19.3	59	54	47	37	29	23
	500	1.267	44 - 54 - 76	41	776	315.6	13.3 - 16.3 - 23.0	66	61	53	42	33	27
5 Slots	60	0.018	9 - 13 - 26	-	93	4.5	2.7 - 4.0 - 8.0	26	21	17	12	-	-
	240	0.292	30 - 37 - 53	23	373	72.7	9.2 - 11.3 - 16.0	50	45	38	30	23	17
	330	0.552	36 - 44 - 62	29	512	137.5	10.8 - 13.2 - 18.7	56	51	44	34	27	20
	420	0.894	40 - 49 - 69	34	652	222.7	12.2 - 14.9 - 21.1	60	55	47	38	30	23
	600	1.825	48 - 59 - 83	41	931	454.4	14.6 - 17.9 - 25.2	66	61	53	42	34	27
6 Slots	70	0.011	9 - 14 - 28	-	109	2.8	2.9 - 4.3 - 8.6	26	21	17	12	-	-
	270	0.164	32 - 39 - 56	22	419	40.9	9.8 - 12.0 - 16.9	50	45	38	30	23	17
	370	0.308	38 - 46 - 65	28	574	76.8	11.4 - 14.0 - 19.8	55	50	43	34	27	20
	470	0.498	42 - 52 - 74	33	730	123.9	12.9 - 15.8 - 22.3	59	54	47	38	30	23
	670	1.011	51 - 62 - 88	41	1040	251.9	15.4 - 18.9 - 26.7	65	60	53	42	34	27
7 Slots	80	0.011	10 - 15 - 30	-	124	2.6	3.0 - 4.6 - 9.1	24	19	15	11	-	-
	310	0.159	34 - 42 - 60	23	481	39.6	10.5 - 12.8 - 18.1	50	45	39	31	24	17
	425	0.299	40 - 49 - 70	29	660	74.5	12.3 - 15.0 - 21.2	56	51	44	35	27	21
	540	0.483	45 - 56 - 79	34	838	120.2	13.8 - 16.9 - 24.0	60	55	47	38	30	24
	770	0.982	54 - 67 - 94	41	1195	244.4	16.5 - 20.2 - 28.6	66	61	53	43	34	28
8 Slots	90	0.010	11 - 16 - 32	-	140	2.6	3.2 - 4.8 - 9.6	27	22	18	13	-	-
	330	0.138	36 - 44 - 62	22	512	34.4	10.8 - 13.2 - 18.7	49	44	38	30	24	17
	450	0.257	42 - 51 - 72	28	699	63.9	12.6 - 15.5 - 21.9	55	50	43	34	27	21
	570	0.412	47 - 57 - 81	33	885	102.5	14.2 - 17.4 - 24.6	59	54	47	38	30	23
	810	0.832	56 - 68 - 96	40	1257	207.1	16.9 - 20.7 - 29.3	65	60	52	42	34	27

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8

Series AL2000 - Ceiling Mount, Vertical Flow with No Pattern Controller

IP/METRIC DATA: 3/4" SLOT WIDTH, CONTINUOUS SLOT

	IP Data			NC	Metric Data			Octave Band, dB						
	Air Flow	Press Ps	Vertical Throw		Air Flow	Press Ps	Vertical Throw							
	CFM/ft	"WG	ft		L/s/m	Pa	m							
								2	3	4	5	6	7	
1 Slot	10	0.002	1 - 1 - 5	-	16	0.5	0.2 - 0.4 - 1.5	-	-	-	-	-	-	-
	70	0.100	12 - 16 - 22	16	109	25.0	3.6 - 4.8 - 6.8	46	37	32	25	17	-	-
	100	0.205	15 - 19 - 27	23	155	51.1	4.7 - 5.7 - 8.1	53	44	38	30	20	11	-
	130	0.347	17 - 21 - 30	30	202	86.3	5.3 - 6.5 - 9.2	58	49	42	33	23	14	-
	190	0.740	21 - 26 - 37	39	295	184.3	6.4 - 7.9 - 11.1	65	56	49	38	27	18	-
2 Slots	20	0.002	1 - 3 - 8	-	31	0.5	0.4 - 1.0 - 2.5	13	-	-	-	-	-	-
	130	0.087	17 - 21 - 30	18	202	21.6	5.3 - 6.5 - 9.2	48	39	34	27	19	-	-
	185	0.175	21 - 26 - 36	25	287	43.7	6.3 - 7.8 - 11.0	55	46	40	32	23	13	-
	240	0.295	24 - 29 - 41	32	373	73.5	7.2 - 8.8 - 12.5	59	50	44	35	25	16	-
	350	0.628	29 - 35 - 50	41	543	156.4	8.7 - 10.7 - 15.1	66	57	50	40	29	20	-
3 Slots	30	0.002	2 - 5 - 11	-	47	0.5	0.6 - 1.4 - 3.3	-	-	-	-	-	-	-
	180	0.074	21 - 25 - 36	18	279	18.4	6.3 - 7.7 - 10.8	48	39	35	28	20	-	-
	255	0.148	24 - 30 - 42	26	396	36.9	7.4 - 9.1 - 12.9	55	46	40	32	23	14	-
	330	0.248	28 - 34 - 48	32	512	61.8	8.5 - 10.4 - 14.7	60	50	44	36	26	17	-
	480	0.525	34 - 41 - 58	41	745	130.7	10.2 - 12.5 - 17.7	66	57	51	41	30	21	-
4 Slots	40	0.002	3 - 6 - 13	-	62	0.5	0.8 - 1.8 - 3.9	16	-	-	-	-	-	-
	210	0.057	22 - 27 - 38	17	326	14.1	6.8 - 8.3 - 11.7	47	38	34	27	20	-	-
	295	0.112	26 - 32 - 46	24	458	27.8	8.0 - 9.8 - 13.9	53	44	39	32	23	14	-
	380	0.185	30 - 37 - 52	30	590	46.1	9.1 - 11.1 - 15.7	58	49	43	35	26	17	-
	550	0.388	36 - 44 - 62	39	854	96.5	10.9 - 13.4 - 18.9	65	56	49	40	30	21	-
5 Slots	50	0.002	3 - 7 - 15	-	78	0.5	0.9 - 2.1 - 4.5	17	-	-	-	-	-	-
	270	0.060	25 - 31 - 44	19	419	14.9	7.7 - 9.4 - 13.3	49	40	35	28	21	11	-
	380	0.118	30 - 37 - 52	26	590	29.5	9.1 - 11.1 - 15.7	55	46	41	33	24	15	-
	490	0.197	34 - 42 - 59	32	761	49.0	10.3 - 12.6 - 17.9	60	51	45	36	27	18	-
	710	0.413	41 - 50 - 71	41	1102	103.0	12.4 - 15.2 - 21.5	66	57	51	41	31	22	-
6 Slots	60	0.002	4 - 8 - 16	-	93	0.5	1.1 - 2.4 - 5.0	18	-	-	-	-	-	-
	300	0.051	27 - 33 - 46	18	466	12.8	8.1 - 9.9 - 14.0	48	39	35	28	21	11	-
	420	0.100	31 - 38 - 54	25	652	25.0	9.5 - 11.7 - 16.5	54	45	40	33	24	15	-
	540	0.166	36 - 44 - 62	31	838	41.4	10.8 - 13.3 - 18.8	59	50	44	36	27	18	-
	780	0.347	43 - 52 - 74	40	1211	86.3	13.0 - 15.9 - 22.5	66	56	50	41	31	22	-
7 Slots	70	0.002	4 - 9 - 18	-	109	0.5	1.2 - 2.7 - 5.4	16	-	-	-	-	-	-
	350	0.051	29 - 35 - 50	19	543	12.8	8.7 - 10.7 - 15.1	49	40	35	29	21	12	-
	490	0.100	34 - 42 - 59	26	761	25.0	10.3 - 12.6 - 17.9	55	46	41	33	25	16	-
	630	0.166	38 - 47 - 67	32	978	41.4	11.7 - 14.3 - 20.3	59	50	45	37	28	18	-
	910	0.347	46 - 57 - 80	40	1413	86.3	14.1 - 17.2 - 24.3	66	57	51	41	32	22	-
8 Slots	80	0.002	4 - 10 - 19	-	124	0.5	1.3 - 2.9 - 5.9	19	11	-	-	-	-	-
	380	0.046	30 - 37 - 52	19	590	11.5	9.1 - 11.1 - 15.7	48	39	35	29	21	12	-
	530	0.090	35 - 43 - 61	25	823	22.4	10.7 - 13.1 - 18.6	54	46	41	33	25	16	-
	680	0.148	40 - 49 - 69	31	1056	36.9	12.1 - 14.9 - 21.0	59	50	45	36	28	18	-
	980	0.308	48 - 59 - 83	40	1521	76.6	14.6 - 17.9 - 25.3	66	57	50	41	32	22	-

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, $re 10^{-12}$ Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8



PERFORMANCE DATA—LIGHT COMMERCIAL

Series AL2000 - Wall Mount, Horizontal Flow

IP/METRIC DATA: 1" SLOT WIDTH, CONTINUOUS SLOT

	IP Data					Metric Data					Octave Band, dB					
	Air Flow	Press Ps	1-Way Throw	2-Way Throw	NC	Air Flow	Press Ps	1-Way Throw	2-Way Throw							
	CFM/ft	"WG	ft	ft		L/s/m	Pa	m	m		2	3	4	5	6	7
1 Slot	5	0.003	0 - 1 - 4		-	8	0.7	0.1 - 0.3 - 1.3			17	-	-	-	-	-
	25	0.066	10 - 15 - 25		17	39	16.3	3.0 - 4.6 - 7.5			40	36	33	24	14	-
	35	0.129	14 - 21 - 29		25	54	32.0	4.3 - 6.2 - 8.8			44	42	41	33	24	16
	45	0.213	18 - 23 - 33		31	70	52.9	5.5 - 7.1 - 10.0			48	47	46	39	32	23
	65	0.444	23 - 28 - 40		40	101	110.4	7.0 - 8.5 - 12.0			53	55	55	49	43	33
2 Slots	10	0.003	1 - 2 - 9	1 - 2 - 6	-	16	0.7	0.3 - 0.7 - 2.6	0.2 - 0.5 - 1.9		20	-	-	-	-	-
	44	0.051	14 - 21 - 33	10 - 15 - 23	17	68	12.7	4.2 - 6.3 - 9.9	3.0 - 4.5 - 7.0		41	36	33	23	13	-
	61	0.098	19 - 27 - 38	14 - 19 - 27	25	95	24.3	5.8 - 8.3 - 11.7	4.1 - 5.8 - 8.2		46	43	41	32	23	16
	78	0.160	25 - 31 - 43	17 - 22 - 31	31	121	39.8	7.5 - 9.3 - 13.2	5.3 - 6.6 - 9.3		49	47	46	38	31	22
	112	0.329	30 - 37 - 52	21 - 26 - 37	40	174	82.0	9.1 - 11.2 - 15.8	6.5 - 7.9 - 11.2		54	55	54	48	42	32
3 Slots	15	0.003	1 - 3 - 12		-	23	0.7	0.4 - 0.9 - 3.6			17	-	-	-	-	-
	65	0.049	17 - 26 - 40		18	101	12.3	5.3 - 7.9 - 12.0			43	37	34	24	15	-
	90	0.094	24 - 33 - 47		26	140	23.5	7.3 - 10.0 - 14.2			47	44	42	33	24	17
	115	0.154	30 - 37 - 53		32	179	38.4	9.2 - 11.3 - 16.0			50	49	48	40	32	24
	165	0.318	36 - 45 - 63		41	256	79.1	11.1 - 13.6 - 19.2			55	56	56	49	43	33
4 Slots	20	0.003	2 - 4 - 14	1 - 3 - 10	-	31	0.7	0.5 - 1.1 - 4.3	0.4 - 0.8 - 3.1		23	-	-	-	-	-
	80	0.042	19 - 28 - 44	13 - 20 - 31	18	124	10.5	5.8 - 8.7 - 13.4	4.1 - 6.1 - 9.4		43	37	34	24	13	-
	110	0.079	26 - 36 - 52	18 - 26 - 36	25	171	19.8	7.9 - 11.1 - 15.7	5.6 - 7.8 - 11.1		47	43	41	32	23	16
	140	0.129	33 - 41 - 58	23 - 29 - 41	31	217	32.0	10.1 - 12.5 - 17.7	7.1 - 8.8 - 12.5		50	48	47	39	30	23
	200	0.262	40 - 49 - 69	28 - 35 - 49	40	310	65.3	12.2 - 14.9 - 21.1	8.6 - 10.6 - 14.9		55	55	55	48	41	32
5 Slots	25	0.003	2 - 4 - 16		-	39	0.7	0.6 - 1.3 - 4.9			24	-	-	-	-	-
	95	0.038	20 - 31 - 48		17	147	9.4	6.2 - 9.3 - 14.6			43	37	34	23	13	-
	130	0.071	28 - 40 - 56		25	202	17.7	8.5 - 12.0 - 17.0			47	43	41	32	22	16
	165	0.114	36 - 45 - 63		31	256	28.5	10.8 - 13.6 - 19.2			51	48	46	38	30	22
	235	0.232	43 - 53 - 75		40	365	57.7	13.2 - 16.2 - 22.9			56	55	54	47	40	31
6 Slots	30	0.003	2 - 5 - 18	2 - 3 - 13	-	47	0.7	0.7 - 1.5 - 5.4	0.5 - 1.0 - 3.8		25	11	-	-	-	-
	110	0.035	22 - 33 - 52	15 - 23 - 36	17	171	8.8	6.6 - 9.9 - 15.7	4.7 - 7.0 - 11.1		43	37	34	23	13	-
	150	0.066	30 - 43 - 60	21 - 30 - 43	25	233	16.3	9.0 - 12.9 - 18.3	6.4 - 9.1 - 12.9		48	43	41	31	22	15
	190	0.105	38 - 48 - 68	27 - 34 - 48	31	295	26.2	11.5 - 14.6 - 20.6	8.1 - 10.3 - 14.6		51	48	46	38	29	22
	270	0.213	47 - 57 - 81	33 - 40 - 57	40	419	52.9	14.2 - 17.4 - 24.5	10.0 - 12.3 - 17.4		56	55	54	47	40	31
7 Slots	35	0.003	2 - 5 - 19		-	54	0.7	0.7 - 1.6 - 5.9			24	-	-	-	-	-
	125	0.033	23 - 35 - 55		17	194	8.3	7.0 - 10.5 - 16.7			44	37	34	23	12	-
	170	0.062	31 - 45 - 64		25	264	15.4	9.6 - 13.8 - 19.5			48	43	41	31	22	15
	215	0.099	40 - 51 - 72		31	334	24.7	12.1 - 15.5 - 21.9			51	48	46	38	29	21
	305	0.199	50 - 61 - 86		40	473	49.6	15.1 - 18.4 - 26.1			56	55	54	47	39	31
8 Slots	40	0.003	3 - 6 - 21	2 - 4 - 15	-	62	0.7	0.8 - 1.8 - 6.3	0.6 - 1.2 - 4.5		26	12	-	-	-	-
	140	0.032	24 - 37 - 58	17 - 26 - 41	18	217	8.0	7.4 - 11.1 - 17.7	5.2 - 7.8 - 12.5		44	37	34	23	12	-
	190	0.059	33 - 48 - 68	23 - 34 - 48	25	295	14.7	10.0 - 14.6 - 20.6	7.1 - 10.3 - 14.6		48	44	41	31	22	15
	240	0.094	42 - 54 - 76	29 - 38 - 54	31	373	23.5	12.7 - 16.4 - 23.1	9.0 - 11.6 - 16.4		51	48	46	37	29	21
	340	0.190	52 - 64 - 91	37 - 45 - 64	40	528	47.2	15.9 - 19.5 - 27.5	11.2 - 13.8 - 19.5		56	55	54	47	39	31

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. Odd numbered slots for 2-Way data have been intentionally left blank. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8

Series AL2000 - Ceiling Mount, Vertical Flow with Pattern Controller

IP/METRIC DATA: 1" SLOT WIDTH, CONTINUOUS SLOT

	IP Data				Metric Data				Octave Band, dB						
	Air Flow	Press Ps	Vertical Throw	NC	Air Flow	Press Ps	Vertical Throw								
	CFM/ft	"WG	ft		L/s/m	Pa	m		2	3	4	5	6	7	
1 Slot	5	0.002	1 - 1 - 4	-	8	0.4	0.2 - 0.4 - 1.4	-	-	-	-	-	-	-	-
	75	0.339	17 - 21 - 29	19	116	84.4	5.2 - 6.3 - 8.9	47	41	36	29	22	12		
	110	0.729	21 - 25 - 36	26	171	181.5	6.2 - 7.6 - 10.8	54	48	42	34	26	17		
	145	1.266	24 - 29 - 41	32	225	315.3	7.2 - 8.8 - 12.4	59	53	46	38	29	20		
	215	2.784	29 - 35 - 50	40	334	693.3	8.7 - 10.7 - 15.1	66	60	52	43	34	24		
2 Slots	10	0.002	1 - 2 - 6	-	16	0.4	0.3 - 0.6 - 2.0	-	-	-	-	-	-	-	-
	130	0.254	22 - 27 - 39	20	202	63.4	6.8 - 8.3 - 11.8	47	41	36	30	23	14		
	190	0.544	27 - 33 - 47	27	295	135.4	8.2 - 10.0 - 14.2	54	48	42	35	28	18		
	250	0.941	31 - 38 - 54	32	388	234.3	9.4 - 11.5 - 16.3	59	53	47	39	31	21		
	370	2.061	38 - 46 - 65	40	574	513.3	11.4 - 14.0 - 19.8	66	60	53	44	35	26		
3 Slots	15	0.002	1 - 3 - 8	-	23	0.4	0.4 - 0.8 - 2.4	-	-	-	-	-	-	-	-
	175	0.205	26 - 32 - 45	20	272	51.0	7.9 - 9.6 - 13.6	47	41	36	31	24	14		
	255	0.435	31 - 38 - 54	27	396	108.4	9.5 - 11.6 - 16.5	54	48	42	36	28	18		
	335	0.751	36 - 44 - 62	32	520	187.0	10.9 - 13.3 - 18.9	59	53	47	39	31	21		
	495	1.640	44 - 53 - 75	40	768	408.3	13.2 - 16.2 - 22.9	66	60	53	44	36	26		
4 Slots	20	0.002	1 - 3 - 9	-	31	0.4	0.4 - 0.9 - 2.8	-	-	-	-	-	-	-	-
	220	0.182	29 - 36 - 50	20	342	45.4	8.8 - 10.8 - 15.3	47	41	37	31	24	15		
	320	0.385	35 - 43 - 61	27	497	96.0	10.6 - 13.0 - 18.4	54	48	43	36	29	19		
	420	0.664	40 - 49 - 69	32	652	165.3	12.2 - 14.9 - 21.1	59	53	47	40	32	22		
	620	1.447	49 - 60 - 84	40	963	360.3	14.8 - 18.1 - 25.7	66	60	53	45	36	27		
5 Slots	25	0.002	2 - 3 - 10	-	39	0.4	0.5 - 1.1 - 3.2	-	-	-	-	-	-	-	-
	265	0.169	32 - 39 - 55	21	411	42.1	9.7 - 11.9 - 16.8	47	42	37	32	25	15		
	385	0.357	38 - 47 - 67	27	598	88.9	11.7 - 14.3 - 20.2	54	48	43	37	29	19		
	505	0.614	44 - 54 - 76	32	784	153.0	13.4 - 16.4 - 23.2	59	53	47	40	32	23		
	745	1.337	53 - 65 - 93	40	1157	333.0	16.2 - 19.9 - 28.1	66	60	53	45	37	27		
6 Slots	30	0.002	2 - 4 - 11	-	47	0.4	0.5 - 1.2 - 3.5	-	-	-	-	-	-	-	-
	300	0.151	34 - 42 - 59	21	466	37.5	10.3 - 12.6 - 17.9	47	41	37	32	25	15		
	435	0.317	41 - 50 - 71	27	675	78.8	12.4 - 15.2 - 21.5	54	48	43	37	29	20		
	570	0.544	47 - 57 - 81	32	885	135.4	14.2 - 17.4 - 24.6	59	53	47	40	32	23		
	840	1.181	57 - 69 - 98	40	1304	293.9	17.2 - 21.1 - 29.9	66	60	53	45	37	27		
7 Slots	35	0.002	2 - 4 - 12	-	54	0.4	0.6 - 1.3 - 3.8	-	-	-	-	-	-	-	-
	345	0.146	36 - 45 - 63	21	536	36.4	11.1 - 13.5 - 19.1	48	42	37	32	25	16		
	500	0.307	44 - 54 - 76	28	776	76.5	13.3 - 16.3 - 23.0	54	48	43	37	30	20		
	655	0.527	50 - 61 - 87	32	1017	131.3	15.2 - 18.7 - 26.4	59	53	47	41	33	23		
	965	1.145	61 - 74 - 105	40	1498	285.0	18.5 - 22.6 - 32.0	66	60	54	46	37	28		
8 Slots	40	0.002	2 - 4 - 13	-	62	0.4	0.6 - 1.4 - 4.0	-	-	-	-	-	-	-	-
	380	0.136	38 - 47 - 66	21	590	33.8	11.6 - 14.2 - 20.1	47	42	37	32	26	16		
	550	0.285	46 - 56 - 80	28	854	70.9	14.0 - 17.1 - 24.2	54	48	43	37	30	20		
	720	0.488	53 - 64 - 91	32	1118	121.5	16.0 - 19.6 - 27.7	59	53	47	41	33	23		
	1060	1.057	64 - 78 - 110	40	1646	263.3	19.4 - 23.7 - 33.6	66	60	54	46	37	28		

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8



Series AL2000 - Ceiling Mount, Vertical Flow with No Pattern Controller

IP/METRIC DATA: 1" SLOT WIDTH, CONTINUOUS SLOT

	IP Data				Metric Data				Octave Band, dB						
	Air Flow	Press Ps	Vertical Throw	NC	Air Flow	Press Ps	Vertical Throw								
	CFM/ft	"WG	ft		L/s/m	Pa	m		2	3	4	5	6	7	
1 Slot	5	0.000	0 - 0 - 1	-	8	0.1	0.0 - 0.1 - 0.4	-	-	-	-	-	-	-	-
	85	0.082	14 - 17 - 24	15	132	20.5	4.2 - 5.1 - 7.2	46	37	32	23	13	-	-	-
	125	0.178	17 - 20 - 29	23	194	44.3	5.0 - 6.2 - 8.7	53	44	37	29	17	-	-	-
	165	0.310	19 - 23 - 33	30	256	77.2	5.8 - 7.1 - 10.0	58	49	42	32	20	11	-	-
	245	0.684	23 - 28 - 40	39	380	170.2	7.1 - 8.7 - 12.2	65	56	48	38	24	15	-	-
2 Slots	10	0.000	0 - 1 - 3	-	16	0.1	0.1 - 0.2 - 0.9	-	-	-	-	-	-	-	-
	150	0.064	18 - 22 - 31	16	233	16.0	5.5 - 6.8 - 9.6	47	38	33	25	14	-	-	-
	220	0.138	22 - 27 - 38	24	342	34.3	6.7 - 8.2 - 11.6	54	45	38	30	19	-	-	-
	290	0.239	25 - 31 - 44	31	450	59.6	7.7 - 9.4 - 13.3	59	49	43	34	22	12	-	-
	430	0.527	31 - 38 - 53	40	668	131.1	9.4 - 11.5 - 16.2	66	56	49	39	26	16	-	-
3 Slots	15	0.000	1 - 1 - 5	-	23	0.1	0.2 - 0.4 - 1.5	-	-	-	-	-	-	-	-
	205	0.053	21 - 26 - 37	17	318	13.2	6.5 - 7.9 - 11.2	47	38	33	25	15	-	-	-
	300	0.114	26 - 31 - 45	24	466	28.4	7.8 - 9.6 - 13.5	54	45	39	30	19	-	-	-
	395	0.197	30 - 36 - 51	31	613	49.2	9.0 - 11.0 - 15.5	59	49	43	34	22	13	-	-
	585	0.433	36 - 44 - 62	40	908	107.8	10.9 - 13.4 - 18.9	66	56	49	40	27	17	-	-
4 Slots	20	0.000	1 - 2 - 6	-	31	0.1	0.2 - 0.5 - 2.0	-	-	-	-	-	-	-	-
	260	0.048	24 - 29 - 41	17	404	12.0	7.3 - 8.9 - 12.6	47	38	34	26	16	-	-	-
	380	0.103	29 - 35 - 50	25	590	25.6	8.8 - 10.8 - 15.2	54	45	39	31	20	-	-	-
	500	0.178	33 - 41 - 58	31	776	44.3	10.1 - 12.4 - 17.5	59	50	43	35	23	13	-	-
	740	0.390	40 - 49 - 70	40	1149	97.1	12.3 - 15.0 - 21.3	66	57	49	40	27	18	-	-
5 Slots	25	0.000	1 - 2 - 8	-	39	0.1	0.3 - 0.6 - 2.4	-	-	-	-	-	-	-	-
	305	0.042	26 - 32 - 45	17	473	10.6	7.9 - 9.7 - 13.7	47	38	34	26	16	-	-	-
	445	0.090	31 - 38 - 54	24	691	22.5	9.5 - 11.7 - 16.5	54	45	39	31	20	11	-	-
	585	0.156	36 - 44 - 62	31	908	38.8	10.9 - 13.4 - 18.9	59	50	43	35	23	14	-	-
	865	0.341	44 - 53 - 76	40	1343	84.9	13.3 - 16.3 - 23.0	66	56	49	40	27	18	-	-
6 Slots	30	0.000	1 - 2 - 9	-	47	0.1	0.3 - 0.7 - 2.8	-	-	-	-	-	-	-	-
	350	0.039	28 - 34 - 48	17	543	9.7	8.4 - 10.3 - 14.6	47	38	34	26	16	-	-	-
	510	0.082	34 - 41 - 58	24	792	20.5	10.2 - 12.5 - 17.7	54	45	39	31	21	11	-	-
	670	0.142	38 - 47 - 67	31	1040	35.4	11.7 - 14.3 - 20.2	59	50	43	35	23	14	-	-
	990	0.310	47 - 57 - 81	40	1537	77.2	14.2 - 17.4 - 24.6	66	56	49	40	28	18	-	-
7 Slots	35	0.000	1 - 3 - 10	-	54	0.1	0.3 - 0.8 - 3.1	-	-	-	-	-	-	-	-
	395	0.036	30 - 36 - 51	17	613	9.0	9.0 - 11.0 - 15.5	47	38	34	26	17	-	-	-
	575	0.077	36 - 44 - 62	24	893	19.1	10.8 - 13.3 - 18.7	54	45	39	31	21	11	-	-
	755	0.133	41 - 50 - 71	31	1172	33.0	12.4 - 15.2 - 21.5	59	50	44	35	24	14	-	-
	1115	0.289	50 - 61 - 86	40	1731	72.0	15.1 - 18.5 - 26.1	66	56	50	40	28	19	-	-
8 Slots	40	0.000	1 - 3 - 11	-	62	0.1	0.4 - 0.9 - 3.5	-	-	-	-	-	-	-	-
	440	0.034	31 - 38 - 54	18	683	8.6	9.5 - 11.6 - 16.4	47	38	34	26	17	-	-	-
	640	0.073	38 - 46 - 65	24	994	18.2	11.4 - 14.0 - 19.8	54	45	40	32	21	12	-	-
	840	0.126	43 - 53 - 75	31	1304	31.3	13.1 - 16.0 - 22.7	59	50	44	35	24	15	-	-
	1240	0.274	52 - 64 - 91	40	1925	68.1	15.9 - 19.5 - 27.5	66	57	50	41	28	19	-	-

NOTES: Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). Throw values are given for isothermal conditions and a 4' (1219) length. For other lengths, see correction charts below. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Pressures are for diffuser section only. Plenums will add to the sound level and pressure drop. Keep inlet velocities below 800 FPM to reduce plenum generated sound levels and pressure drop. See selection software for performance data not shown, including octave band data.

NC Addition For Length					
Length, ft	2	4	6	8	10
Length, m	0.6	1.2	1.8	2.4	3.0
Supply	-2	0	+2	+3	+5
Return with Blades	0	+3	+5	+6	+8

Throw Multiplier for Length					
Length, ft	2	4	8	10	12
Length, m	0.6	1.2	2.4	3.0	3.6
Correction	0.7	0	1.5	1.7	1.8

ALEC5, ALEC 10, ALEC15, ALEC5FF Eggcrate Exhaust Grille

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

Nominal Duct Size (in.)	Nominal Duct Area sq. ft	Core Area sq. ft	Core Velocity Velocity Pressure 1x1x1 Neg. Ps 1/2x1/2x1/2 Neg. Ps	NC 20 NC 30 NC 40									
				300	400	500	600	700	800	1000	1200	1400	
				0.006	0.01	0.016	0.022	0.031	0.04	0.062	0.09	0.122	
				0.013	0.024	0.037	0.054	0.073	0.096	0.15	0.216	0.294	
				0.013	0.024	0.037	0.053	0.073	0.095	0.148	0.213	0.29	
				Airflow, cfm	Airflow, cfm	Airflow, cfm	Airflow, cfm	Airflow, cfm	Airflow, cfm	Airflow, cfm	Airflow, cfm	Airflow, cfm	
6x6	0.25	0.19	NC	57	76	95	114	133	152	190	228	266	
				-	-	-	10	17	22	31	39	45	
8x6	0.33	0.26	NC	78	104	130	156	182	208	260	312	364	
				-	-	-	10	17	22	31	39	45	
10x6	0.42	0.34	NC	102	136	170	204	238	272	340	408	476	
				-	-	-	11	17	23	32	39	46	
8x8	0.44	0.37	NC	111	148	185	222	259	296	370	444	518	
				-	-	-	11	17	23	32	39	46	
12x6	0.50	0.41	NC	123	164	205	246	287	328	410	492	574	
				-	-	-	11	18	23	32	40	46	
14x6	0.58	0.48	NC	144	192	240	288	336	384	480	576	672	
				-	-	-	11	18	23	32	40	46	
16x6	0.67	0.57	Airflow, cfm	171	228	285	342	399	456	570	684	798	
12x8			NC	-	-	-	12	18	23	32	40	46	
10x10	0.69	0.59	NC	177	236	295	354	413	472	590	708	826	
				-	-	-	12	18	23	33	40	46	
18x6	0.75	0.63	NC	189	252	315	378	441	504	630	756	882	
				-	-	-	12	18	24	33	40	46	
20x6	0.83	0.72	Airflow, cfm	216	288	360	432	504	576	720	864	1008	
12x10			NC	-	-	-	12	18	24	33	40	46	
22x6	0.92	0.77	NC	231	308	385	462	539	616	770	924	1078	
				-	-	-	12	18	24	33	40	47	
24x6	1.00	0.88	Airflow, cfm	264	352	440	528	616	704	880	1056	1232	
12x12			NC	-	-	-	12	18	24	33	40	47	
30x6	1.25	1.11	Airflow, cfm	333	444	555	666	777	888	1110	1332	1554	
18x10			NC	-	-	-	13	19	24	34	41	47	
14x14	1.36	1.22	NC	366	488	610	732	854	976	1220	1464	1708	
				-	-	-	13	19	24	34	41	47	
36x6	1.50	1.35	Airflow, cfm	405	540	675	810	945	1080	1350	1620	1890	
18x12			NC	-	-	-	13	19	24	34	41	47	
22x10	1.53	1.37	NC	411	548	685	822	959	1096	1370	1644	1918	
				-	-	-	13	19	25	34	41	47	
30x8	1.67	1.49	Airflow, cfm	447	596	745	894	1043	1192	1490	1788	2086	
24x10			NC	-	-	-	13	19	25	34	41	47	
42x6	1.75	1.59	Airflow, cfm	477	636	795	954	1113	1272	1590	1908	2226	
18x14			NC	-	-	-	13	19	25	34	41	47	
16x16	1.78	1.62	NC	486	648	810	972	1134	1296	1620	1944	2268	
				-	-	-	13	19	25	34	41	48	
24x12	2.00	1.82	NC	546	728	910	1092	1274	1456	1820	2184	2548	
18x16				-	-	-	13	19	25	34	41	48	
18x18	2.25	2.07	NC	621	828	1035	1242	1449	1656	2070	2484	2898	
				-	-	-	13	19	25	34	41	48	
24x14	2.33	2.14	NC	642	856	1070	1284	1498	1712	2140	2568	2996	
				-	-	-	13	20	25	34	42	48	
30x12	2.50	2.29	NC	687	916	1145	1374	1603	1832	2290	2748	3206	
				-	-	-	13	20	25	34	42	48	
24x16	2.67	2.46	NC	738	984	1230	1476	1722	1968	2460	2952	3444	
				-	-	-	13	20	25	34	42	48	
20x20	2.78	2.57	NC	771	1028	1285	1542	1799	2056	2570	3084	3598	
				-	-	-	13	20	25	34	42	48	
36x12	3.00	2.75	NC	825	1100	1375	1650	1925	2200	2750	3300	3850	
				-	-	-	14	20	25	34	42	48	
30x16	3.33	3.11	Airflow, cfm	933	1244	1555	1866	2177	2488	3110	3732	4354	
24x20			NC	-	-	-	14	20	25	35	42	48	
22x22	3.36	3.14	NC	942	1256	1570	1884	2198	2512	3140	3768	4396	
				-	-	-	14	20	25	35	42	48	
42x12	3.50	3.22	Airflow, cfm	966	1288	1610	1932	2254	2576	3220	3864	4508	
36x14			NC	-	-	-	14	20	26	35	42	48	
24x22	3.67	3.43	NC	1029	1372	1715	2058	2401	2744	3430	4116	4802	
				-	-	-	14	20	26	35	42	48	
30x18	3.75	3.50	NC	1050	1400	1750	2100	2450	2800	3500	4200	4900	
				-	-	-	14	20	26	35	42	48	

• Static pressures are negative, in inches of water, measured per ANSI/ASHRAE Standard 70-2006

 • NC based on room absorption of 10dB, re 10⁻¹² watts, measured per ANSI/ASHRAE Standard 70-2006



PERFORMANCE DATA—LIGHT COMMERCIAL

ALEC5, ALEC 10, ALEC15, ALEC5FF Eggcrate Exhaust Grille

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

Nominal Duct Size (in.)	Nominal Duct Area sq. ft	Core Area sq. ft	Core Velocity Velocity Pressure 1x1x1 Neg. Ps 1/2x1/2x1/2 Neg. Ps	NC 20 NC 30 NC 40									
				300	400	500	600	700	800	1000	1200	1400	
				0.006	0.01	0.016	0.022	0.031	0.04	0.062	0.09	0.122	
				0.013	0.024	0.037	0.054	0.073	0.096	0.15	0.216	0.294	
				0.013	0.024	0.037	0.053	0.073	0.095	0.148	0.213	0.29	
48x12	4.00	3.75	Airflow, cfm	1125	1500	1875	2250	2625	3000	3750	4500	5250	
24x24			NC	-	-	-	14	20	26	35	42	49	
36x18	4.50	4.22	Airflow, cfm	1266	1688	2110	2532	2954	3376	4220	5064	5908	
36x20			NC	-	-	-	14	20	26	35	42	49	
30x24	5.00	4.71	Airflow, cfm	1413	1884	2355	2826	3297	3768	4710	5652	6594	
30x24			NC	-	-	-	14	21	26	35	43	49	
42x18	5.25	4.94	Airflow, cfm	1482	1976	2470	2964	3458	3952	4940	5928	6916	
42x18			NC	-	-	-	14	21	26	35	43	49	
28x28	5.44	5.16	Airflow, cfm	1548	2064	2580	3096	3612	4128	5160	6192	7224	
42x20			NC	-	-	-	14	21	26	35	43	49	
30x28	5.83	5.51	Airflow, cfm	1653	2204	2755	3306	3857	4408	5510	6612	7714	
30x28			NC	-	-	-	14	21	26	35	43	49	
48x18	6.00	5.66	Airflow, cfm	1698	2264	2830	3396	3962	4528	5660	6792	7924	
36x24			NC	-	-	-	14	21	26	35	43	49	
30x30	6.25	5.94	Airflow, cfm	1782	2376	2970	3564	4158	4752	5940	7128	8316	
42x24			NC	-	-	-	15	21	26	35	43	49	
36x28	7.00	6.66	Airflow, cfm	1998	2664	3330	3996	4662	5328	6660	7992	9324	
36x28			NC	-	-	-	15	21	26	36	43	49	
46x22	7.03	6.68	Airflow, cfm	2004	2672	3340	4008	4676	5344	6680	8016	9352	
46x22			NC	-	-	-	15	21	26	36	43	49	
32x32	7.11	6.78	Airflow, cfm	2034	2712	3390	4068	4746	5424	6780	8136	9492	
32x32			NC	-	-	-	15	21	27	36	43	49	
36x30	7.50	7.16	Airflow, cfm	2148	2864	3580	4296	5012	5728	7160	8592	10024	
48x24			NC	-	-	-	15	21	27	36	43	49	
48x24	8.00	7.63	Airflow, cfm	2289	3052	3815	4578	5341	6104	7630	9156	10682	
36x32			NC	-	-	-	15	21	27	36	43	49	
34x34	8.03	7.68	Airflow, cfm	2304	3072	3840	4608	5376	6144	7680	9216	10752	
34x34			NC	-	-	-	15	21	27	36	43	49	
36x34	8.50	8.14	Airflow, cfm	2442	3256	4070	4884	5698	6512	8140	9768	11396	
36x34			NC	-	-	-	15	21	27	36	43	50	
42x30	8.75	8.38	Airflow, cfm	2514	3352	4190	5028	5866	6704	8380	10056	11732	
42x30			NC	-	-	-	15	21	27	36	43	50	
36x36	9.00	8.63	Airflow, cfm	2589	3452	4315	5178	6041	6904	8630	10356	12082	
42x34			NC	-	-	-	15	21	27	36	43	50	
48x30	10.00	9.60	Airflow, cfm	2880	3840	4800	5760	6720	7680	9600	11520	13440	
48x30			NC	-	-	-	15	21	27	36	43	50	
38x38	10.03	9.64	Airflow, cfm	2892	3856	4820	5784	6748	7712	9640	11568	13496	
38x38			NC	-	-	-	15	21	27	36	43	50	
42x36	10.50	10.10	Airflow, cfm	3030	4040	5050	6060	7070	8080	10100	12120	14140	
42x36			NC	-	-	-	15	22	27	36	44	50	
46x34	10.86	10.45	Airflow, cfm	3135	4180	5225	6270	7315	8360	10450	12540	14630	
46x34			NC	-	-	-	15	22	27	36	44	50	
42x38	11.08	10.67	Airflow, cfm	3201	4268	5335	6402	7469	8536	10670	12804	14938	
42x38			NC	-	-	-	15	22	27	36	44	50	
40x40	11.11	10.70	Airflow, cfm	3210	4280	5350	6420	7490	8560	10700	12840	14980	
40x40			NC	-	-	-	15	22	27	36	44	50	
48x36	12.00	11.57	Airflow, cfm	3471	4628	5785	6942	8099	9256	11570	13884	16198	
48x36			NC	-	-	-	15	22	27	36	44	50	
42x42	12.25	11.82	Airflow, cfm	3546	4728	5910	7092	8274	9456	11820	14184	16548	
42x42			NC	-	-	-	15	22	27	36	44	50	
44x44	13.44	12.99	Airflow, cfm	3897	5196	6495	7794	9093	10392	12990	15588	18186	
44x44			NC	-	-	-	16	22	27	36	44	50	
48x42	14.00	13.54	Airflow, cfm	4062	5416	6770	8124	9478	10832	13540	16248	18956	
48x42			NC	-	-	-	16	22	27	37	44	50	
46x46	14.69	14.22	Airflow, cfm	4266	5688	7110	8532	9954	11376	14220	17064	19908	
46x46			NC	-	-	-	16	22	27	37	44	50	
48x46	15.33	14.85	Airflow, cfm	4455	5940	7425	8910	10395	11880	14850	17820	20790	
48x46			NC	-	-	-	16	22	27	37	44	50	
48x48	16.00	15.50	Airflow, cfm	4650	6200	7750	9300	10850	12400	15500	18600	21700	
48x48			NC	-	-	-	16	22	28	37	44	50	

• Static pressures are negative, in inches of water, measured per ANSI/ASHRAE Standard 70-2006

• NC based on room absorption of 10dB, re 10⁻¹² watts, measured per ANSI/ASHRAE Standard 70-2006

700/AL700 Nonvision Door Grille

PERFORMANCE BASED ON NOMINAL SIZES SHOWN IN BOLD

				NC 20				NC 30				NC 40			
Nominal Duct Size (in)	Nominal Duct Area sq. ft	Core Area sq. ft	Core Velocity Velocity Pressure CT-700 Static Pressure T-700 Static Pressure	200 0.003 0.028 0.027	250 0.004 0.044 0.043	300 0.006 0.063 0.062	350 0.008 0.086 0.084	400 0.010 0.113 0.110	450 0.013 0.143 0.139	500 0.016 0.176 0.172	550 0.019 0.213 0.208	600 0.022 0.254 0.247			
6x6	0.25	0.19	Airflow, cfm NC (Noise Criteria)	38 15	48 20	57 24	67 27	76 30	86 32	95 34	105 36	114 38			
8x6	0.33	0.26	Airflow, cfm NC (Noise Criteria)	52 16	65 21	78 25	91 28	104 31	117 33	160 36	143 38	156 39			
10x6	0.42	0.34	Airflow, cfm NC (Noise Criteria)	68 18	85 22	102 26	119 29	136 32	153 35	170 37	187 39	204 41			
8x8	0.44	0.37	Airflow, cfm NC (Noise Criteria)	74 18	93 23	111 26	130 30	148 32	167 35	185 37	204 39	222 41			
12x6	0.50	0.41	Airflow, cfm NC (Noise Criteria)	82 18	103 23	123 27	144 30	164 33	185 35	205 38	226 40	246 41			
14x6	0.58	0.48	Airflow, cfm NC (Noise Criteria)	96 19	120 24	144 28	168 32	192 34	216 37	240 39	264 41	288 43			
16x6			Airflow, cfm	114	143	171	200	228	257	285	314	342			
12x8	0.67	0.57	NC (Noise Criteria)	20	24	28	31	34	36	38	40	42			
			Airflow, cfm	118	148	177	207	236	266	295	325	354			
10x10	0.69	0.59	NC (Noise Criteria)	20	25	28	32	34	37	39	41	43			
			Airflow, cfm	126	158	189	221	252	284	315	347	378			
18x6	0.75	0.63	NC (Noise Criteria)	20	25	29	32	35	37	39	41	43			
20x6			Airflow, cfm	144	180	216	252	288	324	360	396	432			
12x10	0.83	0.72	NC (Noise Criteria)	21	25	29	33	35	38	40	42	44			
			Airflow, cfm	154	193	231	270	308	347	385	424	462			
22x6	0.92	0.77	NC (Noise Criteria)	21	26	30	33	36	38	40	42	44			
			Airflow, cfm	176	220	264	308	352	396	440	484	528			
24x6			NC (Noise Criteria)	22	26	30	33	36	39	41	43	45			
30x6			Airflow, cfm	222	278	333	389	444	500	555	611	666			
18x10	1.25	1.11	NC (Noise Criteria)	23	27	31	34	37	40	42	44	46			
			Airflow, cfm	244	305	366	437	488	549	610	671	732			
14x14	1.36	1.22	NC (Noise Criteria)	23	28	32	358	38	40	42	44	46			
			Airflow, cfm	270	338	405	473	540	608	675	743	810			
18x12	1.50	1.35	NC (Noise Criteria)	24	28	32	35	38	41	43	45	47			
			Airflow, cfm	274	343	411	480	548	617	685	754	822			
22x10	1.53	1.37	NC (Noise Criteria)	24	28	32	35	38	41	43	45	47			
30x8			Airflow, cfm	298	373	447	522	596	671	745	820	894			
24x10	1.67	1.49	NC (Noise Criteria)	24	28	32	35	38	41	43	45	47			
			Airflow, cfm	318	398	477	557	636	716	795	875	954			
18x14	1.75	1.59	NC (Noise Criteria)	24	29	33	36	39	41	43	45	47			
16x16	1.78	1.62	Airflow, cfm	324	405	486	567	648	729	810	891	972			
			NC (Noise Criteria)	24	29	33	36	39	41	44	46	47			
24x12	2.00	1.82	Airflow, cfm	364	455	546	637	728	819	910	1001	1092			
18x16			NC (Noise Criteria)	25	30	33	37	39	42	44	46	48			
18x18	2.25	2.07	Airflow, cfm	414	518	621	725	828	932	1035	1139	1242			
			NC (Noise Criteria)	25	30	34	37	40	42	45	47	48			
24x14	2.33	2.14	Airflow, cfm	428	535	642	749	856	963	1070	1177	1284			
			NC (Noise Criteria)	26	30	34	37	40	42	45	47	49			
30x12	2.50	2.29	Airflow, cfm	458	573	687	802	916	1031	1145	1260	1374			
			NC (Noise Criteria)	26	31	34	38	40	43	45	47	49			
24x16	2.67	2.46	Airflow, cfm	493	615	738	861	984	1107	1230	1353	1476			
			NC (Noise Criteria)	26	31	35	38	41	43	45	47	49			
20x20	2.78	2.57	Airflow, cfm	514	643	771	900	1028	1157	1258	1414	1542			
			NC (Noise Criteria)	26	31	35	38	41	43	46	48	49			
30x16	3.33	3.11	Airflow, cfm	622	778	933	1089	1244	1400	1555	1711	1866			
24x20			NC (Noise Criteria)	27	32	36	39	42	44	46	48	50			
			Airflow, cfm	628	785	942	1099	1256	1413	1570	1727	1884			
22x22	3.36	3.14	NC (Noise Criteria)	27	32	36	39	42	44	46	48	50			
			Airflow, cfm	686	858	1029	1201	1372	1544	1715	1887	2058			
24x22	3.67	3.43	NC (Noise Criteria)	28	32	36	39	42	45	47	49	51			
			Airflow, cfm	700	875	1050	1225	1400	1575	1750	1925	2100			
30x18	3.75	3.50	NC (Noise Criteria)	28	32	36	39	42	45	47	49	51			
			Airflow, cfm	750	938	1125	1313	1500	1688	1875	2063	2250			
24x24	4.00	3.75	NC (Noise Criteria)	28	33	36	40	43	45	47	49	51			
			Airflow, cfm	942	1178	1413	1649	1884	2120	2355	2591	2826			
30x24	5.00	4.71	NC (Noise Criteria)	29	34	37	41	43	46	48	50	52			
			Airflow, cfm	1032	1290	1548	1806	2064	2322	2580	2838	2096			
28x28	5.44	5.16	NC (Noise Criteria)	29	34	38	41	44	46	49	51	52			
			Airflow, cfm	1102	1378	1653	1929	2204	2480	2755	3031	3306			
30x28	5.83	5.51	NC (Noise Criteria)	30	34	38	41	44	47	49	51	53			
			Airflow, cfm	1188	1485	1782	2079	2376	2673	2970	3267	3564			
30x30	6.25	5.94	NC (Noise Criteria)	30	35	38	42	44	47	49	51	53			

• Static pressures are negative, in inches of water, measured per ANSI/ASHRAE Standard 70-2006

• NC based on room absorption of 10dB, re 10⁻¹² watts, measured per ANSI/ASHRAE Standard 70-2006

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