

## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

#### MODELS: 7145H, 7145V

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .011	.006 .025	.010 .045	.016 .070	.022 .101	.031 .138	.040 .180	.050 .228	.062 .281
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM	20	40	60	80	100	120	140	160	180	200
				Noise Criteria	-	-	-	-	-	17	22	26	30	34
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM	28	56	84	112	140	168	196	224	252	280
				Noise Criteria	-	-	-	-	-	18	23	27	31	35
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM	35	70	105	140	175	210	245	280	315	350
				Noise Criteria	-	-	-	-	-	19	24	28	32	36
8 x 8	14 x 5	0.38	0.40	CFM	38	76	114	152	190	228	266	304	342	380
				Noise Criteria	-	-	-	-	15	20	25	29	33	37
12 x 6	18 x 4	0.42	0.45	CFM	42	84	126	168	210	252	294	336	378	420
				Noise Criteria	-	-	-	-	16	21	25	29	33	37
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM	58	116	174	232	290	348	406	464	522	580
				Noise Criteria	-	-	-	-	17	22	26	31	35	39
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM	61	122	183	244	305	366	427	488	549	610
				Noise Criteria	-	-	-	-	17	22	27	32	35	39
18 x 6	14 x 8 28 x 4	0.65	0.67	CFM	65	130	195	260	325	390	455	520	585	650
				Noise Criteria	-	-	-	-	18	23	28	32	36	39
12 x 10	16 x 8 24 x 5	0.74	0.74	CFM	74	148	222	296	370	444	518	592	666	740
				Noise Criteria	-	-	-	-	18	23	28	33	37	40
12 x 12	14 x 10 18 x 8	0.90	0.89	CFM	90	180	270	360	450	540	630	720	810	900
				Noise Criteria	-	-	-	-	19	24	29	34	37	40
14 x 14	16 x 12 20 x 10	1.24	1.22	CFM	124	248	372	496	620	744	868	992	1116	1240
				Noise Criteria	-	-	-	-	19	24	29	34	38	41
18 x 12	16 x 14 20 x 10	1.37	1.34	CFM	137	274	411	548	685	822	959	1096	1233	1370
				Noise Criteria	-	-	-	15	20	25	30	35	38	41
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM	152	304	456	608	760	912	1064	1216	1368	1520
				Noise Criteria	-	-	-	15	20	25	30	36	39	42
16 x 16	18 x 14 22 x 12	1.64	1.58	CFM	164	328	492	656	820	984	1148	1312	1476	1640
				Noise Criteria	-	-	-	16	21	26	31	36	39	42
24 x 12	18 x 16 20 x 14	1.85	1.78	CFM	185	370	555	740	925	1110	1295	1480	1665	1850
				Noise Criteria	-	-	-	16	21	26	31	36	39	43
18 x 18	20 x 16 24 x 14	2.10	2.01	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100
				Noise Criteria	-	-	-	16	21	27	32	37	40	43
30 x 12	20 x 18 22 x 16	2.32	2.23	CFM	232	464	696	928	1160	1392	1624	1856	2088	2320
				Noise Criteria	-	-	-	17	22	27	32	37	40	44
20 x 20	24 x 18 26 x 16	2.61	2.48	CFM	261	522	783	1044	1305	1566	1827	2088	2349	2610
				Noise Criteria	-	-	-	17	22	28	33	38	41	44
22 x 22	24 x 20 26 x 18	3.17	3.00	CFM	317	634	951	1268	1585	1902	2219	2536	2853	3170
				Noise Criteria	-	-	-	18	23	29	33	38	41	45
30 x 18	24 x 22 34 x 16	3.54	3.34	CFM	354	708	1062	1416	1770	2124	2478	2832	3186	3540
				Noise Criteria	-	-	-	18	23	29	34	39	42	46
24 x 24	26 x 22 28 x 20	3.79	3.56	CFM	379	758	1137	1516	1895	2274	2653	3032	3411	3790
				Noise Criteria	-	-	-	18	23	29	34	39	42	46
36 x 18	32 x 20 40 x 16	4.27	4.01	CFM	427	854	1281	1708	2135	2562	2989	3416	3843	4270
				Noise Criteria	-	-	-	19	24	30	35	40	43	47
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM	447	894	1341	1788	2235	2682	3129	3576	4023	4470
				Noise Criteria	-	-	-	19	24	30	35	40	43	47
30 x 24	28 x 26 32 x 22	4.77	4.46	CFM	477	954	1431	1908	2385	2862	3339	3816	4293	4770
				Noise Criteria	-	-	-	20	25	31	36	40	44	48
28 x 28	30 x 26 36 x 22	5.20	4.85	CFM	520	1040	1560	2080	2600	3120	3640	4160	4680	5200
				Noise Criteria	-	-	-	20	25	31	36	41	44	48
36 x 24	30 x 28 40 x 22	5.74	5.35	CFM	574	1148	1722	2296	2870	3444	4018	4592	5166	5740
				Noise Criteria	-	-	-	20	26	32	36	41	45	49
30 x 30	34 x 26 38 x 24	5.99	5.57	CFM	599	1198	1797	2396	2995	3594	4193	4792	5391	5990
				Noise Criteria	-	-	-	20	26	32	37	41	45	49

For performance data notes, see F82.

## PERFORMANCE DATA:

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#### MODELS: 7145H, 7145V

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .011	300 .006 .025	400 .010 .045	500 .016 .070	600 .022 .101	700 .031 .138	800 .040 .180	900 .050 .228	1000 .062 .281
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM Noise Criteria	684 —	1368 —	2052 —	2736 21	3420 27	4104 33	4788 37	5472 42	6156 46	6840 50
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM Noise Criteria	769 —	1538 —	2307 15	3076 21	3845 27	4614 33	5383 38	6152 42	6921 46	7690 50
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM Noise Criteria	869 —	1738 —	2607 15	3476 22	4345 27	5214 34	6083 39	6952 43	7821 47	8690 51
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM Noise Criteria	970 —	1940 —	2910 16	3880 22	4850 28	5820 34	6790 39	7760 43	8730 47	9700 51
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM Noise Criteria	1077 —	2154 —	3231 16	4308 22	5385 28	6462 34	7539 40	8616 43	9693 48	10770 52
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM Noise Criteria	1189 —	2378 —	3567 17	4756 23	5945 29	7134 35	8323 40	9512 44	10701 48	11890 52
44 x 44	46 x 42	13.07	11.98	CFM Noise Criteria	1307 —	2614 —	3921 17	5228 23	6535 29	7842 35	9149 40	10456 44	11763 48	13070 52
46 x 46		14.30	13.10	CFM Noise Criteria	1430 —	2860 —	4290 18	5720 24	7150 30	8580 36	10010 41	11440 45	12870 49	14300 53
48 x 48		15.59	14.26	CFM Noise Criteria	1559 —	3118 —	4677 18	6236 24	7795 30	9354 36	10913 41	12472 45	14031 49	15590 53

#### Performance Notes:

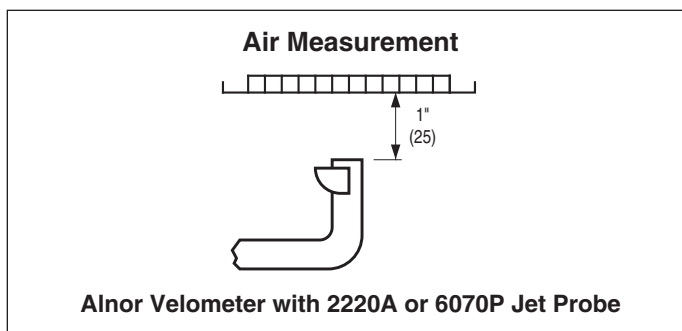
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value – 4.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes a Noise Criteria level of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### 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 out from the face.
- 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).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.