

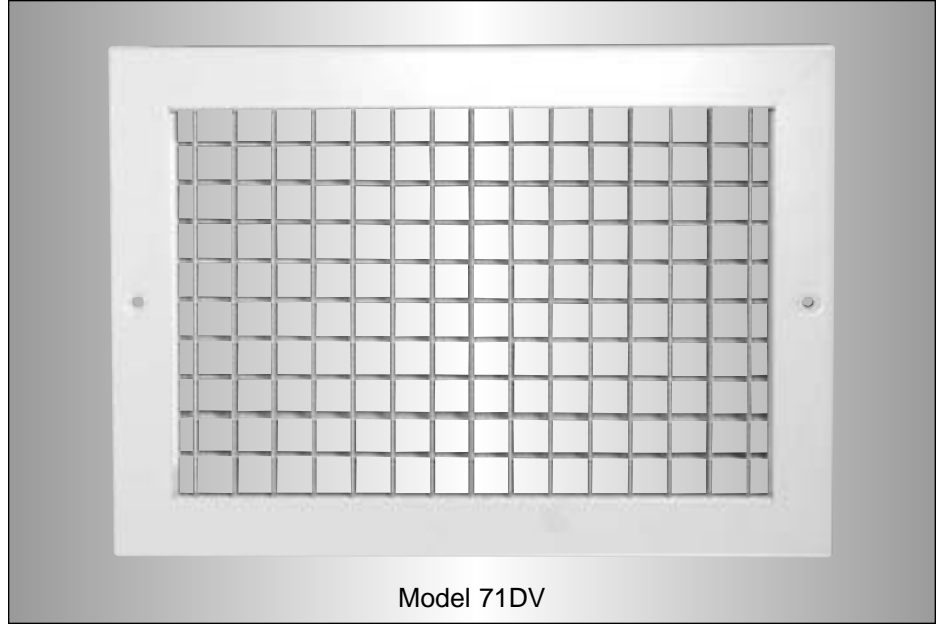
AIRFOIL SERIES DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY
- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE

Models:

71DV and 71DH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper

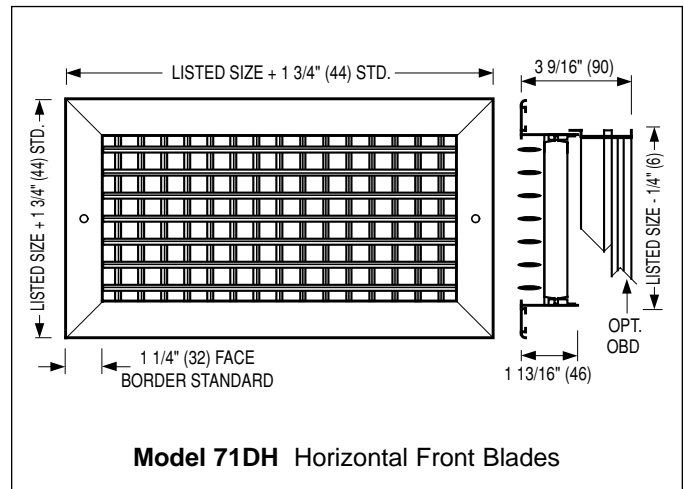
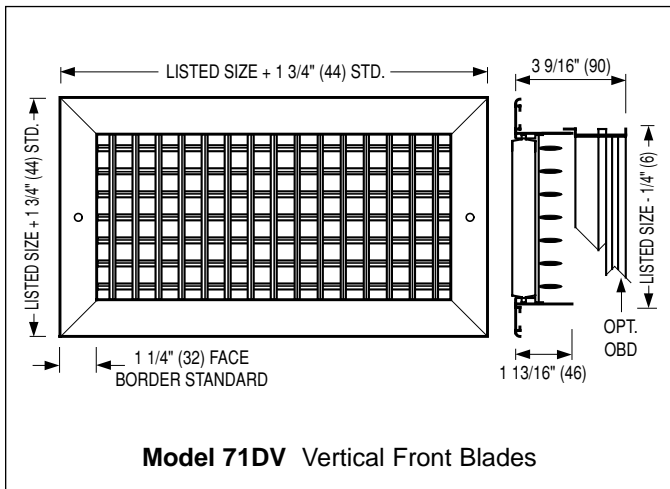


Models 71DV and 71DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined airfoil shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of approximately 77%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.
- Adjustable air pattern – Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.



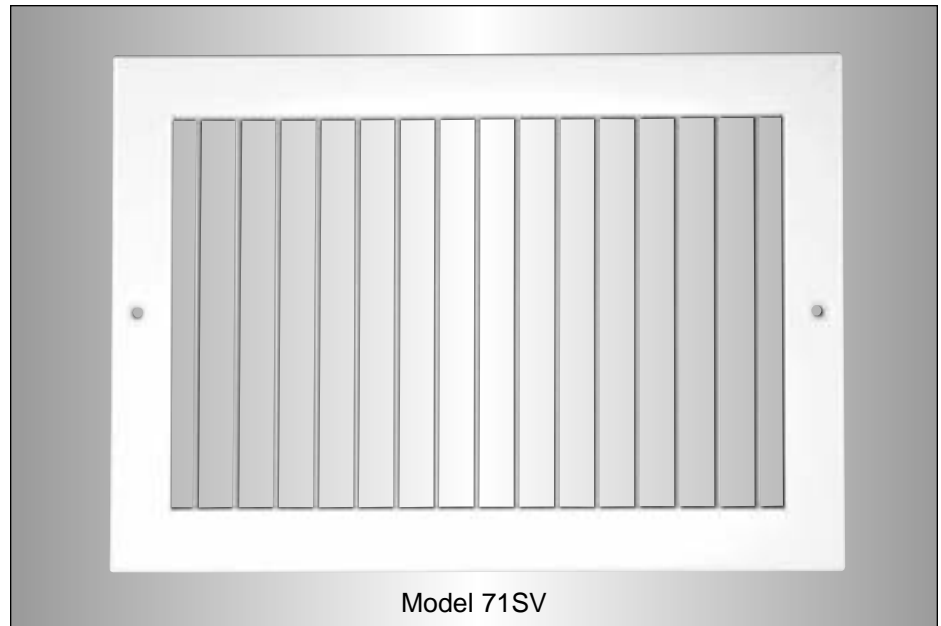
AIRFOIL SERIES SINGLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY
- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE

Models:

71SV and 71SH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper

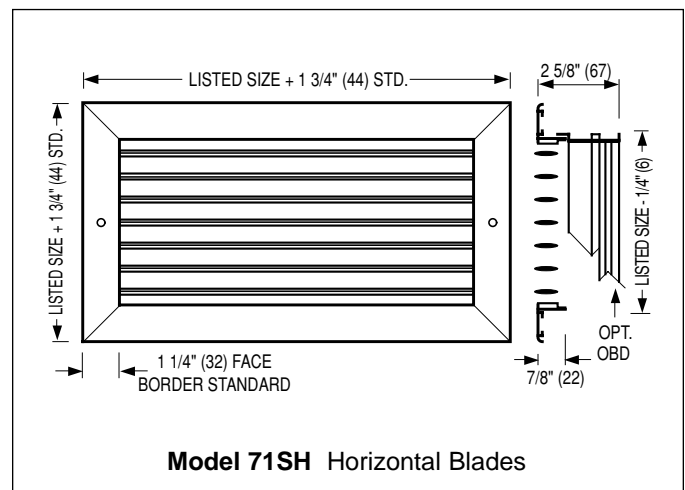
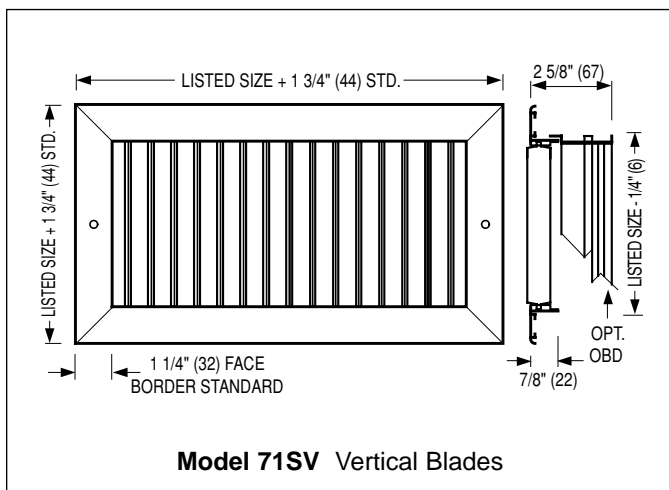


Models 71SV and 71SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined airfoil shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of approximately 77%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.
- Adjustable air pattern – Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Airfoil Blade Supply Grilles and Registers – Model Series 7100

71 D V - O - 24 x 12 - S - AW - A - —

MODEL

- Aluminum Airfoil Blade 71

SUPPLY

- Double Deflection D
- Single Deflection S

FRONT BLADE DIRECTION

- Vertical V
- Horizontal H

DAMPER (OBD)

- Steel (standard) O
- Aluminum OA
- No Damper —

WIDTH x HEIGHT

inches (mm) x inches (mm)

ACCESSORIES

- None (default) —
- Plaster Sub-frame PF
- Foam Gasket GK

FASTENING

- Screw Holes (default) A
- Concealed Mounting Straps C
- Concealed Screw Holes in Neck D
- None N

FINISH

- Appliance White (default) AW
- Aluminum AL
- Special Custom Color SP
- Satin (clear) Anodized SA

FRAME / BORDER TYPE

Surface Mount:

- Standard 1 1/4" (32) (default) S
- Narrow 1" (25) NF

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example; an airfoil blade double deflection register, front blades vertical and steel damper, is Model 71DV-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
- Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
- The larger dimension must always be specified first; for example 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

71DV, 71DH Double Deflection

Furnish and install **Nailor Model** (select one) **71DV** or **71DH Airfoil Blade Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

71SV, 71SH Single Deflection

Furnish and install **Nailor Model** (select one) **71SV** or **71SH Airfoil Blade Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Notes for Supply Grilles and Registers

Airfoil Blade 7100 Series

Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

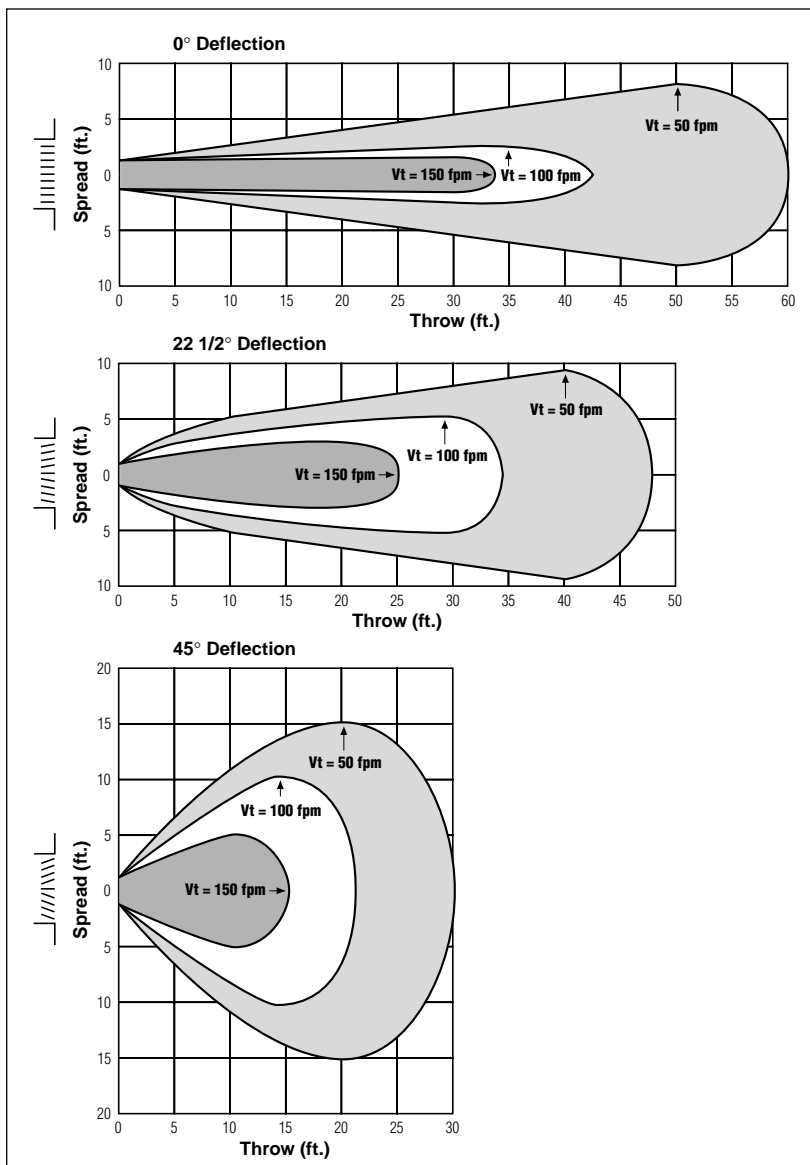
In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The

angle of spread and temperature differential between the supply air and room air (ΔT) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F ΔT) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

Spread Characteristics With Three Deflection Settings



NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

TP Correction Factors for Grilles Without Damper (multiply)

Blade deflection	0°	22 1/2°	45°
Double Defl. Factor	x .73	x .76	x .84
Single Defl. Factor	x .66	x .70	x .80

NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18

Performance Data

Supply Grilles and Registers • Airfoil Blade 7100 Series Models: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400		
					0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°
6 x 6	8 x 4 10 x 4	0.20	CFM NC	0°	.006	.010	.016	.022	.031	.040	.062	.090	.122		
				TP	22 1/2°	.011	.019	.030	.044	.060	.078	.122	.175	.238	
				45°	.012	.022	.034	.049	.067	.087	.136	.196	.267		
8 x 6	10 x 5 12 x 4	0.27	CFM NC	0°	.060	.080	.100	.120	.140	.160	.200	.240	.280		
				T	22 1/2°	.16	.15	.14	.13	.12	.11	.10	.09	.08	.07
				45°	.14	.13	.12	.11	.10	.09	.08	.07	.06	.05	.04
10 x 6	12 x 5 16 x 4	0.35	CFM NC	0°	.081	.108	.135	.162	.189	.216	.270	.324	.378		
				T	22 1/2°	.21	.20	.18	.17	.16	.15	.14	.13	.12	.11
				45°	.18	.17	.16	.15	.14	.13	.12	.11	.10	.09	.08
8 x 8	14 x 5	0.38	CFM NC	0°	.105	.140	.175	.210	.245	.280	.350	.420	.490		
				T	22 1/2°	.27	.26	.24	.23	.22	.21	.20	.19	.18	.17
				45°	.24	.23	.22	.21	.20	.19	.18	.17	.16	.15	.14
12 x 6	18 x 4	0.42	CFM NC	0°	.114	.152	.190	.228	.266	.304	.380	.456	.532		
				T	22 1/2°	.30	.29	.27	.26	.25	.24	.23	.22	.21	.20
				45°	.26	.25	.24	.23	.22	.21	.20	.19	.18	.17	.16
14 x 6	10 x 8	0.50	CFM NC	0°	.126	.168	.210	.252	.294	.336	.420	.504	.588		
				T	22 1/2°	.33	.32	.30	.29	.28	.27	.26	.25	.24	.23
				45°	.29	.28	.27	.26	.25	.24	.23	.22	.21	.20	.19
12 x 8	16 x 6 24 x 4	0.58	CFM NC	0°	.150	.200	.250	.300	.350	.400	.500	.600	.700		
				T	22 1/2°	.39	.38	.36	.35	.34	.33	.32	.31	.30	.29
				45°	.34	.33	.32	.31	.30	.29	.28	.27	.26	.25	.24
10 x 10	14 x 7 26 x 4	0.61	CFM NC	0°	.174	.232	.290	.348	.406	.464	.580	.696	.812		
				T	22 1/2°	.45	.44	.42	.41	.40	.39	.38	.37	.36	.35
				45°	.39	.38	.37	.36	.35	.34	.33	.32	.31	.30	.29
18 x 6	14 x 8 28 x 4 30 x 4	0.65	CFM NC	0°	.183	.244	.305	.366	.427	.488	.610	.732	.854		
				T	22 1/2°	.48	.46	.44	.43	.42	.41	.40	.39	.38	.37
				45°	.41	.40	.39	.38	.37	.36	.35	.34	.33	.32	.31
12 x 10	20 x 6 24 x 5	0.74	CFM NC	0°	.195	.260	.325	.390	.455	.520	.650	.780	.910		
				T	22 1/2°	.51	.49	.47	.46	.45	.44	.43	.42	.41	.40
				45°	.44	.43	.42	.41	.40	.39	.38	.37	.36	.35	.34
22 x 6	16 x 8 28 x 5 36 x 4	0.80	CFM NC	0°	.222	.296	.370	.444	.518	.592	.740	.888	1036		
				T	22 1/2°	.58	.56	.54	.53	.52	.51	.50	.49	.48	.47
				45°	.50	.49	.48	.47	.46	.45	.44	.43	.42	.41	.40
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90	CFM NC	0°	.240	.320	.400	.480	.560	.640	.800	.960	1120		
				T	22 1/2°	.62	.60	.58	.57	.56	.55	.54	.53	.52	.51
				45°	.54	.53	.52	.51	.50	.49	.48	.47	.46	.45	.44
18 x 10	30 x 6	1.13	CFM NC	0°	.270	.360	.450	.540	.630	.720	.900	1080	1260		
				T	22 1/2°	.70	.68	.66	.65	.64	.63	.62	.61	.60	.59
				45°	.61	.60	.59	.58	.57	.56	.55	.54	.53	.52	.51
18 x 10	30 x 6	1.13	CFM NC	0°	.339	.452	.565	.678	.791	.904	1130	1356	1582		
				T	22 1/2°	.88	.85	.82	.80	.78	.76	.75	.74	.73	.72
				45°	.77	.76	.75	.74	.73	.72	.71	.70	.69	.68	.67

G
GRILLES AND REGISTERS

Performance Data

Supply Grilles and Registers • Airfoil Blade 7100 Series Models: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400		
					.006	.010	.016	.022	.031	.040	.052	.062	.075	.090	.108
					0°	22 1/2°	45°	0°	22 1/2°	45°	0°	22 1/2°	45°	0°	22 1/2°
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM	372	496	620	744	868	992	1240	1488	1736		
				NC	—	—	14	19	24	28	34	40	45		
				T	0°	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	35-42-60	39-47-66	41-51-71	
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM	411	548	685	822	959	1096	1370	1644	1918		
				NC	—	—	15	20	25	29	35	41	46		
				T	0°	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	35-43-61	39-47-67	41-51-72	
24 x 10	20 x 12 30 x 8	1.52		CFM	456	608	760	912	1064	1216	1520	1824	2128		
				NC	—	—	15	20	25	29	35	41	46		
				T	0°	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	37-45-64	41-50-70	43-53-76	
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM	492	656	820	984	1148	1312	1640	1968	2296		
				NC	—	—	15	20	25	29	35	41	46		
				T	0°	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	39-47-67	42-51-73	46-56-79	
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM	555	740	925	1110	1295	1480	1850	2220	2590		
				NC	—	—	16	21	26	30	36	42	47		
				T	0°	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	40-48-69	44-54-76	48-58-82	
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM	630	840	1050	1260	1470	1680	2100	2520	2940		
				NC	—	—	16	21	26	30	36	42	47		
				T	0°	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	42-52-74	47-57-81	50-62-87	
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM	696	928	1160	1392	1624	1856	2320	2784	3248		
				NC	—	10	17	22	27	31	37	43	48		
				T	0°	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	46-56-79	50-61-86	54-67-94	
24 x 16	32 x 12	2.50		CFM	750	1000	1250	1500	1750	2000	2500	3000	3500		
				NC	—	10	17	22	27	31	37	43	48		
				T	0°	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	48-58-82	52-64-90	56-68-97	
20 x 20	22 x 18	2.61		CFM	783	1044	1305	1566	1827	2088	2610	3132	3654		
				NC	—	10	17	22	27	31	37	43	48		
				T	0°	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	49-59-84	53-65-92	58-70-99	
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM	837	1116	1395	1674	1953	2232	2790	3348	3906		
				NC	—	10	17	22	27	31	37	43	48		
				T	0°	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	50-61-86	55-68-95	59-73-103	
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM	951	1268	1585	1902	2219	2536	3170	3804	4438		
				NC	—	11	18	23	28	32	38	44	49		
				T	0°	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	53-65-92	58-71-101	62-77-109	
42 x 12	36 x 14	3.27		CFM	981	1308	1635	1962	2289	2616	3270	3924	4578		
				NC	—	11	18	23	28	32	38	44	49		
				T	0°	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	53-66-93	59-72-101	63-77-109	
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM	1062	1416	1770	2124	2478	2832	3540	4248	4956		
				NC	—	11	18	23	28	32	38	44	49		
				T	0°	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	56-69-97	61-75-106	66-81-115	

Performance Data

Supply Grilles and Registers • Airfoil Blade 7100 Series
 Models: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400		
					.006	.010	.016	.022	.031	.040	.062	.090	.122	.160	
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79	CFM NC	0° 22 1/2° 45°	1137	1516	1895	2274	2653	3032	3790	4548	5306		
					—	11	18	23	28	32	38	44	49		
					2.96	0°	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
					2.84	22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
36 x 18	32 x 20 40 x 16 46 x 14	4.29	CFM NC	0° 22 1/2° 45°	1287	1716	2145	2574	3003	3432	4290	5148	6006		
					—	12	19	24	29	33	39	45	50		
					3.35	0°	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
					3.22	22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
26 x 26	28 x 24 48 x 14	4.47	CFM NC	0° 22 1/2° 45°	1341	1788	2235	2682	3129	3576	4470	5364	6258		
					—	12	19	24	29	33	39	45	50		
					3.49	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
					3.35	22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
30 x 24	32 x 22 36 x 20 40 x 18	4.77	CFM NC	0° 22 1/2° 45°	1431	1908	2385	2862	3339	3816	4770	5724	6678		
					—	12	19	24	29	33	39	45	50		
					3.72	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
					3.58	22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
42 x 18	28 x 26	4.99	CFM NC	0° 22 1/2° 45°	1497	1996	2495	2994	3493	3992	4990	5988	6986		
					—	13	20	25	30	34	40	46	51		
					3.89	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
					3.74	22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
28 x 28	30 x 26 36 x 22 40 x 20	5.20	CFM NC	0° 22 1/2° 45°	1560	2080	2600	3120	3640	4160	5200	6240	7280		
					—	13	20	25	30	34	40	46	51		
					4.06	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
					3.90	22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
42 x 20	30 x 28	5.57	CFM NC	0° 22 1/2° 45°	1671	2228	2785	3342	3899	4456	5570	6684	7798		
					—	13	20	25	30	34	40	46	51		
					4.34	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
					4.18	22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	51-61-86	56-67-96	61-74-105	66-80-114
36 x 24	40 x 22 44 x 20	5.74	CFM NC	0° 22 1/2° 45°	1722	2296	2870	3444	4018	4592	5740	6888	8036		
					—	13	20	25	30	34	40	46	51		
					4.48	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
					4.31	22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
30 x 30	34 x 26 38 x 24 48 x 20	5.99	CFM NC	0° 22 1/2° 45°	1797	2396	2995	3594	4193	4792	5990	7188	8386		
					—	13	20	25	30	34	40	46	51		
					4.67	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
					4.49	22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
42 x 24	36 x 28 42 x 24 46 x 22	6.72	CFM NC	0° 22 1/2° 45°	2016	2688	3360	4032	4704	5376	6720	8064	9408		
					—	14	21	26	31	35	41	47	52		
					5.24	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
					5.04	22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
32 x 32	40 x 26	6.84	CFM NC	0° 22 1/2° 45°	2052	2736	3420	4104	4788	5472	6840	8208	9576		
					—	14	21	26	31	35	41	47	52		
					5.34	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
					5.13	22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	73-90-126
36 x 30	38 x 28	7.22	CFM NC	0° 22 1/2° 45°	2166	2888	3610	4332	5054	5776	7220	8664	10108		
					—	14	21	26	31	35	41	47	52		
					5.63	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
					5.42	22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	CFM NC	0° 22 1/2° 45°	2307	3076	3845	4614	5383	6152	7690	9228	10766		
					—	15	22	27	32	36	42	48	53		
					6.00	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
					5.77	22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	CFM NC	0° 22 1/2° 45°	2307	3076	3845	4614	5383	6152	7690	9228	10766		
					—	15	22	27	32	36	42	48	53		
					5.23	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
					5.23	22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134

GRILLES AND REGISTERS

Performance Data

Supply Grilles and Registers • Airfoil Blade 7100 Series Models: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400	
					0°	0°	0°	0°	0°	0°	0°	0°	0°	0°
					TP	TP	TP	TP	TP	TP	TP	TP	TP	
					45°	45°	45°	45°	45°	45°	45°	45°	45°	
36 x 34	38 x 32 40 x 30 48 x 26	8.20		CFM	2460	3280	4100	4920	5740	6560	8200	9840	11480	
				NC	—	15	22	27	32	42	48	53		
				T	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
				T	22 1/2°	21-34-63	30-46-73	38-56-82	46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	
				T	45°	13-21-40	19-29-46	24-35-51	29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86
36 x 36	38 x 34 42 x 30 46 x 28	8.69		CFM	2607	3476	4345	5214	6083	6952	8690	10428	12166	
				NC	—	15	22	27	32	42	48	53		
				T	0°	28-45-84	39-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
				T	22 1/2°	22-36-67	31-48-77	39-59-86	48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	
				T	45°	14-23-42	20-30-48	25-37-54	30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90
38 x 38	42 x 34	9.70		CFM	2910	3880	4850	5820	6790	7760	9700	11640	13580	
				NC	—	16	23	28	33	43	49	54		
				T	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
				T	22 1/2°	22-38-70	34-50-81	42-62-91	50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	
				T	45°	14-24-44	21-31-51	27-39-57	31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95
42 x 36	44 x 34 48 x 30	10.16		CFM	3048	4064	5080	6096	7112	8128	10160	12192	14224	
				NC	—	16	23	28	33	43	49	54		
				T	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
				T	22 1/2°	23-38-72	34-51-83	42-64-94	51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	
				T	45°	15-24-45	22-32-52	27-40-59	32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98
40 x 40	42 x 38 46 x 34 48 x 32	10.77		CFM	3231	4308	5385	6462	7539	8616	10770	12924	15078	
				NC	—	16	23	28	33	43	49	54		
				T	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
				T	22 1/2°	25-40-75	35-54-86	45-67-97	54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	
				T	45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	50-61-86	54-66-94	59-72-102
42 x 42	44 x 40 46 x 38 48 x 36	11.89		CFM	3567	4756	5945	7134	8323	9512	11890	14268	16646	
				NC	—	17	24	29	34	44	50	55		
				T	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-149-210
				T	22 1/2°	26-42-78	37-55-90	46-69-100	55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	
				T	45°	16-26-49	23-35-56	29-43-63	35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105
44 x 44	46 x 42	13.07		CFM	3921	5228	6535	7842	9149	10456	13070	15684	18298	
				NC	—	17	24	29	34	44	50	55		
				T	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
				T	22 1/2°	27-44-83	39-59-96	49-74-106	59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	
				T	45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112
46 x 46		14.30		CFM	4290	5720	7150	8580	10010	11440	14300	17160	20020	
				NC	—	17	24	29	34	44	50	55		
				T	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
				T	22 1/2°	28-46-86	41-61-99	50-76-110	61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	
				T	45°	18-29-54	26-38-62	32-48-69	38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	62-82-116
48 x 48		15.59		CFM	4677	6236	7795	9354	10913	12472	15590	18708	21826	
				NC	—	18	25	30	35	45	51	56		
				T	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
				T	22 1/2°	30-48-90	42-64-105	54-80-117	64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	
				T	45°	19-30-57	27-40-66	34-50-73	40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122

- CFM** - cubic feet per minute
- TP** - total pressure - inches w.g.
- VP** - velocity pressure - inches w.g.
- T** - throw in feet
- NC** - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts @ 0° deflection.

Core velocity is in feet per minute.

Performance Notes:

1. Performance data is based on double deflection grille with opposed blade damper (register).
2. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
3. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.
4. Additional performance notes and correction factors for various models and settings may be found on page G61.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

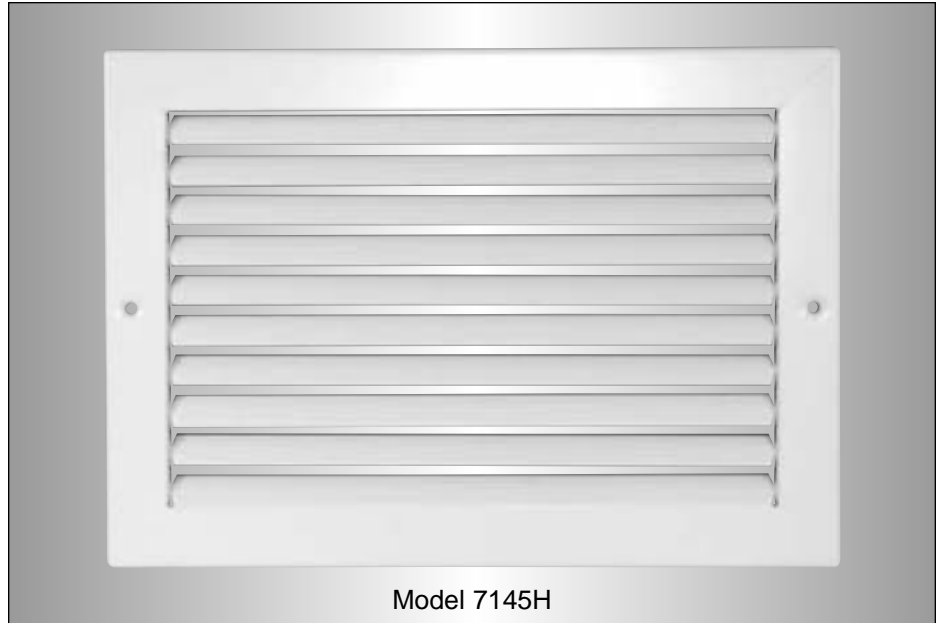
AIRFOIL BLADE RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE

Models:

7145H, 7145V, 71FH & 71FV

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Models 7145H and 71FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 7145V and 71FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance compliments the supply grilles and registers in the **7100 Series**.

The streamlined airfoil shaped blades and open spacing maintain a minimum effective free area capacity of 55% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and compliment "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G171 in the Options and Accessories section for further information.

FEATURES:

• Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

• Aluminum construction - rigid, heavy-gauge extruded frames with reinforced mitered corners.

• Aluminum blades - streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

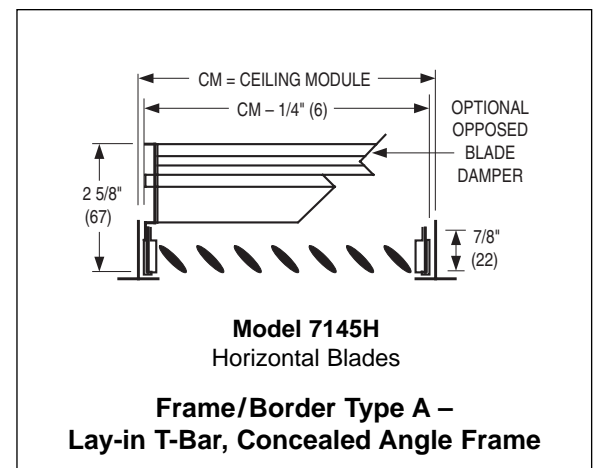
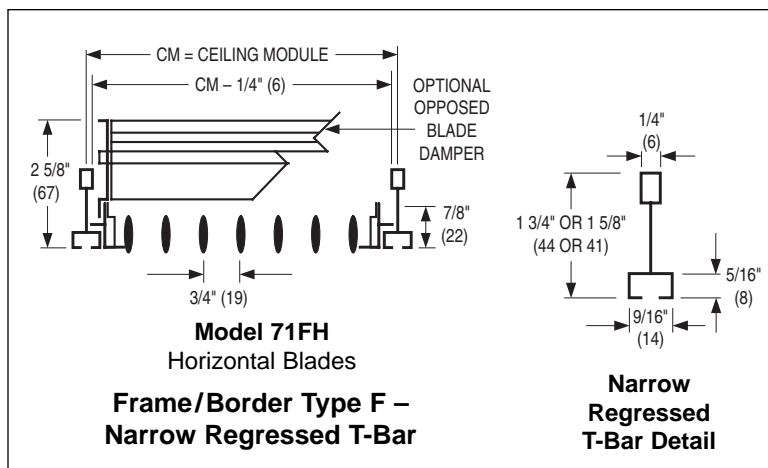
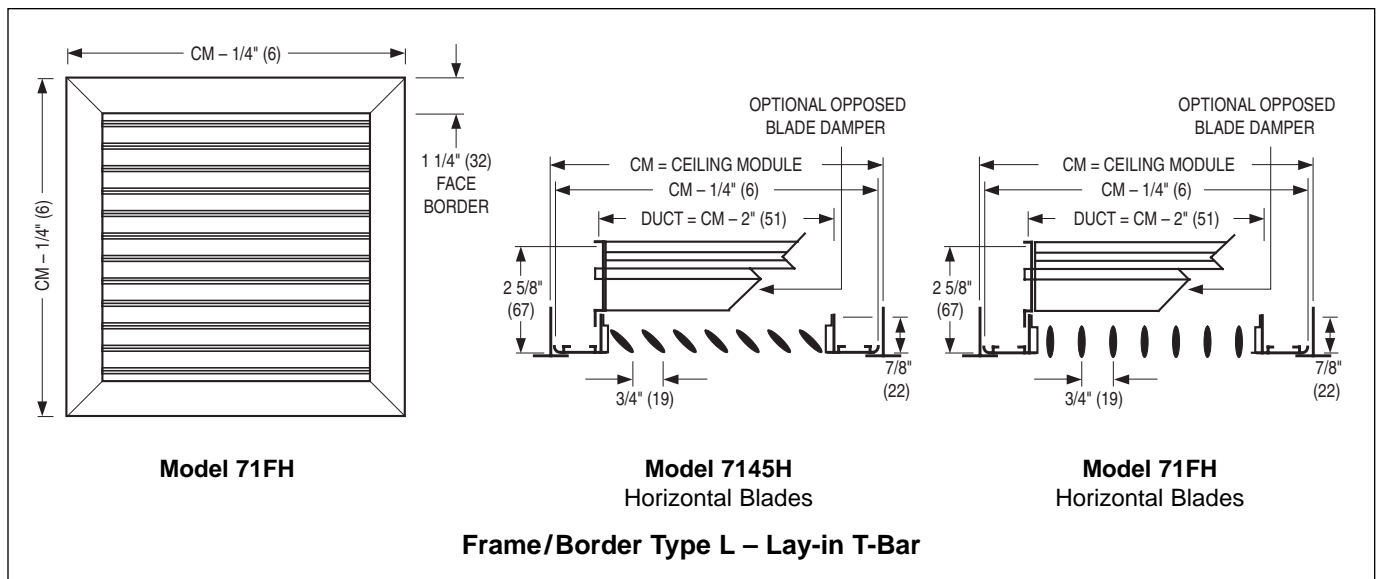
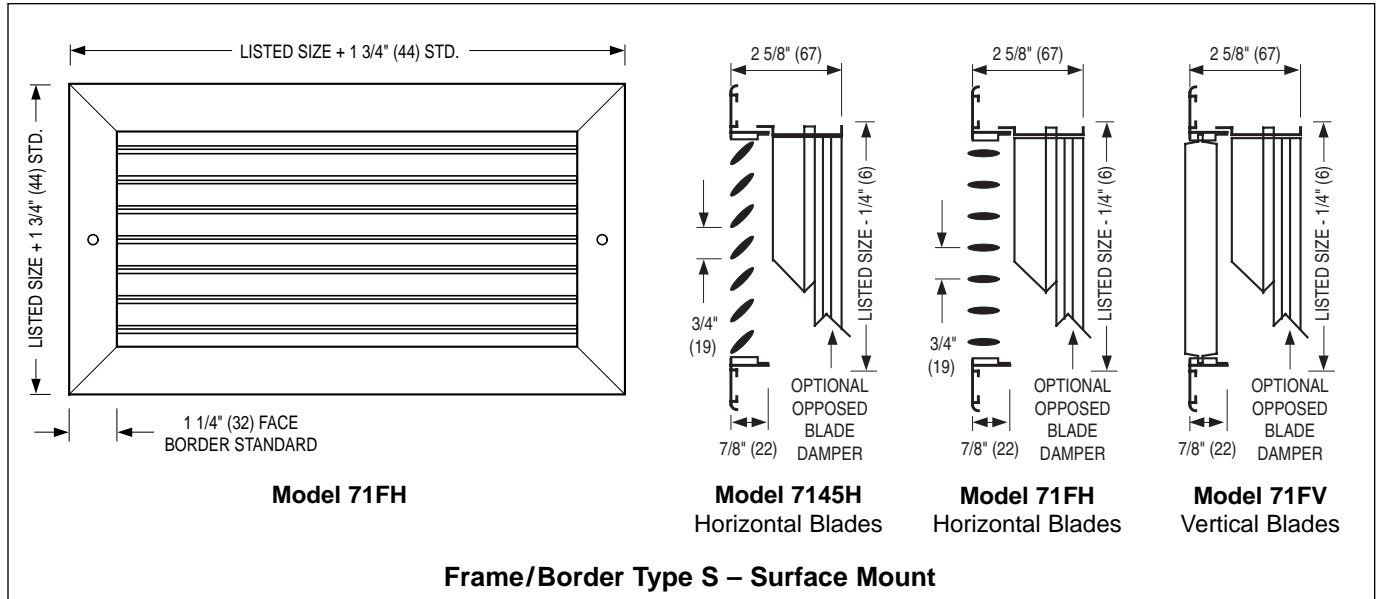
• Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

• AW Appliance White baked enamel finish is standard. Other finishes are available.

• Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

Dimensional Data

7100 Series Return 3/4" (19) Blade Spacing



GRILLES AND REGISTERS

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Airfoil Blade Return Grilles and Registers – Model Series 7100

71 45 H - O - 24 x 12 - S - OO - AW - A - —

MODEL

- Aluminum Airfoil Blade 71

RETURN

- Fixed 0° Defl., 3/4" (19) Spacing F
 - Fixed 45° Defl., 3/4" (19) Spacing 45

BLADE DIRECTION

- Horizontal H
 (Blades run long dimension)
 - Vertical V
 (Blades run short dimension)

DAMPER (OBD)

- Steel (standard) O
 - Aluminum OA
 - No Damper —

WIDTH X HEIGHT

inches (mm) x inches (mm)
 For Type S, NF, PL, SP, MP, FP and TP, W x H = Duct Size
 For Type L, F, and A, W x H = Ceiling Module Size

FRAME/BORDER TYPE

Surface Mount:

- Standard 1 1/4" (32) (default) S
 - Narrow 1" (25) NF

Ceiling Grid:

- Lay-in T-Bar * L
 - Angle Frame A
 - Fineline® F

Panel Mount: **

	Steel	Aluminum
- Lay-in T-Bar	PLS or	PLA
- Spline	SPS or	SPA
- Metal Pan	MPS or	MPA
- Fineline® Type	FPS or	FPA
- Tegular	TPS or	TPA

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a 45° deflection register, horizontal blades and steel damper, is Model 7145H-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
- The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).
- * For Type L Lay-in, grille neck size is ceiling module size - 2" (51).
 ** For Panel mounting, maximum grille neck size is ceiling module size - 3" (76).
 Refer to Options and Accessories Page No. G171 for Dimensional Data.
 *** Only available on Fixed 0° deflection models.

ACCESSORIES

- None (default) —
 - Plaster Sub-frame PF
 - Earthquake Tabs EQT

FASTENING

(only for frame / border types S, NF)
 - Screw Holes (default) A
 - Concealed Mounting Straps C
 - Concealed Screw Holes in Neck ***D
 - None N

FINISH

- Appliance White (default) AW
 - Aluminum AL
 - Special Custom Color SP
 - Satin (clear) Anodized SA

CEILING MODULE SIZE

(Use only for panel mounting, frame / border types PL, SP, MP, FP, TP)
 - None (default) OO

Imperial:

12 x 12, 24 x 12, 36 x 12,
 48 x 12, 20 x 20, 24 x 24,
 36 x 24, 48 x 24

Metric:

300 x 300, 600 x 300, 900 x 300,
 1200 x 300, 500 x 500, 600 x 600,
 900 x 600, 1200 x 600

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **7145H, 7145V, 71FH or 71FV Airfoil Blade Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have extruded aluminum fixed blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Fixed Blade Return Grilles and Registers • Airfoil Blade 7100 Series

Models: 7145H, 7145V

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 .011	.006 .025	.010 .045	.016 .070	.022 .101	.031 .138	.040 .180	.050 .228	.062 .281	
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	-	-	-	-	-	17	22	26	30	34	
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	-	-	-	-	-	18	23	27	31	35	
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	-	-	-	-	-	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	
				NC	-	-	-	-	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	
				NC	-	-	-	-	16	21	25	30	34	38	
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	-	-	-	-	17	22	26	31	35	39	
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	-	-	-	-	17	22	27	32	35	39	
18 x 6	14 x 8	30 x 4	0.65	0.67	CFM	65	130	195	260	325	390	455	520	585	650
	28 x 4				NC	-	-	-	-	18	23	28	32	36	39
12 x 10	16 x 8	20 x 6	0.74	0.74	CFM	74	148	222	296	370	444	518	592	666	740
	24 x 5				NC	-	-	-	-	18	23	28	33	37	40
12 x 12	14 x 10	24 x 6	0.90	0.89	CFM	90	180	270	360	450	540	630	720	810	900
	18 x 8	38 x 4			NC	-	-	-	-	19	24	29	34	37	40
14 x 14	16 x 12	24 x 8	1.24	1.22	CFM	124	248	372	496	620	744	868	992	1116	1240
	20 x 10	34 x 6			NC	-	-	-	-	19	24	29	34	38	41
18 x 12	16 x 14	28 x 8	1.37	1.34	CFM	137	274	411	548	685	822	959	1096	1233	1370
	22 x 10	38 x 6			NC	-	-	-	15	20	25	30	35	38	41
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	-	-	-	15	20	25	30	36	39	42
16 x 16	18 x 14	30 x 8	1.64	1.58	CFM	164	328	492	656	820	984	1148	1312	1476	1640
	22 x 12				NC	-	-	-	16	21	26	31	36	39	42
24 x 12	18 x 16	30 x 10	1.85	1.78	CFM	185	370	555	740	925	1110	1295	1480	1665	1850
	20 x 14	36 x 8			NC	-	-	-	16	21	26	31	36	39	43
18 x 18	20 x 16	28 x 12	2.10	2.01	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100
	24 x 14	32 x 10			NC	-	-	-	16	21	27	32	37	40	43
30 x 12	20 x 18	26 x 14	2.32	2.23	CFM	232	464	696	928	1160	1392	1624	1856	2088	2320
	22 x 16	36 x 10			NC	-	-	-	17	22	27	32	37	40	44
20 x 20	24 x 18	30 x 14	2.61	2.48	CFM	261	522	783	1044	1305	1566	1827	2088	2349	2610
	26 x 16	36 x 12			NC	-	-	-	17	22	28	33	38	41	44
22 x 22	24 x 20	30 x 16	3.17	3.00	CFM	317	634	951	1268	1585	1902	2219	2536	2853	3170
	26 x 18	36 x 14			NC	-	-	-	18	23	29	33	38	41	45
30 x 18	24 x 22	40 x 14	3.54	3.34	CFM	354	708	1062	1416	1770	2124	2478	2832	3186	3540
	34 x 16				NC	-	-	-	18	23	29	34	39	42	46
24 x 24	26 x 22	32 x 18	3.79	3.56	CFM	379	758	1137	1516	1895	2274	2653	3032	3411	3790
	28 x 20	36 x 16			NC	-	-	-	18	23	29	34	39	42	46
36 x 18	32 x 20	46 x 14	4.27	4.01	CFM	427	854	1281	1708	2135	2562	2989	3416	3843	4270
	40 x 16				NC	-	-	-	19	24	30	35	40	43	47
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	-	-	-	19	24	30	35	40	43	47
30 x 24	28 x 26	36 x 20	4.77	4.46	CFM	477	954	1431	1908	2385	2862	3339	3816	4293	4770
	32 x 22	40 x 18			NC	-	-	-	20	25	31	36	40	44	48
28 x 28	30 x 26	40 x 20	5.20	4.85	CFM	520	1040	1560	2080	2600	3120	3640	4160	4680	5200
	36 x 22				NC	-	-	-	20	25	31	36	41	44	48
36 x 24	30 x 28	44 x 20	5.74	5.35	CFM	574	1148	1722	2296	2870	3444	4018	4592	5166	5740
	40 x 22				NC	-	-	-	20	26	32	36	41	45	49
30 x 30	34 x 26	48 x 20	5.99	5.57	CFM	599	1198	1797	2396	2995	3594	4193	4792	5391	5990
	38 x 24				NC	-	-	-	20	26	32	37	41	45	49

GRILLES AND REGISTERS

Performance Data

Fixed Blade Return Grilles and Registers • Airfoil Blade 7100 Series

Models: 7145H, 7145V

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 .011	.006 .025	.010 .045	.016 .070	.022 .101	.031 .138	.040 .180	.050 .228	.062 .281
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	-	-	-	21	27	33	37	42	46	50
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	-	-	15	21	27	33	38	42	46	50
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	-	-	15	22	27	34	39	43	47	51
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	-	-	16	22	28	34	39	43	47	51
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	-	-	16	22	28	34	40	43	48	52
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	-	-	17	23	29	35	40	44	48	52
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				NC	-	-	17	23	29	35	40	44	48	52
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				NC	-	-	18	24	30	36	41	45	49	53
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				NC	-	-	18	24	30	36	41	45	49	53

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GRILLES AND REGISTERS

- 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 10⁻¹² watts.

Core Velocity is in feet per minute.

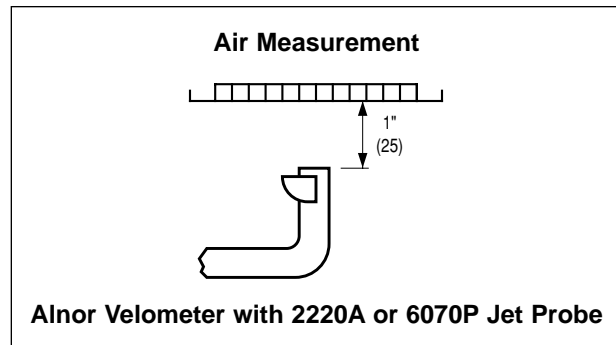
Performance Notes:

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 - 1991.



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_k in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

Performance Data

Fixed Blade Return Grilles and Registers • Airfoil Blade 7100 Series

Models: 71FH, 71FV

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 .002	.002 .007	.006 .017	.010 .030	.016 .047	.022 .067	.031 .092	.040 .120	.050 .152	.062 .187	
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	-	-	-	-	-	16	19	23	28		
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	17	20	24	29	
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	18	21	25	30	
8 x 8	14 x 5	0.38	0.40	CFM	38	76	114	152	190	228	266	304	342	380	
				NC	-	-	-	-	-	17	19	22	26	30	
12 x 6	18 x 4	0.42	0.45	CFM	42	84	126	168	210	252	294	336	378	420	
				NC	-	-	-	-	-	17	20	23	27	31	
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	-	-	-	-	-	17	20	24	28	32	
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	-	-	-	-	-	17	20	25	28	33	
18 x 6	14 x 8	30 x 4	0.65	0.67	CFM	65	130	195	260	325	390	455	520	585	650
	28 x 4				NC	-	-	-	-	-	18	21	25	29	33
12 x 10	16 x 8	20 x 6	0.74	0.74	CFM	74	148	222	296	370	444	518	592	666	740
	24 x 5				NC	-	-	-	-	-	19	22	26	30	33
12 x 12	14 x 10	24 x 6	0.90	0.89	CFM	90	180	270	360	450	540	630	720	810	900
	18 x 8	38 x 4			NC	-	-	-	-	15	19	22	27	30	33
14 x 14	16 x 12	24 x 8	1.24	1.22	CFM	124	248	372	496	620	744	868	992	1116	1240
	20 x 10	34 x 6			NC	-	-	-	-	15	20	23	27	31	34
18 x 12	16 x 14	28 x 8	1.37	1.34	CFM	137	274	411	548	685	822	959	1096	1233	1370
	22 x 10	38 x 6			NC	-	-	-	-	16	21	24	29	32	35
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	-	-	-	-	16	21	25	30	33	36
16 x 16	18 x 14	30 x 8	1.64	1.58	CFM	164	328	492	656	820	984	1148	1312	1476	1640
	22 x 12				NC	-	-	-	-	17	21	25	30	33	36
24 x 12	18 x 16	30 x 10	1.85	1.78	CFM	185	370	555	740	925	1110	1295	1480	1665	1850
	20 x 14	36 x 8			NC	-	-	-	-	17	22	25	30	33	37
18 x 18	20 x 16	28 x 12	2.10	2.01	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100
	24 x 14	32 x 10			NC	-	-	-	-	17	22	26	31	34	37
30 x 12	20 x 18	26 x 14	2.32	2.23	CFM	232	464	696	928	1160	1392	1624	1856	2088	2320
	22 x 16	36 x 10			NC	-	-	-	-	17	22	26	31	34	38
20 x 20	24 x 18	30 x 14	2.61	2.48	CFM	261	522	783	1044	1305	1566	1827	2088	2349	2610
	26 x 16	36 x 12			NC	-	-	-	-	17	22	26	31	34	38
22 x 22	24 x 20	30 x 16	3.17	3.00	CFM	317	634	951	1268	1585	1902	2219	2536	2853	3170
	26 x 18	36 x 14			NC	-	-	-	-	18	23	27	31	34	38
30 x 18	24 x 22	40 x 14	3.54	3.34	CFM	354	708	1062	1416	1770	2124	2478	2832	3186	3540
	34 x 16				NC	-	-	-	-	18	23	27	32	35	39
24 x 24	26 x 22	32 x 18	3.79	3.56	CFM	379	758	1137	1516	1895	2274	2653	3032	3411	3790
	28 x 20	36 x 16			NC	-	-	-	-	18	23	28	32	35	39
36 x 18	32 x 20	46 x 14	4.27	4.01	CFM	427	854	1281	1708	2135	2562	2989	3416	3843	4270
	40 x 16				NC	-	-	-	-	15	20	24	28	33	36
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	-	-	-	-	15	20	24	28	33	36
30 x 24	28 x 26	36 x 20	4.77	4.46	CFM	477	954	1431	1908	2385	2862	3339	3816	4293	4770
	32 x 22	40 x 18			NC	-	-	-	-	16	21	25	29	33	37
28 x 28	30 x 26	40 x 20	5.20	4.85	CFM	520	1040	1560	2080	2600	3120	3640	4160	4680	5200
	36 x 22				NC	-	-	-	-	16	21	25	29	34	37
36 x 24	30 x 28	44 x 20	5.74	5.35	CFM	574	1148	1722	2296	2870	3444	4018	4592	5166	5740
	40 x 22				NC	-	-	-	-	16	21	25	29	34	38
30 x 30	34 x 26	48 x 20	5.99	5.57	CFM	599	1198	1797	2396	2995	3594	4193	4792	5391	5990
	38 x 24				NC	-	-	-	-	16	21	26	30	34	38

GRILLES AND REGISTERS

Performance Data

Fixed Blade Return Grilles and Registers • Airfoil Blade 7100 Series

Models: 71FH, 71FV

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 .002	.002 .007	.006 .017	.010 .030	.016 .047	.022 .067	.031 .092	.040 .120	.050 .152	.062 .187
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	22	26	30	35	39	43
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	–	–	–	16	22	27	31	35	39	43
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	22	27	32	36	40	44
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	–	–	–	17	23	28	32	36	40	44
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	28	33	36	41	45
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	–	–	–	18	24	29	33	37	41	45
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				NC	–	–	–	18	24	29	33	37	41	45
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				NC	–	–	–	19	25	30	34	38	42	46
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				NC	–	–	–	19	25	30	34	38	42	46

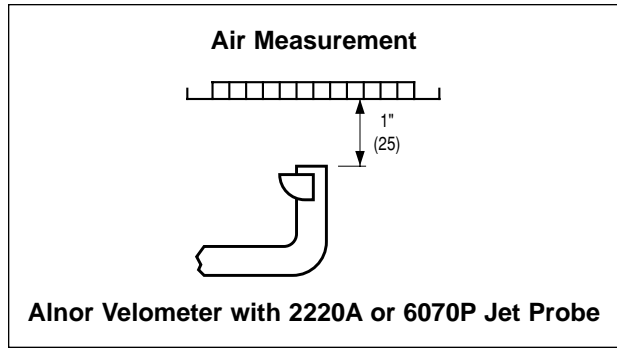
GRILLES AND REGISTERS

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- Neg. SP** - negative static pressure - inches w.g.
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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 – 1991.



Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
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3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
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Airflow (CFM) = Average velocity (V_k) x Ak.