

Performance Data

Aluminum Return Grilles and Registers • 45° Deflection

Models: CL-E-45-F • CL-E-45-C • CL-E-45-D

CL-E-SH-45-F • CL-E-SH-45-C • CL-E-SH-45-D

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	AK Factor	Core Velocity VP Neg. SP	100 .001 .004	200 .002 .016	300 .006 .037	400 .010 .065	500 .016 .102	600 .022 .146	700 .031 .199	800 .040 .260	900 .050 .330	1000 .062 .407
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 -	40 15	60 21	80 27	100 31	120 35	140 37	160 40	180 44	200 49
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 -	56 15	84 21	112 27	140 32	168 36	196 38	224 41	252 45	280 50
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 -	70 16	105 22	140 28	175 33	210 37	245 39	280 42	315 46	350 51
8 x 8	14 x 5	0.38	0.40	CFM NC	38 -	76 16	114 22	152 28	190 33	228 38	266 40	304 43	342 47	380 51
12 x 6	18 x 4	0.42	0.45	CFM NC	42 -	84 17	126 23	168 29	210 34	252 38	294 41	336 44	378 48	420 52
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 -	116 17	174 23	232 29	290 34	348 38	406 41	464 45	522 49	580 53
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 -	122 18	183 24	244 29	305 34	366 38	427 41	488 46	549 49	610 54
18 x 6	14 x 8 28 x 4	0.65	0.67	CFM NC	65 -	130 18	195 24	260 30	325 35	390 39	455 42	520 46	585 50	650 54
12 x 10	16 x 8 24 x 5	0.74	0.74	CFM NC	74 -	148 18	222 25	296 30	370 35	444 40	518 43	592 47	666 51	740 54
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90	0.89	CFM NC	90 -	180 19	270 25	360 31	450 36	540 40	630 43	720 48	810 51	900 54
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24	1.22	CFM NC	124 -	248 20	372 26	496 31	620 36	744 41	868 44	992 48	1116 52	1240 55
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37	1.34	CFM NC	137 -	274 20	411 26	548 32	685 37	822 42	959 45	1096 51	1233 54	1370 57
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	164 15	328 21	492 27	656 33	820 38	984 42	1148 46	1312 51	1476 54	1640 57
16 x 16	18 x 14 22 x 12 30 x 8	1.64	1.58	CFM NC	152 15	304 21	456 26	608 32	760 37	912 42	1064 46	1216 51	1368 54	1520 57
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85	1.78	CFM NC	185 15	370 21	555 27	740 33	925 38	1110 43	1295 46	1480 51	1665 54	1850 58
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10	2.01	CFM NC	210 16	420 22	630 27	840 33	1050 38	1260 43	1470 47	1680 52	1890 55	2100 59
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32	2.23	CFM NC	232 16	464 22	699 27	920 33	1160 38	1392 43	1624 47	1856 52	2088 55	2320 59
20 x 20	24 x 18 26 x 16 30 x 14 36 x 12	2.61	2.48	CFM NC	261 17	522 22	783 29	1044 33	1305 38	1566 43	1827 47	2088 52	2349 55	2610 59
22 x 22	24 x 20 26 x 18 30 x 16 36 x 14	3.17	3.00	CFM NC	317 17	634 23	951 28	1268 34	1585 39	1902 44	2219 48	2536 52	2853 55	3170 59
30 x 18	24 x 22 34 x 16 40 x 14	3.54	3.34	CFM NC	254 18	708 24	1062 28	1416 34	1770 39	2124 44	2478 48	2832 53	3186 56	3540 60
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79	3.56	CFM NC	379 18	758 24	1137 28	1516 34	1895 39	2274 44	2653 49	3032 53	3411 56	3790 60
36 x 18	32 x 20 40 x 16 46 x 14	4.27	4.01	CFM NC	427 18	854 24	1281 29	1708 36	2135 41	2562 45	2989 49	3416 54	3843 57	4270 61
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 19	894 25	1341 30	1788 36	2235 41	2682 45	3129 49	3576 54	4023 57	4470 61
30 x 24	28 x 26 32 x 22 36 x 20 40 x 18	4.77	4.46	CFM NC	477 19	954 25	1431 30	1908 37	2385 42	2862 46	3339 50	3816 54	4293 58	4770 62
28 x 28	30 x 26 36 x 22 40 x 20	5.20	4.85	CFM NC	520 19	1040 25	1560 30	2080 37	2600 42	3120 46	3640 50	4160 55	4680 58	5200 62
36 x 24	30 x 28 40 x 22 44 x 20	5.74	5.35	CFM NC	574 19	1148 25	1722 30	2296 37	2870 42	3444 46	4018 50	4592 55	5166 59	5740 63
30 x 30	34 x 26 38 x 24 48 x 20	5.99	5.57	CFM NC	599 20	1198 26	1797 31	2396 37	2995 42	3594 47	4193 51	4792 55	5391 59	5990 63

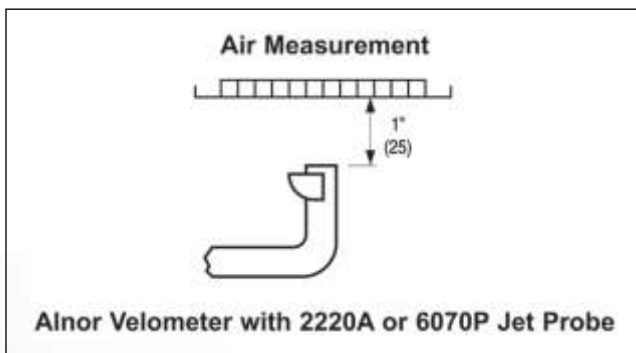
Performance Data

Aluminum Return Grilles and Registers • 45° Deflection

Models: CL-E-45-F • CL-E-45-C • CL-E-45-D

CL-E-SH-45-F • CL-E-SH-45-C • CL-E-SH-45-D

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	AK Factor	Core Velocity VP Neg. SP	100	200	300	400	500	600	700	800	900	1000	
					.001 .004	.002 .016	.006 .037	.010 .065	.016 .102	.022 .146	.031 .199	.040 .260	.050 .330	.062 .407	
32 x 32	36 x 30	46 x 22	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
	NC				20	26	31	37	43	47	51	56	60	64	
48 x 24	34 x 34	38 x 30 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
	NC				21	26	31	37	43	48	52	56	60	64	
36 x 36	38 x 34	46 x 28 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
	NC				21	27	32	38	43	48	53	57	61	65	
38 x 38	42 x 34	48 x 30	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
	NC				22	27	33	38	44	49	53	57	61	65	
40 x 40	42 x 36	48 x 32	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
	NC				22	27	33	39	45	49	54	57	62	66	
42 x 42	44 x 40	48 x 36	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
	NC				22	27	33	39	45	50	54	58	62	66	
44 x 44	46 x 42		13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
					NC	22	28	34	39	45	50	54	58	62	66
46 x 46			14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
					NC	23	29	34	40	46	51	55	59	63	67
48 x 48			15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
					NC	23	29	35	40	46	51	55	59	63	67



Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

- CFM** - cubic feet per minute
- VP** - velocity pressure - inches w.g.
- Neg. SP** - negative static pressure - inches w.g.
- NC** - Noise Criteria values are based on 10dB room absorption, re 10¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value - 4.

Performance Data

Aluminum Return Grilles and Registers • 30° Deflection

Models: CL-E-30-F • CL-E-30-C • CL-E-30-D

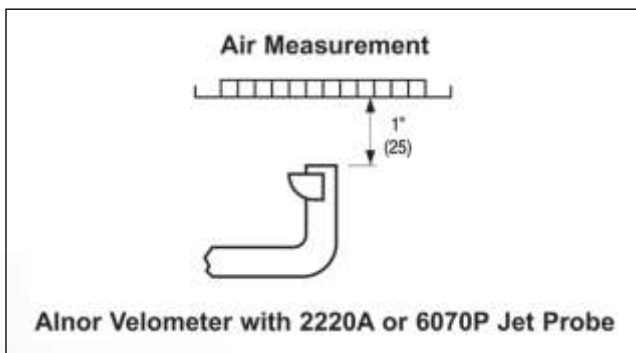
CL-E-SH-30-F • CL-E-SH-30-C • CL-E-SH-30-D

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	AK Factor	Core Velocity VP Neg. SP	100	200	300	400	500	600	700	800	900	1000
					.001 .004	.002 .016	.006 .037	.010 .065	.016 .102	.022 .146	.031 .199	.040 .260	.050 .330	.062 .407
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM	20	40	60	80	100	120	140	160	180	200
				NC	-	15	21	27	31	35	37	40	44	49
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM	28	56	84	112	140	168	196	224	252	280
				NC	-	15	21	27	32	36	38	41	45	50
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM	35	70	105	140	175	210	245	280	315	350
				NC	-	16	22	28	33	37	39	42	46	51
8 x 8	14 x 5	0.38	0.40	CFM	38	76	114	152	190	228	266	304	342	380
				NC	-	16	22	28	33	38	40	43	47	51
12 x 6	18 x 4	0.42	0.45	CFM	42	84	126	168	210	252	294	336	378	420
				NC	-	17	23	29	34	38	41	44	48	52
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM	58	116	174	232	290	348	406	464	522	580
				NC	-	17	23	29	34	38	41	45	49	53
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM	61	122	183	244	305	366	427	488	549	610
				NC	-	18	24	29	34	38	41	46	49	54
18 x 6	14 x 8 28 x 4	0.65	0.67	CFM	65	130	195	260	325	390	455	520	585	650
				NC	-	18	24	30	35	39	42	46	50	54
12 x 10	16 x 8 24 x 5	0.74	0.74	CFM	74	148	222	296	370	444	518	592	666	740
				NC	-	18	25	30	35	40	43	47	51	54
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90	0.89	CFM	90	180	270	360	450	540	630	720	810	900
				NC	-	19	25	31	36	40	43	48	51	54
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24	1.22	CFM	124	248	372	496	620	744	868	992	1116	1240
				NC	-	20	26	31	36	41	44	48	52	55
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37	1.34	CFM	137	274	411	548	685	822	959	1096	1233	1370
				NC	-	20	26	32	37	42	45	51	54	57
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM	164	328	492	656	820	984	1148	1312	1476	1640
				NC	15	21	27	33	38	42	46	51	54	57
16 x 16	18 x 14 22 x 12	1.64	1.58	CFM	152	304	456	608	760	912	1064	1216	1368	1520
				NC	15	21	26	32	37	42	46	51	54	57
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85	1.78	CFM	185	370	555	740	925	1110	1295	1480	1665	1850
				NC	15	21	27	33	38	43	46	51	54	58
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10	2.01	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100
				NC	16	22	27	33	38	43	47	52	55	59
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32	2.23	CFM	232	464	696	928	1160	1392	1624	1856	2088	2320
				NC	16	22	27	33	38	43	47	52	55	59
20 x 20	24 x 18 26 x 16 30 x 14 36 x 12	2.61	2.48	CFM	261	522	783	1044	1305	1566	1827	2088	2349	2610
				NC	17	22	29	33	38	43	47	52	55	59
22 x 22	24 x 20 26 x 18 30 x 16 36 x 14	3.17	3.00	CFM	317	634	951	1268	1585	1902	2219	2536	2853	3170
				NC	17	23	28	34	39	44	48	52	55	59
30 x 18	24 x 22 34 x 16 40 x 14	3.54	3.34	CFM	254	708	1062	1416	1770	2124	2478	2832	3186	3540
				NC	18	24	28	34	39	44	48	53	56	60
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79	3.56	CFM	379	758	1137	1516	1895	2274	2653	3032	3411	3790
				NC	18	24	28	34	39	44	49	53	56	60
36 x 18	32 x 20 40 x 16 46 x 14	4.27	4.01	CFM	427	854	1281	1708	2135	2562	2989	3416	3843	4270
				NC	18	24	29	36	41	45	49	54	57	61
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM	447	894	1341	1788	2235	2682	3129	3576	4023	4470
				NC	19	25	30	36	41	45	49	54	57	61
30 x 24	28 x 26 32 x 22 36 x 20 40 x 18	4.77	4.46	CFM	477	954	1431	1908	2385	2862	3339	3816	4293	4770
				NC	19	25	30	37	42	46	50	54	58	62
28 x 28	30 x 26 36 x 22 40 x 20	5.20	4.85	CFM	520	1040	1560	2080	2600	3120	3640	4160	4680	5200
				NC	19	25	30	37	42	46	50	55	58	62
36 x 24	30 x 28 40 x 22 44 x 20	5.74	5.35	CFM	574	1148	1722	2296	2870	3444	4018	4592	5166	5740
				NC	19	25	30	37	42	46	50	55	59	63
30 x 30	34 x 26 38 x 24 48 x 20	5.99	5.57	CFM	599	1198	1797	2396	2995	3594	4193	4792	5391	5990
				NC	20	26	31	37	42	47	51	55	59	63

Performance Data

Aluminum Return Grilles and Registers • 30° Deflection
 Models: CL-E-30-F • CL-E-30-C • CL-E-30-D
 CL-E-SH-30-F • CL-E-SH-30-C • CL-E-SH-30-D

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	AK Factor	Core Velocity VP Neg. SP	100	200	300	400	500	600	700	800	900	1000	
					.001 .004	.002 .016	.006 .037	.010 .065	.016 .102	.022 .146	.031 .199	.040 .260	.050 .330	.062 .407	
32 x 32	36 x 30	46 x 22	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
	NC				20	26	31	37	43	47	51	56	60	64	
48 x 24	34 x 34	38 x 30 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
	NC				21	26	31	37	43	48	52	56	60	64	
36 x 36	38 x 34	46 x 28 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
	NC				21	27	32	38	43	48	53	57	61	65	
38 x 38	42 x 34	48 x 30	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
	NC				22	27	33	38	44	49	53	57	61	65	
40 x 40	42 x 36	48 x 32	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
	NC				22	27	33	39	45	49	54	57	62	66	
42 x 42	44 x 40	48 x 36	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
	NC				22	27	33	39	45	50	54	58	62	66	
44 x 44	46 x 42		13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
					NC	22	28	34	39	45	50	54	58	62	66
46 x 46			14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
					NC	23	29	34	40	46	51	55	59	63	67
48 x 48			15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
					NC	23	29	35	40	46	51	55	59	63	67



Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
 Airflow (CFM) = Average velocity (V_k) x Ak.

- CFM** - cubic feet per minute
- VP** - velocity pressure - inches w.g.
- Neg. SP** - negative static pressure - inches w.g.
- NC** - Noise Criteria values are based on 10dB room absorption, re 10¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value - 4.

Performance Data

Aluminum Supply Grille and 0° Deflection

Models: CL-00-F • CL-00-C

CL-SH-00-F • CL-SH-00-C

Free area Square Feet Per Lineal Foot	Nominal duct width (Inches)	SP	0.01	0.022	0.039	0.062	0.087	0.119	0.156	0.198	0.245
0.069	2	CFM per Foot	27	41	55	69	82	96	110	124	138
		NC	-	-	14	20	26	31	35	38	42
		↑ Sill or Floor Side Wall	2-2-2 4-6-9	6-6-6 6-9-12	8-8-9 8-12-17	11-12-13 11-16-22	13-14-16 13-19-25	15-17-19 15-21-28	18-20-22 18-25-32	21-22-23 21-28-36	22-23-24 22-30-39
0.085	2.5	CFM per Foot	32	51	68	85	101	118	136	153	170
		NC	-	-	15	21	27	32	36	39	42
		↑ Sill or Floor Side Wall	2-2-2 5-7-10	7-7-7 7-11-15	10-10-11 10-14-19	12-13-15 12-17-23	15-16-18 15-21-27	18-19-21 18-24-31	20-22-24 20-27-34	24-24-25 24-31-39	26-26-27 26-34-41
0.105	3	CFM per Foot	41	63	83	105	126	146	168	188	210
		NC	-	-	16	22	28	33	37	40	43
		↑ Sill or Floor Side Wall	3-3-3 5-7-10	8-8-8 9-12-16	12-12-12 12-16-20	15-15-16 15-20-25	18-19-20 18-23-28	20-21-22 20-26-32	23-24-25 23-29-36	25-26-27 25-32-39	29-29-29 29-36-43
0.121	3.5	CFM per Foot	47	72	95	121	145	163	193	216	242
		NC	-	-	16	22	28	33	37	40	43
		↑ Sill or Floor Side Wall	3-3-3 5-7-10	8-8-8 9-12-16	12-12-12 12-16-20	15-15-16 15-20-25	18-19-20 18-23-28	20-21-22 20-26-32	23-24-25 23-29-36	25-26-27 25-32-39	29-29-29 29-36-43
0.141	4	CFM per Foot	55	84	111	141	169	195	225	252	282
		NC	-	-	17	23	29	34	38	41	44
		↑ Sill or Floor Side Wall	3-3-3 6-8-11	9-9-9 10-13-17	13-13-13 13-17-21	16-16-17 16-21-26	20-20-21 20-25-31	22-23-24 22-28-34	24-25-26 24-30-37	28-28-28 28-35-41	31-31-31 31-38-45
0.177	5	CFM per Foot	71	106	142	177	212	248	283	318	354
		NC	-	10	18	24	30	35	39	42	45
		↑ Sill or Floor Side Wall	4-4-4 8-10-13	10-10-10 11-14-18	15-15-15 15-19-23	18-18-18 18-22-27	22-22-23 22-27-32	25-25-25 25-31-37	27-27-28 27-33-39	30-30-30 30-37-43	34-34-34 34-41-47
0.213	6	CFM per Foot	85	127	170	212	254	293	339	382	425
		NC	-	11	20	25	31	36	40	43	46
		↑ Sill or Floor Side Wall	5-5-5 8-10-13	10-10-10 12-15-19	15-15-15 16-19-24	18-18-18 19-23-28	22-22-22 23-28-34	24-24-24 27-32-38	28-28-28 29-34-39	30-30-30 33-39-44	35-35-35 34-42-47
0.286	8	CFM per Foot	115	171	229	286	342	400	457	513	571
		NC	-	12	21	26	31	36	41	44	47
		↑ Sill or Floor Side Wall	6-6-6 9-11-14	11-11-11 13-16-20	16-16-16 16-20-24	19-19-19 19-24-29	23-23-24 23-29-35	25-25-25 26-33-39	29-29-29 29-35-40	31-31-31 33-39-45	36-36-37 37-43-48

Nominal Width	AK Factor per foot	
	Supply	Return
2	0.078	0.0663
2.5	0.084	0.0714
3	0.115	0.09775
3.5	0.131	0.11135
4	0.151	0.12835
5	0.187	0.15895
6	0.223	0.18955
8	0.297	0.25245

CFM-cubic feet per minute.

FPM-feet per minute velocity.

TP-total pressure - inches w.g.

T-throw in feet.

NC-Noise Criteria (values) based on 10 dB room absorption, re 10-12watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.

2. Throw value are based on a 4 foot section with a cooling Tof 20oF (11oC).

For other lengths, use the correction

3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

Performance Data

Aluminum Supply Grille and 15° Deflection

Models: CL-15-F • CL-15-C

CL-SH-15-F • CL-SH-15-C

Free area Square Feet Per Lineal Foot	Nominal duct width (Inches)	SP	0.01	0.022	0.039	0.062	0.087	0.119	0.156	0.198	0.245
0.072	2	CFM per Foot	28	42	57	72	85	99	114	129	143
		NC	-	-	14	20	26	31	35	38	42
		↑ Sill or Floor Side Wall	1-1-1 3-5-7	5-5-5 6-9-13	9-9-9 9-13-17	11-12-13 11-16-22	13-14-16 13-19-25	15-17-19 15-21-28	18-20-22 18-25-32	21-22-23 21-28-36	22-23-24 22-30-39
0.009	2.5	CFM per Foot	35	54	72	90	107	125	144	162	180
		NC	-	12	20	27	32	36	40	44	47
		↑ Sill or Floor Side Wall	2-2-2 4-6-9	6-6-6 8-11-15	10-10-11 10-14-19	12-13-15 12-17-23	15-16-18 15-21-27	18-19-21 18-24-31	20-22-24 20-27-34	23-24-25 24-31-39	26-26-26 26-34-41
0.113	3	CFM per Foot	44	67	89	113	136	157	180	202	226
		NC	-	12	20	28	32	36	40	43	46
		↑ Sill or Floor Side Wall	2-2-2 6-8-11	8-8-8 9-12-16	11-11-12 12-16-21	15-15-15 14-19-24	17-18-19 18-23-28	21-21-22 21-27-33	22-23-25 23-29-36	25-25-26 25-32-39	28-28-29 28-36-43
0.134	3.5	CFM per Foot	52	79	105	134	160	185	213	239	267
		NC	-	13	21	28	33	38	41	45	48
		↑ Sill or Floor Side Wall	3-3-3 6-9-12	9-9-9 10-13-17	13-13-13 13-17-22	16-16-17 15-20-25	19-20-21 19-24-30	22-22-23 22-28-34	24-25-26 25-31-38	27-27-27 28-36-41	29-29-29 29-37-44
0.153	4	CFM per Foot	59	90	120	152	182	211	243	272	304
		NC	-	14	22	28	34	38	42	45	49
		↑ Sill or Floor Side Wall	3-3-3 7-10-12	9-9-9 11-14-18	13-14-14 14-18-23	17-17-18 18-22-28	20-20-21 20-25-31	23-23-24 23-29-35	24-25-26 26-32-39	28-28-28 29-36-42	31-31-31 32-38-45
0.197	5	CFM per Foot	78	117	157	196	235	275	314	351	390
		NC	-	14	22	30	35	37	43	45	48
		↑ Sill or Floor Side Wall	4-4-4 8-10-13	10-10-10 12-16-20	14-14-14 16-20-24	18-18-18 19-23-28	22-22-22 23-28-33	25-25-25 25-31-37	27-27-28 28-34-39	30-30-30 31-37-43	34-34-34 35-41-47
0.238	6	CFM per Foot	94	140	188	235	282	330	376	424	470
		NC	-	15	22	31	36	38	45	47	50
		↑ Sill or Floor Side Wall	5-5-5 8-11-14	10-10-10 13-16-20	15-15-15 17-21-25	18-18-18 20-24-29	23-23-23 24-29-34	25-25-25 27-32-38	28-28-29 29-34-40	31-31-31 32-38-43	35-35-36 36-42-47
0.321	8	CFM per Foot	128	191	256	320	383	448	511	574	639
		NC	11	16	23	33	36	39	46	49	52
		↑ Sill or Floor Side Wall	6-6-6 9-12-15	11-11-11 14-17-21	16-16-16 17-22-26	19-19-19 21-25-30	23-23-24 24-30-35	25-25-25 28-33-39	29-29-29 30-35-42	31-31-31 33-30-44	36-36-37 37-43-48

CFM-cubic feet per minute.

FPM-feet per minute velocity.

TP-total pressure - inches w.g.

T-throw in feet.

NC-Noise Criteria (values) based on 10 dB room absorption, re 10-12 watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔTof 20°F (11°C). For other lengths, use the correction
3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

Nominal Width	AK Factor per foot	
	Supply	Return
2	0.081	0.06885
2.5	0.1	0.085
3	0.123	0.10455
3.5	0.144	0.1224
4	0.163	0.13855
5	0.207	0.17595
6	0.248	0.2108
8	0.332	0.2822

Performance Data

Aluminum Supply Grille and 15° Deflection

Models: CL-E-00-F • CL-E-00-C

CL-E-SH-00-F • CL-E-SH-00-C

Free area Square Feet Per Lineal Foot	Nominal duct width (Inches)	SP	0.012	0.025	0.047	0.074	0.105	0.142	0.187	0.237	0.294
0.064	2	CFM per Foot	26	38	51	64	76	89	101	114	127
		NC	-	-	18	25	30	35	39	42	47
		↑ Sill or Floor Side Wall	1-1-1 4-6-9	5-5-5 6-9-12	8-8-9 8-12-17	11-11-12 11-15-20	13-14-15 13-19-24	15-15-16 14-20-26	16-16-17 16-23-30	19-20-21 19-26-34	22-23-24 21-28-37
0.81	2.5	CFM per Foot	32	49	65	81	97	112	130	145	161
		NC	-	11	19	26	31	36	40	43	46
		↑ Sill or Floor Side Wall	2-2-2 4-6-9	6-6-6 7-11-15	9-9-10 9-13-18	11-12-13 12-17-22	14-15-17 15-20-26	17-18-19 16-23-30	10-20-22 20-27-34	22-23-24 22-29-37	24-24-24 25-33-40
0.98	3	CFM per Foot	39	59	78	97	117	136	156	175	195
		NC	-	11	19	27	32	37	41	44	47
		↑ Sill or Floor Side Wall	3-3-3 5-7-10	8-8-8 8-11-15	10-10-11 11-15-20	14-14-14 13-18-23	16-17-18 17-22-28	20-21-22 20-26-32	22-22-24 22-28-35	24-24-25 24-31-38	27-27-28 27-35-42
0.116	3.5	CFM per Foot	46	69	93	115	138	162	185	207	231
		NC	-	12	16	22	28	33	37	40	43
		↑ Sill or Floor Side Wall	3-3-3 5-7-10	8-8-8 9-12-16	12-12-12 12-16-20	15-15-16 15-20-25	18-19-20 18-23-28	20-21-22 20-26-32	23-24-25 29-29-36	25-26-27 25-32-39	29-29-29 29-36-43
0.133	4	CFM per Foot	53	79	107	133	159	186	212	239	266
		NC	-	12	19	27	31	36	41	43	46
		↑ Sill or Floor Side Wall	3-3-3 6-8-11	9-9-9 10-13-17	13-13-13 13-17-21	16-16-17 16-21-26	20-20-21 20-25-31	22-23-24 22-28-34	24-25-26 24-30-37	28-28-28 28-35-41	31-31-31 31-38-45
0.167	5	CFM per Foot	67	100	134	167	200	234	267	301	334
		NC	-	13	21	29	34	39	43	46	49
		↑ Sill or Floor Side Wall	4-4-4 8-11-14	10-10-10 11-15-19	14-14-14 15-19-24	18-18-18 19-23-28	21-21-22 21-26-32	24-24-25 24-30-36	26-27-28 26-32-39	30-30-30 29-36-42	32-32-32 33-39-46
0.203	6	CFM per Foot	81	122	162	203	243	284	324	365	405
		NC	-	14	22	30	35	40	44	47	51
		↑ Sill or Floor Side Wall	5-5-5 8-10-13	10-10-10 12-15-19	15-15-15 16-19-24	18-18-18 19-23-28	22-22-22 23-28-34	24-24-24 27-32-38	30-30-30 33-39-44	30-30-30 33-39-44	35-35-35 36-42-47
0.272	8	CFM per Foot	108	163	217	272	325	380	434	489	542
		NC	11	16	23	33	36	39	46	49	52
		↑ Sill or Floor Side Wall	6-6-6 9-12-15	11-11-11 14-17-21	16-16-16 17-22-26	19-19-19 21-25-30	23-23-24 24-30-35	25-25-25 28-33-39	29-29-29 30-35-42	31-31-31 33-30-44	36-36-37 37-43-48

Nominal Width	AK Factor per foot	
	Supply	Return
2	0.078	0.0663
2.5	0.084	0.0714
3	0.115	0.09775
3.5	0.131	0.11135
4	0.151	0.12835
5	0.187	0.15895
6	0.223	0.18955
8	0.297	0.25245

CFM-cubic feet per minute.

FPM-feet per minute velocity.

TP-total pressure - inches w.g.

T-throw in feet.

NC-Noise Criteria (values) based on 10 dB room absorption, re 10-12watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.

2. Throw value are based on a 4 foot section with a cooling Tof 20oF (11oC).

For other lengths, use the correction

3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

Performance Data

Aluminum Supply Grille 15° Deflection

Models: CL-E-00-F • CL-E-00-C

CL-E-SH-00-F • CL-E-SH-00-C

Free area Square Feet Per Lineal Foot	Nominal duct width (Inches)	SP	0.01	0.022	0.039	0.062	0.087	0.119	0.156	0.198	0.245
0.069	2	CFM per Foot	27	41	55	69	82	96	110	124	138
		NC	-	-	14	20	26	31	35	38	42
		↑ Sill or Floor Side Wall	2-2-2 4-6-9	6-6-6 6-9-12	8-8-9 8-12-17	11-12-13 11-16-22	13-14-16 13-19-25	15-17-19 15-21-28	18-20-22 18-25-32	21-22-23 21-28-36	22-23-24 22-30-39
0.89	2.5	CFM per Foot	35	53	70	88	106	123	141	158	176
		NC	-	-	15	21	27	32	36	39	42
		↑ Sill or Floor Side Wall	2-2-2 5-7-10	7-7-7 7-11-15	10-10-11 10-14-19	12-13-15 12-17-23	15-16-18 15-21-27	18-19-21 18-24-31	20-22-24 20-27-34	24-24-25 24-31-39	26-26-27 26-34-41
0.109	3	CFM per Foot	44	66	88	110	132	154	176	198	220
		NC	-	-	16	22	28	33	37	40	43
		↑ Sill or Floor Side Wall	3-3-3 5-7-10	8-8-8 9-12-16	12-12-12 12-16-20	15-15-16 15-20-25	18-19-20 18-23-28	20-21-22 20-26-32	23-24-25 23-29-36	25-26-27 25-32-39	29-29-29 29-36-43
0.127	3.5	CFM per Foot	49	75	111	126	151	175	201	226	253
		NC	-	-	16	22	28	33	37	40	43
		↑ Sill or Floor Side Wall	3-3-3 5-7-10	8-8-8 9-12-16	12-12-12 12-16-20	15-15-16 15-20-25	18-19-20 19-24-29	21-22-23 21-27-33	23-24-25 23-29-36	27-27-27 27-34-40	30-30-30 30-37-44
0.147	4	CFM per Foot	57	87	115	147	176	204	234	262	293
		NC	-	-	17	23	29	34	38	41	44
		↑ Sill or Floor Side Wall	3-3-3 6-8-11	9-9-9 10-13-17	13-13-13 13-17-21	16-16-17 16-21-26	20-20-21 20-25-31	22-23-24 22-28-34	24-25-26 24-30-37	28-28-28 28-35-41	31-31-31 31-38-45
0.186	5	CFM per Foot	74	111	149	186	222	260	297	334	372
		NC	-	11	19	24	30	35	39	42	45
		↑ Sill or Floor Side Wall	4-4-4 8-10-13	10-10-10 12-15-19	15-15-15 16-20-23	18-18-18 19-23-28	22-22-23 23-28-33	25-25-25 26-32-38	27-27-28 28-34-40	30-30-30 31-38-44	34-34-34 36-42-48
0.223	6	CFM per Foot	89	133	178	222	266	310	355	400	444
		NC	-	11	20	25	31	36	40	43	46
		↑ Sill or Floor Side Wall	5-5-5 9-11-14	10-10-10 13-16-20	15-15-15 16-20-24	19-19-19 20-24-29	23-23-24 24-29-34	25-25-25 28-33-39	29-29-29 30-35-40	31-31-31 34-40-45	36-36-37 38-44-49
0.3	8	CFM per Foot	120	179	240	300	358	419	479	537	598
		NC	-	13	22	28	33	37	43	46	49
		↑ Sill or Floor Side Wall	6-6-6 10-12-15	11-11-11 14-17-21	16-16-16 17-22-26	19-19-19 21-25-30	23-23-24 25-31-36	25-25-25 29-34-41	29-29-29 31-37-42	31-31-31 35-42-47	36-36-37 40-45-51

Nominal Width	AK Factor per foot	
	Supply	Return
2	0.078	0.0663
2.5	0.084	0.0714
3	0.115	0.09775
3.5	0.131	0.11135
4	0.151	0.12835
5	0.187	0.15895
6	0.223	0.18955
8	0.297	0.25245

CFM-cubic feet per minute.
 FPM-feet per minute velocity.
 TP-total pressure - inches w.g.
 T-throw in feet.
 NC-Noise Criteria (values) based on 10 dB room absorption, re 10-12 watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔTof 20°F (11°C). For other lengths, use the correction
3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

Performance Data

Aluminum Supply Grille 15° Deflection

Models: CL-E-15-F • CL-E-15-C

CL-E-SH-15-F • CL-E-SH-15-C

Free area Square Feet Per Lineal Foot	Nominal duct width (Inches)	SP	0.012	0.025	0.047	0.074	0.105	0.142	0.187	0.237	0.294
0.076	2	CFM per Foot	30	46	60	75	90	105	121	136	151
		NC	-	-	15	20	26	31	35	38	42
		↑ Sill or Floor Side Wall	1-1-1 4-6-8	5-5-5 6-9-13	9-9-9 9-13-17	11-12-13 11-16-22	13-14-16 13-19-25	15-17-19 15-21-28	18-20-22 18-25-32	21-22-23 21-28-36	22-23-24 22-30-39
0.1	2.5	CFM per Foot	40	60	80	100	120	140	160	180	200
		NC	-	11	19	27	32	36	40	44	47
		↑ Sill or Floor Side Wall	2-2-2 5-7-10	7-7-7 8-11-16	11-11-11 11-15-20	14-14-14 13-18-23	16-17-19 17-22-28	20-20-20 20-26-32	21-22-24 22-28-35	24-24-25 24-31-38	27-27-29 27-35-42
0.123	3	CFM per Foot	49	73	99	123	147	172	196	221	246
		NC	-	12	20	28	33	38	42	45	48
		↑ Sill or Floor Side Wall	3-3-3 6-9-12	8-8-8 10-13-17	13-13-13 13-17-22	16-16-17 15-20-25	19-20-21 19-24-30	22-22-23 22-28-34	24-25-26 25-31-38	27-27-27 28-36-41	29-29-29 29-37-44
0.146	3.5	CFM per Foot	58	87	116	145	173	203	231	260	289
		NC	-	13	21	29	34	39	43	46	49
		↑ Sill or Floor Side Wall	4-4-4 7-10-12	9-9-9 11-14-15	13-14-14 14-18-23	17-17-18 18-22-28	20-21-22 20-25-31	23-23-24 23-29-35	25-26-27 25-31-38	27-27-28 28-36-41	30-30-30 32-38-45
0.16	4	CFM per Foot	64	96	128	160	191	224	256	288	320
		NC	-	14	22	30	35	40	44	45	50
		↑ Sill or Floor Side Wall	4-4-4 8-11-14	9-9-9 11-15-19	14-14-14 15-19-24	18-18-18 19-23-28	21-21-22 21-26-32	24-24-25 24-30-35	26-27-28 26-32-39	30-30-30 29-36-42	32-32-32 33-39-45
0.21	5	CFM per Foot	84	126	168	210	252	294	336	378	42
		NC	-	15	23	31	36	41	45	48	51
		↑ Sill or Floor Side Wall	5-5-5 9-12-15	10-10-10 14-17-21	15-15-15 17-21-25	19-19-19 20-24-29	23-23-23 24-29-34	25-25-25 27-32-38	28-28-29 29-35-40	31-31-31 32-38-43	35-35-35 36-42-47
0.26	6	CFM per Foot	103	154	206	258	309	361	413	464	516
		NC	-	15	24	32	37	42	46	49	52
		↑ Sill or Floor Side Wall	6-6-6 9-12-15	11-11-11 14-17-21	16-16-16 17-22-26	19-19-19 21-25-30	23-23-24 24-30-35	25-25-25 28-33-39	29-29-29 30-35-42	31-31-31 33-30-44	36-36-37 37-43-48
0.302	8	CFM per Foot	139	209	278	350	418	488	557	627	697
		NC	13	17	25	34	39	44	48	52	54
		↑ Sill or Floor Side Wall	7-7-7 10-13-17	11-12-12 16-19-23	16-17-18 18-24-28	20-20-21 22-26-32	24-25-25 26-32-37	27-27-27 30-35-41	30-31-31 32-37-43	33-33-33 35-40-46	38-38-38 39-45-50

Nominal Width	AK Factor per foot	
	Supply	Return
2	0.078	0.0663
2.5	0.084	0.0714
3	0.115	0.09775
3.5	0.131	0.11135
4	0.151	0.12835
5	0.187	0.15895
6	0.223	0.18955
8	0.297	0.25245

CFM-cubic feet per minute.

FPM-feet per minute velocity.

TP-total pressure - inches w.g.

T-throw in feet.

NC-Noise Criteria (values) based on 10 dB room absorption, re 10-12watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.

2. Throw value are based on a 4 foot section with a cooling ToF 20oF (11oC).

For other lengths, use the correction

3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

Performance Data

Aluminum Supply Grille 30° Deflection

Models: CL-E-30-F • CL-E-30-C

CL-E-SH-30-F • CL-E-SH-30-C

Free area Square Feet Per Lineal Foot	Nominal duct width (Inches)	SP	0.012	0.025	0.047	0.074	0.105	0.142	0.187	0.237	0.294
0.064	2	CFM per Foot	27	40	54	67	80	94	107	120	134
		NC	-	12	20	27	32	37	41	44	47
		↑ Sill or Floor Side Wall	1-1-1 4-6-8	5-5-5 6-9-13	9-9-9 9-13-17	11-11-12 11-16-21	13-14-15 14-19-25	15-16-18 15-21-27	17-19-21 17-24-31	20-21-22 20-27-35	22-22-23 22-29-38
0.084	2.5	CFM per Foot	34	52	69	86	103	120	138	155	172
		NC	-	12	20	27	32	37	41	44	47
		↑ Sill or Floor Side Wall	2-2-2 4-6-9	6-6-6 8-11-15	10-10-11 10-14-19	12-13-14 13-18-23	15-16-18 16-21-27	18-19-20 18-24-31	20-21-23 21-28-35	23-24-25 23-30-38	25-25-25 26-34-41
0.104	3	CFM per Foot	42	63	84	105	126	147	168	189	210
		NC	-	12	20	28	33	38	42	45	48
		↑ Sill or Floor Side Wall	2-2-2 6-8-11	8-8-8 9-12-16	11-11-12 12-16-21	15-15-15 14-19-24	17-18-19 18-23-29	21-21-22 21-27-33	22-23-25 23-29-36	25-25-26 25-32-39	28-28-29 28-36-43
0.123	3.5	CFM per Foot	50	73	99	123	147	173	197	221	246
		NC	-	13	21	29	34	39	43	46	49
		↑ Sill or Floor Side Wall	3-3-3 6-9-12	9-9-9 10-13-17	13-13-13 13-17-22	16-16-17 15-20-25	19-20-21 19-24-30	22-22-23 22-28-34	24-25-26 25-31-38	27-27-27 28-36-41	30-30-30 30-37-44
0.144	4	CFM per Foot	57	86	115	144	172	201	230	259	288
		NC	-	13	21	29	34	39	43	46	50
		↑ Sill or Floor Side Wall	4-4-4 7-10-12	9-9-9 11-14-18	13-14-14 14-18-23	17-17-18 18-22-28	20-21-22 20-25-31	23-23-24 23-29-35	25-26-27 25-31-38	27-27-28 28-35-41	30-30-30 32-38-45
0.184	5	CFM per Foot	72	109	146	183	218	255	292	329	365
		NC	-	15	23	31	36	41	45	48	51
		↑ Sill or Floor Side Wall	5-5-5 9-12-15	10-10-10 14-17-21	15-15-15 17-21-25	19-19-19 20-24-29	23-23-23 24-29-34	25-25-25 27-32-38	28-28-29 29-35-40	31-31-31 32-38-43	35-35-35 36-42-47
0.223	6	CFM per Foot	89	133	178	222	267	311	356	400	445
		NC	-	15	24	32	37	42	46	49	52
		↑ Sill or Floor Side Wall	6-6-6 10-13-16	11-11-11 15-18-22	16-16-16 18-22-26	19-19-19 21-25-30	23-23-24 25-30-35	25-25-25 28-33-39	29-29-29 30-36-41	31-31-31 33-39-44	36-36-37 37-43-48
0.302	8	CFM per Foot	120	180	240	302	360	420	480	540	600
		NC	13	17	26	35	39	44	49	52	55
		↑ Sill or Floor Side Wall	7-7-7 10-13-17	11-12-12 16-19-23	16-17-18 18-24-28	20-20-21 22-26-32	24-25-25 26-32-37	27-27-27 30-35-41	30-31-31 32-37-43	33-33-33 35-40-46	38-38-38 39-45-50

CFM-cubic feet per minute.
 FPM-feet per minute velocity.
 TP-total pressure - inches w.g.
 T-throw in feet.
 NC-Noise Criteria (values) based on 10 dB room absorption, re 10-12 watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.
2. Throw values are based on a 4 foot section with a cooling ΔTof 20°F (11°C). For other lengths, use the correction
3. NC values are based on a 10 foot active section. For other lengths, use the correction factor table above.

Nominal Width	AK Factor per foot	
	Supply	Return
2	0.078	0.0663
2.5	0.084	0.0714
3	0.115	0.09775
3.5	0.131	0.11135
4	0.151	0.12835
5	0.187	0.15895
6	0.223	0.18955
8	0.297	0.25245