

## Performance Data

### Model 67FB45 Fixed Blade Return Grilles and Registers

#### Imperial Units

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 .003	.002 .014	.006 .031	.010 .055	.016 .086	.022 .124	.031 .168	.040 .220	.050 .278	.062 .344
6 x 6	8 x 4	0.20	0.23	CFM	20	40	60	80	100	120	140	160	180	200
	10 x 4			NC	-	-	-	-	-	19	24	28	32	36
8 x 6	10 x 5	0.28	0.30	CFM	28	56	84	112	140	168	196	224	252	280
	12 x 4			NC	-	-	-	-	15	20	25	29	33	37
10 x 6	12 x 5	0.35	0.37	CFM	35	70	105	140	175	210	245	280	315	350
	16 x 4			NC	-	-	-	-	16	21	26	30	34	38
8 x 8	14 x 5	0.38	0.40	CFM	38	76	114	152	190	228	266	304	342	380
				NC	-	-	-	-	17	22	27	31	35	39
12 x 6	18 x 4	0.42	0.45	CFM	42	84	126	168	210	252	294	336	378	420
				NC	-	-	-	-	18	23	27	32	36	40
12 x 8	16 x 6	0.58	0.59	CFM	58	116	174	232	290	348	406	464	522	580
	24 x 4			NC	-	-	-	-	19	24	28	33	37	41
10 x 10	14 x 7	0.61	0.62	CFM	61	122	183	244	305	366	427	488	549	610
	26 x 4			NC	-	-	-	-	19	24	29	34	37	41
18 x 6	14 x 8	0.65	0.67	CFM	65	130	195	260	325	390	455	520	585	650
	28 x 4			NC	-	-	-	15	20	25	30	34	38	41
12 x 10	16 x 8	0.74	0.74	CFM	74	148	222	296	370	444	518	592	666	740
	24 x 5			NC	-	-	-	15	20	25	30	35	39	42
12 x 12	14 x 10	0.90	0.89	CFM	90	180	270	360	450	540	630	720	810	900
	18 x 8			NC	-	-	-	16	21	26	31	36	39	42
14 x 14	16 x 12	1.24	1.22	CFM	124	248	372	496	620	744	868	992	1116	1240
	20 x 10			NC	-	-	-	16	21	26	31	36	40	43
18 x 12	16 x 14	1.37	1.34	CFM	137	274	411	548	685	822	959	1096	1233	1370
	22 x 10			NC	-	-	-	17	22	27	32	37	40	43
24 x 10	20 x 12	1.52	1.49	CFM	152	304	456	608	760	912	1064	1216	1368	1520
	30 x 8			NC	-	-	-	17	22	27	32	38	41	44
16 x 16	18 x 14	1.64	1.58	CFM	164	328	492	656	820	984	1148	1312	1476	1640
	22 x 12			NC	-	-	-	18	23	28	33	38	41	44
24 x 12	18 x 16	1.85	1.78	CFM	185	370	555	740	925	1110	1295	1480	1665	1850
	20 x 14			NC	-	-	-	18	23	28	33	38	41	45
18 x 18	20 x 16	2.10	2.01	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100
	24 x 14			NC	-	-	-	18	23	29	34	39	42	45
30 x 12	20 x 18	2.32	2.23	CFM	232	464	696	928	1160	1392	1624	1856	2088	2320
	22 x 16			NC	-	-	-	19	24	29	34	39	42	46
20 x 20	24 x 18	2.61	2.48	CFM	261	522	783	1044	1305	1566	1827	2088	2349	2610
	26 x 16			NC	-	-	-	19	24	30	35	40	43	46
22 x 22	24 x 20	3.17	3.00	CFM	317	634	951	1268	1585	1902	2219	2536	2853	3170
	26 x 18			NC	-	-	-	20	25	31	35	40	43	47
30 x 18	24 x 22	3.54	3.34	CFM	354	708	1062	1416	1770	2124	2478	2832	3186	3540
	34 x 16			NC	-	-	-	20	25	31	36	41	44	48
24 x 24	26 x 22	3.79	3.56	CFM	379	758	1137	1516	1895	2274	2653	3032	3411	3790
	28 x 20			NC	-	-	-	20	25	31	36	41	44	48
36 x 18	32 x 20	4.27	4.01	CFM	427	854	1281	1708	2135	2562	2989	3416	3843	4270
	40 x 16			NC	-	-	-	21	26	32	37	42	45	49
26 x 26	28 x 24	4.47	4.19	CFM	447	894	1341	1788	2235	2682	3129	3576	4023	4470
	48 x 14			NC	-	-	-	21	26	32	37	42	45	49
30 x 24	28 x 26	4.77	4.46	CFM	477	954	1431	1908	2385	2862	3339	3816	4293	4770
	32 x 22			NC	-	-	15	22	27	33	38	42	46	50
28 x 28	30 x 26	5.20	4.85	CFM	520	1040	1560	2080	2600	3120	3640	4160	4680	5200
	36 x 22			NC	-	-	15	22	27	33	38	43	46	50
36 x 24	30 x 28	5.74	5.35	CFM	574	1148	1722	2296	2870	3444	4018	4592	5166	5740
	40 x 22			NC	-	-	15	22	28	34	38	43	47	51
30 x 30	34 x 26	5.99	5.57	CFM	599	1198	1797	2396	2995	3594	4193	4792	5391	5990
	38 x 24			NC	-	-	15	22	28	34	39	43	47	51

HOSPITAL / CLEANROOM DIFFUSERS

## Performance Data

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#### Imperial Units

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 .003	.002 .014	.006 .031	.010 .055	.016 .086	.022 .124	.031 .168	.040 .220	.050 .278	.062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				NC	-	-	16	23	29	35	39	44	48	52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				NC	-	-	17	23	29	35	40	44	48	52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				NC	-	-	17	24	29	36	41	45	49	53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				NC	-	-	18	24	30	36	41	45	49	53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				NC	-	-	18	24	30	36	42	45	50	54
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				NC	-	-	19	25	31	37	42	46	50	54
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				NC	-	-	19	25	31	37	42	46	50	54
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				NC	-	-	20	26	32	38	43	47	51	55
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				NC	-	-	20	26	32	38	43	47	51	55

- 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 10 dB room absorption, re 10<sup>-12</sup> watts.

Core Velocity is in feet per minute.

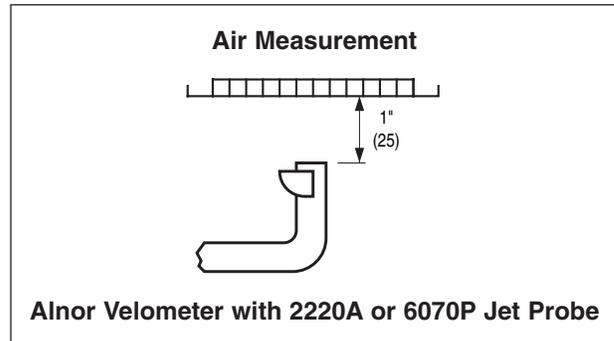
#### Performance Notes:

1. 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.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2023.



#### Airflow Measurements

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

## Performance Data

### Model 67FB45 Fixed Blade Return Grilles and Registers

#### Metric Units

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (sq. m)	Ak Factor	Core Velocity VP Neg. SP	0.51 0.2 0.7	1.01 0.5 3.5	1.52 1.5 7.7	2.03 2.5 14	2.54 4.0 21	3.05 5.5 31	3.55 7.7 42	4.06 10 55	4.57 12 69	5.08 15 86
152 x 152	203 x 102	.019	21	L/S	9	19	28	38	47	57	66	76	85	94
	254 x 102			NC	-	-	-	-	-	19	24	28	32	36
203 x 152	254 x 127	.026	28	L/S	13	26	40	53	66	79	92	106	119	132
	305 x 102			NC	-	-	-	-	15	20	25	29	33	37
254 x 152	305 x 127	.033	34	L/S	17	33	50	66	83	99	116	132	149	165
	406 x 102			NC	-	-	-	-	16	21	26	30	34	38
203 x 203	356 x 127	.035	37	L/S	18	36	54	72	90	108	126	143	161	179
				NC	-	-	-	-	17	22	27	31	35	39
305 x 152	457 x 102	.039	42	L/S	20	40	59	79	99	119	139	159	178	198
				NC	-	-	-	-	18	23	27	32	36	40
305 x 203	406 x 152	.054	55	L/S	27	55	82	109	137	164	192	219	246	274
	610 x 102			NC	-	-	-	-	19	24	28	33	37	41
254 x 254	356 x 178	.057	58	L/S	29	58	86	115	144	173	202	230	259	288
	660 x 102			NC	-	-	-	-	19	24	29	34	37	41
457 x 152	356 x 203	.060	62	L/S	31	61	92	123	153	184	215	245	276	307
	711 x 102			NC	-	-	-	15	20	25	30	34	38	41
305 x 254	406 x 203	.069	69	L/S	35	70	105	140	175	210	244	279	314	349
	610 x 127			NC	-	-	-	15	20	25	30	35	39	42
305 x 305	356 x 254	.084	83	L/S	42	85	127	170	212	255	297	340	382	425
	610 x 152			NC	-	-	-	16	21	26	31	36	39	42
356 x 356	406 x 305	.115	113	L/S	59	117	176	234	293	351	410	468	527	585
	610 x 203			NC	-	-	-	16	21	26	31	36	40	43
457 x 305	406 x 356	.127	125	L/S	65	129	194	259	323	388	453	517	582	647
	711 x 203			NC	-	-	-	17	22	27	32	37	40	43
610 x 254	508 x 305	.141	139	L/S	72	143	215	287	359	430	502	574	646	717
	762 x 203			NC	-	-	-	17	22	27	32	38	41	44
406 x 406	457 x 356	.152	147	L/S	77	155	232	310	387	464	542	619	697	774
	762 x 203			NC	-	-	-	18	23	28	33	38	41	44
610 x 305	457 x 406	.172	165	L/S	87	175	262	349	437	524	611	698	786	873
	762 x 254			NC	-	-	-	18	23	28	33	38	41	45
457 x 457	508 x 406	.195	187	L/S	99	198	297	396	495	595	694	793	892	991
	711 x 305			NC	-	-	-	18	23	29	34	39	42	45
762 x 305	508 x 457	.216	207	L/S	109	219	328	438	547	657	766	876	985	1095
	660 x 356			NC	-	-	-	19	24	29	34	39	42	46
508 x 508	610 x 457	.242	231	L/S	123	246	369	493	616	739	862	985	1108	1232
	762 x 356			NC	-	-	-	19	24	30	35	40	43	46
559 x 559	610 x 508	.294	279	L/S	150	299	449	598	748	898	1047	1197	1346	1496
	762 x 406			NC	-	-	-	20	25	31	35	40	43	47
762 x 457	610 x 559	.329	310	L/S	167	334	501	668	835	1002	1169	1336	1503	1671
	1016 x 356			NC	-	-	-	20	25	31	36	41	44	48
610 x 610	660 x 559	.352	331	L/S	179	358	537	715	894	1073	1252	1431	1610	1789
	813 x 457			NC	-	-	-	20	25	31	36	41	44	48
914 x 457	813 x 508	.397	373	L/S	202	403	605	806	1008	1209	1411	1612	1814	2015
	1168 x 356			NC	-	-	-	21	26	32	37	42	45	49
660 x 660	711 x 610	.415	390	L/S	211	422	633	844	1055	1266	1477	1688	1898	2109
	1219 x 356			NC	-	-	-	21	26	32	37	42	45	49
762 x 610	711 x 660	.443	415	L/S	225	450	675	900	1125	1351	1576	1801	2026	2251
	914 x 457			NC	-	-	15	22	27	33	38	42	46	50
711 x 711	762 x 660	.483	451	L/S	245	491	736	982	1227	1472	1718	1963	2208	2454
	1016 x 508			NC	-	-	15	22	27	33	38	43	46	50
914 x 610	762 x 711	.533	497	L/S	271	542	813	1083	1354	1625	1896	2167	2438	2709
	1118 x 508			NC	-	-	15	22	28	34	38	43	47	51
762 x 762	864 x 660	.556	518	L/S	283	565	848	1131	1413	1696	1979	2261	2544	2827
	1219 x 508			NC	-	-	15	22	28	34	39	43	47	51

## Performance Data

### Model 67FB45 Fixed Blade Return Grilles and Registers

#### Metric Units

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (sq. m)	Ak Factor	Core Velocity VP Neg. SP	0.51 0.2 0.7	1.01 0.5 3.5	1.52 1.5 7.7	2.03 2.5 14	2.54 4.0 21	3.05 5.5 31	3.55 7.7 42	4.06 10 55	4.57 12 69	5.08 15 86
<b>813 x 813</b>	914 x 762 1168 x 559 965 x 711	.635	589	L/S NC	<b>323</b> -	<b>646</b> -	<b>968</b> 16	<b>1291</b> 23	<b>1614</b> 29	<b>1937</b> 35	<b>2259</b> 39	<b>2582</b> 44	<b>2905</b> 48	<b>3228</b> 52
<b>1219 x 610</b>	864 x 864 965 x 762 914 x 813 1219 x 711	.714	663	L/S NC	<b>363</b> -	<b>726</b> -	<b>1089</b> 17	<b>1452</b> 23	<b>1814</b> 29	<b>2177</b> 35	<b>2540</b> 40	<b>2903</b> 44	<b>3266</b> 48	<b>3629</b> 52
<b>914 x 914</b>	965 x 864 1168 x 711 1067 x 762 1219 x 660	.807	746	L/S NC	<b>410</b> -	<b>820</b> -	<b>1230</b> 17	<b>1640</b> 24	<b>2050</b> 29	<b>2460</b> 36	<b>2871</b> 41	<b>3281</b> 45	<b>3691</b> 49	<b>4101</b> 53
<b>965 x 965</b>	1067 x 864 1219 x 762 1118 x 864	.901	831	L/S NC	<b>458</b> -	<b>915</b> -	<b>1373</b> 18	<b>1831</b> 24	<b>2289</b> 30	<b>2746</b> 36	<b>3204</b> 41	<b>3662</b> 45	<b>4120</b> 49	<b>4577</b> 53
<b>1016 x 1016</b>	1067 x 914 1219 x 813 1168 x 864	1.00	920	L/S NC	<b>508</b> -	<b>1016</b> -	<b>1525</b> 18	<b>2033</b> 24	<b>2541</b> 30	<b>3049</b> 36	<b>3558</b> 42	<b>4066</b> 45	<b>4574</b> 50	<b>5082</b> 54
<b>1067 x 1067</b>	1118 x 1016 1219 x 914 1168 x 965	1.10	1015	L/S NC	<b>561</b> -	<b>1122</b> -	<b>1683</b> 19	<b>2244</b> 25	<b>2805</b> 31	<b>3367</b> 37	<b>3928</b> 42	<b>4489</b> 46	<b>5050</b> 50	<b>5611</b> 54
<b>1118 x 1118</b>	1168 x 1067	1.21	1114	L/S NC	<b>617</b> -	<b>1234</b> -	<b>1850</b> 19	<b>2467</b> 25	<b>3084</b> 31	<b>3701</b> 37	<b>4317</b> 42	<b>4934</b> 46	<b>5551</b> 50	<b>6168</b> 54
<b>1168 x 1168</b>		1.33	1218	L/S NC	<b>675</b> -	<b>1350</b> -	<b>2024</b> 20	<b>2699</b> 26	<b>3374</b> 32	<b>4049</b> 38	<b>4724</b> 43	<b>5399</b> 47	<b>6073</b> 51	<b>6748</b> 55
<b>1219 x 1219</b>		1.45	1326	L/S NC	<b>736</b> -	<b>1471</b> -	<b>2207</b> 20	<b>2943</b> 26	<b>3678</b> 32	<b>4414</b> 38	<b>5150</b> 43	<b>5886</b> 47	<b>6621</b> 51	<b>7357</b> 55

**L/S** - litres per second

**VP** - velocity pressure - Pa

**Neg. SP** - negative static pressure - Pa

**NC** - Noise Criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts.

Core Velocity is in meters per second.

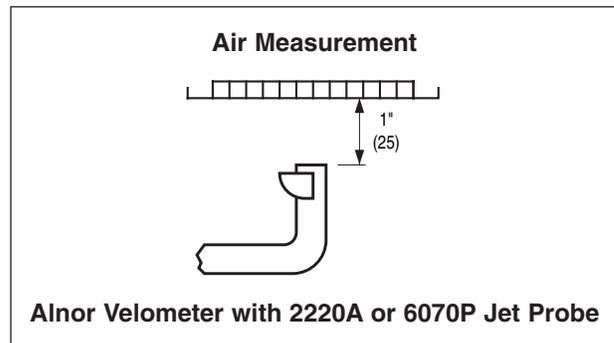
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- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in m/s).
- Calculate the airflow (L/S) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (L/S) = Average velocity (V<sub>k</sub>) x Ak.