

ENGINEERING DATA

BASEBOARD DIFFUSERS - 15"

Face Velocity		300	400	500	600	700	800	900	1000
15" Ak.161	CFM	48	64	80	96	112	128	144	161
	Ps	0.004	0.008	0.016	0.02	0.028	0.032	0.044	0.052
Throw	50	6	7.5	10	11	13	15.5	17	19.5
Spread	FPM	6	7	10.5	12.5	14.5	16	18	20
Throw	100	3	4	5	6	6.5	8	8.5	10
Spread	FPM	3	3.5	5	6	7	8	9	10
Throw	150	2	2.5	3	4	4.5	5	6	6.5
Spread	FPM	2	2.5	3.5	4	5	5.5	6	6.5

BASEBOARD DIFFUSERS - 18"

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.012	0.024	0.032	0.048	0.068	0.088	0.108	0.132
18" Ak .263	CFM	79	105	131	157	183	210	237	263
	Spread	5	5.5	6.5	8	9	10.5	11.5	13
	Throw	5.5	6	6.5	8	9.5	11	12	13.5

BASEBOARD DIFFUSERS - 24"

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.028	0.04	0.056	0.076	0.096	0.128	0.152	0.192
24" Ak .36	CFM	139	185	231	277	323	370	416	462
	Spread	5	5.5	6.5	8	9	10.5	11.5	13
	Throw	5.5	6	6.5	8	9.5	11	12	13.5

BASEBOARD RETURNS - 1/3" FINS

Face Velocity		300	400	500	600	700
10 x 6 Ak .392	CFM	118	157	196	235	274
	Pt	0.013	0.023	0.037	0.052	0.072
12 x 6 Ak .46	CFM	138	184	230	276	322
	Pt	0.013	0.024	0.037	0.053	0.069
14 x 6 Ak .53	CFM	159	212	265	318	371
	Pt	0.013	0.024	0.036	0.052	0.067
14 x 8 Ak .725	CFM	218	290	363	435	508
	Pt	0.013	0.023	0.035	0.049	0.066
16 x 8 Ak .84	CFM	252	336	420	504	588
	Pt	0.012	0.021	0.033	0.046	0.065
24 x 6 Ak .95	CFM	285	380	475	570	665
	Pt	0.012	0.023	0.033	0.047	0.065
24 x 8 Ak 1.22	CFM	366	488	610	732	854
	Pt	0.01	0.02	0.03	0.042	0.058
30 x 6 Ak 1.12	CFM	336	448	560	672	784
	Pt	0.012	0.022	0.032	0.042	0.062
30 x 8 Ak 1.56	CFM	468	624	780	936	1092
	Pt	0.011	0.019	0.03	0.043	0.059
30 x 10 Ak 1.36	CFM	579	772	965	1158	1351
	Pt	0.012	0.016	0.028	0.04	0.056

FLOOR REGISTERS

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.004	0.008	0.016	0.024	0.028	0.04	0.052	0.06
2 x 10 Ak 0.094	CFM	28	38	47	56	66	75	85	94
	Spread	3	4	5	6	7	8	9	10
	Throw	4	5	6	7	8	9	10	11
2 x 12 Ak 0.11	CFM	33	44	55	66	77	88	99	110
	Spread	4	6	6	7	8	9	10	11
	Throw	5	6	7	8	9	10	11	12
2 x 14 Ak 0.125	CFM	38	50	63	75	88	100	113	125
	Spread	4	6	7	7	8	10	11	12
	Throw	5	7	8	9	10	11	12	13
4 x 8 Ak 0.15	CFM	45	60	75	90	105	120	135	150
	Spread	4	5	7	8	9	10	11	13
	Throw	6	7	8	10	11	12	13	14
4 x 10 Ak 0.17	CFM	51	68	85	102	119	136	153	170
	Spread	5	6	7	8	10	11	13	15
	Throw	6	7	9	11	12	13	15	17
4 x 12 Ak 0.2	CFM	60	80	100	120	140	160	180	200
	Spread	6	7	9	11	12	14	15	17
	Throw	5	6	8	9	10	11	13	14
4 x 14 Ak .230	CFM	69	92	115	138	161	184	207	230
	Spread	7	8	10	11	13	16	17	19
	Throw	6	7	8	10	11	13	14	15
6 x 10 Ak 0.247	CFM	74	99	124	148	173	198	222	247
	Spread	6	8	9	12	13	15	17	19
	Throw	5	7	8	10	11	13	14	15
6 x 12 Ak 0.285	CFM	86	114	143	171	200	228	257	285
	Spread	7	9	10	13	15	17	19	22
	Throw	6	8	9	11	12	15	16	18
6 x 14 Ak 0.33	CFM	101	134	168	201	235	268	302	335
	Spread	8	9	11	13	16	18	20	22
	Throw	6	8	10	12	13	15	17	18

TOE SPACE GRILLES

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.006	0.01	0.016	0.022	0.031	0.04	0.05	0.062
2 x 10 Ak .094	CFM	28	38	47	56	66	75	85	94
	Spread	3	4	5	6	7	8	9	10
	Throw	4	5	6	7	8	9	10	11
2 x 12 Ak .11	CFM	33	44	55	66	77	88	99	110
	Spread	4	6	6	7	8	9	10	11
	Throw	5	6	7	8	9	10	11	12
2 x 14 Ak .125	CFM	38	50	63	75	88	100	113	125
	Spread	4	6	7	7	8	10	11	12
	Throw	5	7	8	9	10	11	12	13

ENGINEERING DATA

TOE SPACE GRILLES

Face Velocity		300	400	500	600	700	800	900	1000
4 x 12 Ak .2	CFM	60	80	100	120	140	160	180	200
	Spread	6	7	9	11	12	14	15	17
	Throw	5	6	8	9	10	11	13	14

FLOOR RETURNS

Face Velocity		400	500	600	700	800	900	1000
4 x 10 Ak .265	CFM	106	133	159	186	212	239	265
	Pt	0.012	0.015	0.023	0.031	0.041	0.051	0.069
4 x 12 Ak .301	CFM	120	151	181	211	241	271	301
	Pt	0.012	0.015	0.022	0.031	0.04	0.051	0.069
4 x 14 Ak .337	CFM	135	169	202	236	270	303	337
	Pt	0.011	0.014	0.021	0.031	0.039	0.05	0.067
4 x 24 Ak .591	CFM	236	296	355	414	473	532	591
	Pt	0.01	0.014	0.018	0.028	0.037	0.047	0.057
4 x 30 Ak .74	CFM	296	370	444	518	592	666	740
	Pt	0.008	0.014	0.017	0.027	0.036	0.043	0.054
6 x 10 Ak .37	CFM	148	185	222	259	296	333	370
	Pt	0.011	0.014	0.02	0.031	0.039	0.049	0.066
6 x 12 Ak .455	CFM	182	228	273	319	364	410	455
	Pt	0.01	0.014	0.02	0.03	0.039	0.048	0.064
6 x 14 Ak .54	CFM	216	270	324	378	432	486	540
	Pt	0.01	0.014	0.019	0.029	0.037	0.047	0.062
6 x 20 Ak .74	CFM	296	370	444	518	592	666	740
	Ps	0.008	0.014	0.017	0.027	0.036	0.043	0.054
6 x 24 Ak .86	CFM	344	430	516	602	688	774	860
	Pt	0.007	0.013	0.017	0.024	0.033	0.041	0.052
6 x 30 Ak .103	CFM	420	525	630	735	840	945	1050
	Pt	0.007	0.013	0.017	0.023	0.032	0.041	0.048
8 x 10 Ak 0.505	CFM	202	253	303	354	404	455	505
	Pt	0.01	0.014	0.019	0.029	0.037	0.047	0.063
8 x 12 Ak .591	CFM	236	296	355	414	473	532	591
	Pt	0.01	0.014	0.018	0.028	0.037	0.047	0.057
8 x 14 Ak .71	CFM	284	355	426	497	568	639	710
	Pt	0.008	0.014	0.017	0.027	0.036	0.044	0.058
8 x 16 Ak 0.78	CFM	312	390	468	546	624	702	780
	Ps	0.008	0.014	0.017	0.025	0.033	0.041	0.052
8 x 20 Ak .923	CFM	369	462	554	646	738	831	923
	Ps	0.007	0.013	0.017	0.023	0.033	0.041	0.05
8 x 24 Ak 1.11	CFM	452	565	678	791	904	1017	1130
	Pt	0.007	0.013	0.017	0.023	0.031	0.04	0.048
8 x 30 Ak 1.37	CFM	548	685	822	959	1096	1233	1370
	Pt	0.007	0.012	0.017	0.023	0.029	0.036	0.046
10 x 10 Ak .658	CFM	263	329	395	461	526	592	658
	Pt	0.009	0.014	0.018	0.028	0.037	0.046	0.06
10 x 12 Ak .74	CFM	296	370	444	518	592	666	740
	Pt	0.008	0.014	0.017	0.027	0.036	0.043	0.054

FLOOR RETURNS

Face Velocity		400	500	600	700	800	900	1000
10 x 14 Ak .802	CFM	321	401	481	561	642	722	802
	Pt	0.007	0.013	0.017	0.024	0.033	0.041	0.052
10 x 20 Ak 1.22	CFM	488	610	732	854	976	1098	1220
	Pt	0.007	0.012	0.017	0.023	0.03	0.038	0.047
10 x 24 Ak 1.37	CFM	548	685	822	959	1096	1233	1370
	Pt	0.007	0.012	0.017	0.023	0.029	0.036	0.046
10 x 30 Ak 1.71	CFM	684	855	1026	1197	1368	1539	1710
	Pt	0.007	0.01	0.015	0.022	0.028	0.035	0.044
12 x 12 Ak 0.86	CFM	344	430	516	602	688	774	860
	Pt	0.007	0.013	0.017	0.024	0.033	0.041	0.052
12 x 14 Ak .98	CFM	392	490	588	686	784	882	980
	Pt	0.007	0.013	0.017	0.023	0.032	0.041	0.052
12 x 20 Ak 1.37	CFM	548	685	822	959	1096	1233	1370
	Pt	0.007	0.012	0.017	0.023	0.029	0.036	0.046
12 x 24 Ak 1.64	CFM	672	840	1008	1176	1344	1512	1680
	Pt	0.007	0.011	0.016	0.023	0.028	0.035	0.044
12 x 30 Ak 2.12	CFM	848	1060	1272	1484	1696	1908	2120
	Pt	0.007	0.01	0.015	0.021	0.026	0.033	0.04
14 x 14 Ak 1.18	CFM	472	590	708	826	944	1062	1180
	Pt	0.007	0.012	0.017	0.023	0.031	0.039	0.048
14 x 16 Ak 1.28	CFM	512	640	768	896	1024	1152	1280
	Pt	0.007	0.012	0.017	0.023	0.029	0.036	0.046
14 x 24 Ak 1.96	CFM	784	980	1176	1372	1568	1764	1960
	Pt	0.007	0.01	0.015	0.021	0.026	0.033	0.04
14 x 30 Ak 2.35	CFM	988	1235	1482	1729	1976	2223	2470
	Pt	0.007	0.01	0.014	0.02	0.025	0.031	0.039
16 x 30 Ak 2.65	CFM	1060	1325	1590	1855	2120	2385	2650
	Pt	0.006	0.01	0.014	0.019	0.024	0.03	0.038
20 x 30 Ak 3.55	CFM	1420	1775	2130	2485	2840	3195	3550
	Pt	0.006	0.009	0.012	0.017	0.023	0.028	0.035
24 x 30 Ak 4.45	CFM	1780	2225	2670	3115	3560	4005	4450
	Pt	0.006	0.009	0.012	0.017	0.022	0.028	0.035

ENGINEERING DATA

ROUND CEILING DIFFUSERS

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.008	0.012	0.016	0.024	0.032	0.044	0.048	0.064
6" Neck Ak .137	CFM	41	55	69	83	96	110	123	137
	Throw	3	4	5	5	6	6	6	7
8" Neck Ak .23	CFM	69	92	115	138	161	184	207	230
	Throw	3	5	6	6	7	7	7	8
10" Neck Ak .345	CFM	104	138	173	207	242	276	311	345
	Throw	4	6	6	7	7	8	8	9
12" Neck Ak .505	CFM	152	202	253	303	354	404	455	505
	Throw	4	6	7	8	9	9	10	10

WALL RETURNS - 1/3" FINS

Face Velocity		300	400	500	600
6 x 6 Ak .169	CFM	51	68	85	101
	Ps	0.01	0.018	0.029	0.042
6 x 14 Ak .397	CFM	119	159	199	238
	Ps	0.01	0.018	0.029	0.041
8 x 8 Ak .3	CFM	90	120	150	180
	Ps	0.012	0.018	0.028	0.04
10 x 4 Ak .19	CFM	57	76	95	114
	Ps	0.012	0.02	0.028	0.04
10 x 6 Ak .29	CFM	87	116	145	174
	Ps	0.012	0.02	0.028	0.04
10 x 8 Ak .379	CFM	114	152	190	227
	Ps	0.012	0.02	0.028	0.04
10 x 10 Ak .491	CFM	147	196	246	295
	Ps	0.012	0.02	0.028	0.04
12 x 4 Ak .225	CFM	68	90	113	135
	Ps	0.01	0.018	0.029	0.041
12 x 6 Ak .34	CFM	102	136	170	204
	Ps	0.012	0.02	0.028	0.04
12 x 8 Ak .452	CFM	136	181	226	271
	Ps	0.012	0.02	0.028	0.04
12 x 10 Ak .57	CFM	171	228	285	342
	Ps	0.012	0.02	0.028	0.04
12 x 12 Ak .687	CFM	206	275	344	412
	Ps	0.012	0.02	0.028	0.044
12 x 24 Ak 1.38	CFM	414	552	690	828
	Ps	0.012	0.02	0.028	0.042
14 x 4 Ak .263	CFM	79	105	132	158
	Ps	0.012	0.02	0.028	0.044
14 x 6 Ak .397	CFM	119	159	199	238
	Ps	0.01	0.018	0.029	0.041
14 x 8 Ak .531	CFM	159	212	226	271
	Ps	0.012	0.02	0.028	0.04
14 x 10 Ak .661	CFM	198	265	331	397
	Ps	0.01	0.018	0.029	0.041

WALL RETURNS - 1/3" FINS

Face Velocity		300	400	500	600
14 x 12 Ak .805	CFM	242	322	403	483
	Ps	0.012	0.02	0.028	0.043
14 x 14 Ak .930	CFM	279	372	465	558
	Ps	0.01	0.018	0.029	0.041
14 x 20 Ak 1.34	CFM	402	536	670	804
	Ps	0.012	0.016	0.028	0.044
14 x 24 Ak 1.63	CFM	489	652	815	978
	Ps	0.012	0.016	0.028	0.044
16 x 8 Ak .604	CFM	181	242	302	362
	Ps	0.01	0.018	0.029	0.041
16 x 12 Ak .911	CFM	273	364	455	547
	Ps	0.01	0.018	0.029	0.041
16 x 14 Ak 1.065	CFM	320	426	533	639
	Ps	0.01	0.018	0.029	0.041
16 x 16 Ak 1.23	CFM	369	492	615	738
	Ps	0.012	0.016	0.028	0.04
16 x 20 Ak 1.374	CFM	412	550	687	825
	Ps	0.01	0.018	0.029	0.041
18 x 16 Ak 1.38	CFM	414	552	690	828
	Ps	0.012	0.02	0.028	0.042
18 x 18 Ak 1.548	CFM	465	619	774	929
	Ps	0.01	0.018	0.029	0.041
20 x 6 Ak .556	CFM	170	226	283	339
	Ps	0.01	0.018	0.029	0.041
20 x 8 Ak .750	CFM	220	275	330	385
	Ps	0.018	0.032	0.051	0.07
20 x 10 Ak .949	CFM	285	380	475	570
	Ps	0.01	0.018	0.029	0.041
20 x 12 Ak 1.115	CFM	345	460	575	690
	Ps	0.01	0.018	0.029	0.041
20 x 14 Ak 1.34	CFM	402	536	670	804
	Ps	0.012	0.016	0.028	0.044
20 x 16 Ak 1.543	CFM	463	617	772	926
	Ps	0.012	0.016	0.028	0.04

WALL RETURNS - 1/3" FINS

Face Velocity		300	400	500	600
20 x 20 Ak 1.932	CFM	580	773	966	1159
	Ps	0.012	0.016	0.028	0.04
24 x 4 Ak .452	CFM	136	181	226	271
	Ps	0.012	0.02	0.028	0.04
24 x 6 Ak .687	CFM	206	275	344	412
	Ps	0.012	0.02	0.028	0.044
24 x 8 Ak .921	CFM	276	368	461	553
	Ps	0.012	0.016	0.028	0.04
24 x 10 Ak 1.15	CFM	345	460	575	690
	Ps	0.01	0.018	0.029	0.041
24 x 12 Ak 1.38	CFM	414	552	690	828
	Ps	0.012	0.02	0.028	0.042
24 x 14 Ak 1.63	CFM	489	652	815	978
	Ps	0.012	0.016	0.028	0.044
24 x 16 Ak 1.84	CFM	552	736	920	1104
	Ps	0.01	0.018	0.028	0.042
24 x 18 Ak 2.08	CFM	624	832	1040	1248
	Ps	0.012	0.02	0.028	0.04
24 x 20 Ak 2.318	CFM	695	927	1159	1391
	Ps	0.012	0.02	0.028	0.04
24 x 24 Ak 2.78	CFM	834	1112	1390	1668
	Ps	0.012	0.019	0.028	0.04
24 x 30 Ak 3.49	CFM	1047	1396	1746	2094
	Ps	0.012	0.019	0.028	0.04
30 x 4 Ak .57	CFM	171	228	285	342
	Ps	0.012	0.02	0.028	0.04

WALL RETURNS - 1/3" FINS

Face Velocity		300	400	500	600
30 x 6 Ak .857	CFM	257	343	429	514
	PS	0.012	0.016	0.028	0.04
30 x 8 Ak 1.15	CFM	345	460	575	690
	PS	0.01	0.018	0.029	0.041
30 x 10 Ak 1.42	CFM	426	568	710	852
	PS	0.011	0.02	0.028	0.04
30 x 12 Ak 1.73	CFM	519	692	865	1038
	Ps	0.012	0.016	0.028	0.044
30 x 14 Ak 2.02	CFM	606	808	1010	1212
	Ps	0.012	0.016	0.028	0.044
30 x 16 Ak 2.318	CFM	695	927	1159	1391
	Ps	0.012	0.02	0.028	0.04
30 x 20 Ak 2.89	CFM	867	1156	1445	1734
	Ps	0.012	0.02	0.028	0.044
30 x 24 Ak 3.49	CFM	1047	1396	1746	2094
	Ps	0.012	0.019	0.028	0.04
30 x 30 Ak 4.37	CFM	1311	1748	2185	2622
	Ps	0.01	0.019	0.028	0.04
36 x 6 Ak 1.04	CFM	312	416	520	624
	Ps	0.012	.016	0.028	0.044
36 x 8 Ak 1.38	CFM	414	552	690	828
	Ps	0.012	0.02	0.028	0.042

WALL RETURNS - 1/2" FINS

Face Velocity		300	400	500	600
8 x 6 Ak .23	CFM	69	92	115	138
	Ps	0.02	0.036	0.052	0.08
12 x 6 Ak .34	CFM	102	136	170	204
	Ps	0.012	0.02	0.028	0.04
12 x 12 Ak .67	CFM	201	268	335	402
	Ps	0.02	0.032	0.052	0.072
12 x 24 Ak 1.3	CFM	390	520	650	780
	Ps	0.02	0.032	0.052	0.072
14 x 6 Ak .397	CFM	119	159	199	238
	Ps	0.01	0.018	0.029	0.041
14 x 8 Ak .531	CFM	159	212	226	271
	Ps	0.012	0.02	0.028	0.04
14 x 14 Ak .890	CFM	267	357	446	535
	Ps	0.019	0.034	0.053	0.075
14 x 20 Ak 1.28	CFM	384	512	640	768
	Ps	0.02	0.032	0.052	0.072

WALL RETURNS - 1/2" FINS

Face Velocity		300	400	500	600
16 x 8 Ak .62	CFM	186	248	310	372
	Ps	0.02	0.032	0.052	0.076
16 x 10 Ak .74	CFM	222	296	370	444
	Ps	0.02	0.032	0.052	0.072
16 x 16 Ak 1.160	CFM	348	464	580	696
	Ps	0.019	0.033	0.052	0.074
16 x 20 Ak 1.270	CFM	380	507	634	760
	Ps	0.019	0.033	0.052	0.074
18 x 14 Ak 1.14	CFM	343	457	571	685
	Ps	0.019	0.033	0.052	0.074
18 x 18 Ak 1.460	CFM	439	585	732	878
	Ps	0.019	0.033	0.052	0.073
20 x 10 Ak .92	CFM	276	368	460	552
	Ps	0.02	0.032	0.052	0.072
20 x 14 Ak 1.28	CFM	384	512	640	768
	Ps	0.02	0.032	0.052	0.072

ENGINEERING DATA

WALL RETURNS - 1/2" FINS

Face Velocity		300	400	500	600
20 x 16 Ak 1.543	CFM	463	617	772	926
	Ps	0.012	0.016	0.028	0.04
20 x 20 Ak .181	CFM	543	724	905	1086
	Ps	0.016	0.032	0.052	0.072
24 x 6 Ak .67	CFM	201	268	335	402
	Ps	0.02	0.032	0.052	0.072
24 x 8 Ak .921	CFM	276	368	461	553
	Ps	0.012	0.016	0.028	0.04
24 x 10 Ak 1.09	CFM	327	435	544	653
	Ps	0.019	0.033	0.052	0.074
24 x 12 Ak 1.3	CFM	290	520	650	780
	Ps	0.02	0.032	0.052	0.072

WALL RETURNS - 1/2" FINS

Face Velocity		300	400	500	600
24 x 16 Ak 1.73	CFM	519	692	865	1038
	Ps	0.016	0.032	0.052	0.072
24 x 24 Ak 2.78	CFM	834	1112	1390	1668
	Ps	0.012	0.019	0.028	0.04
30 x 6 Ak .83	CFM	249	332	415	498
	Ps	0.02	0.032	0.052	0.073
30 x 10 Ak 1.42	CFM	426	568	710	852
	Ps	0.011	0.02	0.028	0.04
30 x 12 Ak 1.65	CFM	495	660	825	990
	Ps	0.02	0.032	0.052	0.07

WALL/CEILING REGISTERS - 1/3"

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.008	0.012	0.016	0.024	0.032	0.044	0.052	0.064
6 x 6 Ak .128	CFM	38	51	64	77	90	102	115	128
	Throw	5	6	8	9	11	13	14	16
8 x 4 Ak .125	CFM	38	50	63	75	88	100	113	125
	Throw	5	6	8	9	11	13	14	16
8 x 6 Ak .192	CFM	58	77	96	115	134	154	173	192
	Throw	6	7	9	11	13	15	17	19
8 x 8 Ak .263	CFM	79	105	132	158	184	210	237	263
	Throw	7	9	11	14	16	18	21	23
10 x 4 Ak .156	CFM	47	62	78	94	109	125	140	156
	Throw	5	7	8	10	12	13	15	17
10 x 6 Ak .252	CFM	76	101	126	151	176	202	227	252
	Throw	7	9	11	13	16	18	20	22
10 x 8 Ak .357	CFM	107	143	179	214	250	286	321	357
	Throw	8	10	12	15	18	20	23	25
10 x 10 Ak .31	CFM	95	125	155	185	215	250	280	310
	Throw	5	7	8.5	10	12	14	15.5	17
12 x 4 Ak .192	CFM	58	77	96	115	134	154	173	192
	Throw	6	7	9	11	13	15	17	19
12 x 6 Ak .309	CFM	93	124	155	185	216	247	278	309
	Throw	7	9	12	14	16	19	21	23
12 x 8 Ak .437	CFM	131	175	219	262	306	350	393	437
	Throw	8	11	14	16	19	22	25	27
12 x 10 Ak .563	CFM	169	225	282	338	394	450	507	563
	Throw	10	12	16	18	21	25	27	31
12 x 12 Ak .69	CFM	207	276	345	414	483	552	621	690
	Throw	10	13	17	20	23	27	29	33
14 x 4 Ak .234	CFM	70	94	117	140	164	187	211	234
	Throw	7	9	11	14	15	17	19	21
14 x 6 Ak .372	CFM	112	149	186	223	260	298	335	372
	Throw	8	11	13	15	18	20	23	25

WALL/CEILING REGISTERS - 1/3"

Face Velocity		300	400	500	600	700	800	900	1000
14 x 8 Ak .524	CFM	157	210	262	314	367	419	472	524
	Throw	8	11	14	17	20	23	26	29
16 x 8 Ak .6	CFM	180	240	300	360	420	480	540	600
	Throw	9	11	15	17	21	24	26	30

WALL/CEILING REGISTERS - 1/2"

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.008	0.012	0.016	0.024	0.032	0.044	0.052	0.064
10 x 4 Ak .115	CFM	38	50	63	75	88	100	113	125
	Throw	4	5	6	7	9	10	12	13
10 x 6 Ak .186	CFM	56	74	93	112	130	149	167	186
	Throw	6	7	9	10	11	13	14	15
12 x 4 Ak .146	CFM	44	58	73	88	102	117	131	146
	Throw	5	6	7	9	10	11	12	14
12 x 6 Ak .236	CFM	71	94	118	142	165	189	212	236
	Throw	6	8	9	11	13	14	16	17
12 x 8 Ak .327	CFM	98	131	164	196	229	262	294	327
	Throw	7	8	10	12	13	15	17	19
14 x 4 Ak .178	CFM	53	71	89	107	125	142	160	178
	Throw	5	6	8	9	10	12	13	14
14 x 10 Ak .49	CFM	147	196	245	294	343	392	441	490
	Throw	8	11	14	17	20	23	26	28

WALL/CEILING REGISTERS - ALUMINUM

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.008	0.012	0.016	0.024	0.032	0.04	0.052	0.064
10 x 4 Ak .15	CFM	45	60	75	90	104	120	135	150
	Throw	4	6	7	9	10	11	13	14

WALL/CEILING REGISTERS - 3 WAY

Face Velocity		300	400	500	600	700	800	900	1000
Pressure Loss		0.008	0.012	0.016	0.024	0.032	0.044	0.052	0.064
10 x 4 Ak .12	Total CFM	36	48	60	72	84	96	108	120
	CFM L/S	21/7	30/9	38/11	45/13	53/15	60/17	68/20	76/22
	Throw L/S	4/3	7/4	8/5	9/6	10/7	11/7	13/8	15/9

RETURN AIR FILTER GRILLES - 1/3"

Face Velocity		300	400	500	600
12 x 12 Ak .687	CFM	206	275	344	412
	Ps	0.012	0.02	0.028	0.044
14 x 14 Ak .937	CFM	281	375	469	562
	Ps	0.012	0.018	0.028	0.044

RETURN AIR FILTER GRILLES - 1/3"

Face Velocity		300	400	500	600
14 x 20 Ak 1.34	CFM	402	536	670	804
	Ps	0.012	0.016	0.028	0.044
14 x 24 Ak 1.63	CFM	489	652	815	978
	Ps	0.012	0.016	0.028	0.044

ENGINEERING DATA

RETURN AIR FILTER GRILLES - 1/3"

Face Velocity		300	400	500	600
14 x 25 Ak 1.715	CFM	515	686	858	1029
	Ps	0.012	0.016	0.028	0.044
16 x 16 Ak 1.23	CFM	369	492	615	738
	Ps	0.012	0.016	0.028	0.04
16 x 20 1.543	CFM	463	617	772	926
	Ps	0.012	0.016	0.028	0.04
16 x 25 Ak 1.932	CFM	580	773	966	1159
	Ps	0.012	0.016	0.028	0.04
18 x 18 Ak 1.562	CFM	469	625	781	937
	Ps	0.012	0.02	0.028	0.04
20 x 14 Ak 1.34	CFM	402	536	670	804
	Ps	0.012	0.016	0.028	0.044
20 x 16 Ak 1.543	CFM	463	617	772	926
	Ps	0.012	0.016	0.028	0.04
20 x 20 Ak 1.932	CFM	580	773	966	1159
	Ps	0.012	0.016	0.028	0.04

RETURN AIR FILTER GRILLES - 1/3"

Face Velocity		300	400	500	600
20 x 25 Ak 2.416	CFM	725	966	1208	1450
	Ps	0.012	0.02	0.028	0.044
20 x 30 Ak 2.89	CFM	867	1156	1445	1734
	Ps	0.012	0.02	0.028	0.044
24 x 12 Ak 1.38	CFM	414	552	690	828
	Ps	0.012	0.02	0.028	0.042
24 x 14 Ak 1.63	CFM	489	652	815	978
	Ps	0.012	0.016	0.028	0.044
24 x 24 Ak 2.78	CFM	834	1112	1390	1668
	Ps	0.012	0.019	0.028	0.04
25 x 14 1.715	CFM	515	686	858	1029
	Ps	0.012	0.016	0.028	0.044
25 x 16 Ak 1.932	CFM	580	773	966	1159
	Ps	0.012	0.016	0.028	0.04
25 x 20 Ak 2.416	CFM	725	966	1208	1450
	Ps	0.012	0.02	0.028	0.044

RETURN AIR FILTER GRILLES - 1/2"

Face Velocity		300	400	500	600
14 x 14 Ak .9	CFM	270	360	450	540
	Ps	0.02	0.032	0.052	0.072
16 x 16 Ak 1.17	CFM	351	468	585	702
	Ps	0.02	0.032	0.052	0.072
18 x 18 Ak 1.47	CFM	441	588	735	882
	Ps	0.02	0.032	0.052	0.072

RETURN AIR FILTER GRILLES - 1/2"

Face Velocity		300	400	500	600
20 x 20 Ak 1.81	CFM	543	724	905	1086
	Ps	0.02	0.032	0.052	0.072
24 x 12 Ak 1.3	CFM	390	520	650	780
	Ps	0.02	0.032	0.052	0.072

VERTICAL SINGLE SUPPLY REGISTERS

Face Velocity		400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000
Pressure Loss		0.012	0.016	0.024	0.032	0.04	0.052	0.064	0.076	0.092	0.108	0.124	0.164	0.204	0.252
10 x 4 Ak .203	CFM	82	102	122	143	163	184	204	224	245	265	286	326	367	408
	Throw	7	9	11	13	14	17	18	21	22	24	26	30	33	36
10 x 6 Ak .315	CFM	126	158	189	221	252	284	315	347	378	410	441	504	567	630
	Throw	9	11	14	16	18	22	23	25	28	30	33	36	41	46
12 x 4 Ak .248	CFM	99	124	149	174	198	223	248	273	298	322	347	397	446	496
	Throw	8	11	13	14	16	19	20	23	24	27	29	33	37	41
12 x 6 Ak .381	CFM	152	191	229	267	305	343	381	419	457	495	533	610	686	762
	Throw	10	12	15	17	21	22	26	27	30	33	36	41	45	50
12 x 12 Ak .774	CFM	310	387	464	542	619	697	774	851	929	1006	1084	1238	1393	1548
	Throw	14	18	21	25	28	32	35	40	43	47	50	57	64	72
14 x 6 Ak .448	CFM	179	224	269	314	358	403	448	493	538	582	627	717	806	896
	Throw	11	13	16	19	23	24	27	30	33	35	39	43	50	54
14 x 8 Ak .591	CFM	236	296	355	414	473	532	591	650	709	768	827	946	1064	1182
	Throw	12	15	19	22	25	28	30	33	37	40	44	50	56	63
16 x 8 Ak .684	CFM	274	342	410	479	547	616	684	752	821	889	958	1094	1231	1368
	Throw	14	17	20	24	27	30	33	37	40	43	47	53	59	66

HORIZONTAL RETURNS

Face Velocity		300	400	500	600	700	800	900	1000
12 x 6 Ak .34	CFM	102	136	170	204	238	272	306	340
	Ps	0.012	0.02	0.032	0.048	0.06	0.076	0.1	0.128
14 x 6 Ak .38	CFM	114	152	190	228	266	304	342	380
	Ps	0.012	0.02	0.032	0.044	0.06	0.076	0.1	0.124
20 x 20 Ak 1.92	CFM	576	768	960	1152	1344	1536	1728	1920
	Ps	0.012	0.02	0.032	0.044	0.06	0.084	0.1	0.12
24 x 24 Ak 2.8	CFM	840	1120	1400	1680	1960	2240	2520	2800
	Ps	0.012	0.02	0.032	0.048	0.06	0.092	0.1	0.124

T-BAR DIFFUSERS

Face Velocity		400	500	600	700	800	900	1000	1200	1400
6 An .2 Ak .275	CFM	80	100	120	140	160	180	200	240	280
	Ps	0.006	0.01	0.014	0.018	0.024	0.03	0.037	0.054	0.072
	Throw	1	2	2	2.5	3	3.5	4	4.5	5.5
8 An .35 Ak .355	CFM	140	175	210	245	280	315	350	420	490
	Ps	0.01	0.015	0.022	0.029	0.038	0.049	0.06	0.086	0.117
	Throw	2.5	3.5	4	4.5	5	5.5	6	7	8
10 An .54 Ak .62	CFM	216	270	324	378	432	486	540	648	756
	Ps	0.014	0.02	0.028	0.041	0.054	0.068	0.084	0.122	0.167
	Throw	4	5.5	6.5	8	9	10	11.5	14.5	17
12 An .78 Ak .7	CFM	312	390	468	546	624	702	780	936	1092
	Ps	0.018	0.024	0.032	0.052	0.063	0.072	0.094	0.132	0.18
	Throw	5.5	7	8.5	10	11.5	13	14.5	17.5	20.5
14 An 1.07 Ak .75	CFM	428	535	642	749	856	963	1070	1284	1498
	Ps	0.022	0.03	0.04	0.064	0.08	0.115	0.14	0.205	0.277
	Throw	7	8.5	10.5	12	13.5	15.5	17	20.5	24

T-BAR DIFFUSERS

Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
6 An .2 Ak .76 (retracted) Ak .8 (extended)	CFM	80	100	120	140	160	180	200	240	280	320
	Ps (retr.)	0.024	0.04	0.056	0.072	0.1	0.116	0.144	0.22	0.296	0.4
	Ps (ext.)	0.008	0.016	0.024	0.032	0.048	0.06	0.076	0.116	0.156	0.208
	Throw (retr.)	2	3	3	4	5	6	6	8	10	12
	Throw (ext.)	2	3	4	4	5	6	7	9	11	13
8 An .35 Ak .88 (retracted) Ak .94 (extended)	CFM	140	175	210	245	280	315	350	420	490	560
	Ps (retr.)	0.028	0.044	0.064	0.088	0.12	0.152	0.188	0.272	0.396	0.5
	Ps (ext.)	0.016	0.024	0.036	0.048	0.072	0.092	0.108	0.16	0.232	0.32
	Throw (retr.)	4	5	6	7	8	9	10	12	14	16
	Throw (ext.)	4	5	6	8	9	10	12	14	17	20
10 An .54 Ak 1.16 (extended) Ak 1.22 (extended)	CFM	216	270	324	378	432	486	540	648	756	864
	Ps (retr.)	0.044	0.076	0.096	0.128	0.172	0.224	0.26	0.368	0.5	0.64
	Ps (ext.)	0.028	0.044	0.06	0.084	0.112	0.136	0.168	0.224	0.284	0.46
	Throw (retr.)	6	7	9	10	12	13	15	17	20	23
	Throw (ext.)	6	8	9	11	13	15	17	21	25	29

ENGINEERING DATA

T-BAR DIFFUSERS

Neck Velocity		400	500	600	700	800	900	1000	1200	1400	1600
12 An .79 Ak 1.63 (retracted) Ak 1.69 (extended)	CFM	312	390	468	546	624	702	780	936	1092	1248
	Ps (retr.)	0.052	0.08	0.116	0.152	0.18	0.22	0.276	0.404	0.544	0.644
	Ps (ext.)	0.04	0.052	0.076	0.096	0.124	0.144	0.192	0.272	0.368	0.476
	Throw (retr.)	7	10	11	12	14	17	19	22	27	28
	Throw (ext.)	9	11	12	13	15	18	20	24	29	30
14 An 1.07 Ak 2.03 (retracted) Ak 2.09 (extended)	CFM	428	535	642	749	856	963	1070	1284	1498	1712
	Ps (retr.)	0.08	0.128	0.172	0.228	0.276	0.34	0.464	0.644	0.812	1.004
	Ps (ext.)	0.064	0.084	0.116	0.136	0.18	0.212	0.3	0.408	0.524	0.696
	Throw (retr.)	8	9	12	13	15	16	18	22	25	28
	Throw (ext.)	10	11	13	15	17	19	22	26	29	32