

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS • 51D00-HD SERIES

MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		200	300	400	500	600	700	800	900	1000
				Velocity	Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062
6 x 6	8 x 4 10 x 4	0.20		CFM		40	60	80	100	120	140	160	180	200
				Noise Criteria		–	–	–	–	24	29	33	36	39
				Throw	0°	2-5-10	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	14-17-24	15-18-25
22 1/2°	2-4-8	4-6-10	6-7-13		6-10-14	8-11-16	9-12-17	10-13-18	11-14-19	12-14-20				
45°	1-2-5	3-4-7	4-5-8		5-7-10	6-8-11	6-8-12	7-8-12	8-9-13					
8 x 6	10 x 5 12 x 4	0.27		CFM		54	81	108	135	162	189	216	243	270
				Noise Criteria		–	–	–	20	25	30	34	37	40
				Throw	0°	2-5-12	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	16-20-28	17-21-30
22 1/2°	2-4-10	4-6-12	6-10-14		8-11-16	9-13-18	10-14-20	12-15-22	13-16-22	14-17-24				
45°	1-2-6	3-4-8	4-6-9		5-7-10	6-8-12	7-9-13	8-10-14	8-10-14	9-11-15				
10 x 6	12 x 5 16 x 4	0.35		CFM		70	105	140	175	210	245	280	315	350
				Noise Criteria		–	–	–	21	26	31	35	38	41
				Throw	0°	3-6-14	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	19-22-31	20-23-33
22 1/2°	2-5-11	5-7-14	7-10-17		8-13-19	10-15-21	12-16-22	14-17-24	15-18-25	16-18-26				
45°	1-3-7	3-5-9	5-7-11		5-8-12	6-10-13	8-10-14	9-11-15	9-11-15	10-12-17				
8 x 8	14 x 5	0.38		CFM		76	114	152	190	228	266	304	342	380
				Noise Criteria		–	–	–	22	27	33	36	39	43
				Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	18-23-32	19-24-34
22 1/2°	2-5-12	5-7-15	7-11-18		9-13-20	10-15-22	13-17-23	14-18-26	14-18-26	15-19-27				
45°	1-3-7	3-5-10	5-7-11		6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17				
12 x 6	18 x 4	0.42		CFM		84	126	168	210	252	294	336	378	420
				Noise Criteria		–	–	–	22	27	33	36	39	42
				Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	18-23-32	19-11-16
22 1/2°	2-5-12	5-7-15	7-11-18		9-13-20	10-15-22	13-17-24	14-18-26	14-18-26	15-19-27				
45°	1-3-7	3-5-10	5-7-11		6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17				
14 x 6	10 x 8	0.50		CFM		100	150	200	250	300	350	400	450	500
				Noise Criteria		–	–	16	23	28	33	37	40	43
				Throw	0°	3-7-16	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	20-24-34	21-25-36
22 1/2°	2-6-13	5-9-16	8-12-18		10-14-20	12-16-22	13-18-25	15-18-26	16-19-27	17-20-29				
45°	1-3-8	3-6-10	5-8-12		6-9-13	8-10-14	8-11-16	10-12-17	10-12-17	11-13-18				
12 x 8	16 x 6 24 x 4	0.58		CFM		116	174	232	290	348	406	464	522	580
				Noise Criteria		–	–	17	25	29	34	38	41	44
				Throw	0°	3-7-17	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	21-26-36	22-27-38
22 1/2°	2-6-14	6-9-17	8-12-19		10-15-22	12-17-24	14-18-26	16-19-27	17-21-29	18-22-30				
45°	1-3-8	4-6-11	5-8-12		6-10-14	8-11-15	9-12-16	10-12-17	10-13-18	11-14-19				
10 x 10	14 x 7 26 x 4	0.61		CFM		122	183	244	305	366	427	488	549	610
				Noise Criteria		–	–	17	24	29	34	38	41	44
				Throw	0°	3-7-17	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	22-27-37	23-28-39
22 1/2°	2-6-14	6-9-17	8-13-19		10-15-22	13-17-24	14-18-26	16-19-28	18-22-30	18-22-31				
45°	1-3-8	4-6-11	5-8-12		7-10-14	8-11-15	9-12-16	10-12-18	11-13-18	12-14-20				
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		130	195	260	325	390	455	520	585	650
				Noise Criteria		–	–	19	25	30	35	39	42	45
				Throw	0°	3-8-18	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	23-27-38	24-29-40
22 1/2°	2-6-14	6-10-18	9-13-20		10-16-23	13-18-26	14-19-27	17-20-29	18-22-30	19-23-32				
45°	1-3-9	4-6-11	6-8-13		7-10-15	8-11-16	9-12-17	11-13-18	11-13-19	12-15-20				
12 x 10	20 x 6 24 x 5	0.74		CFM		148	222	296	370	444	518	592	666	740
				Noise Criteria		–	–	18	25	30	35	39	42	45
				Throw	0°	4-8-19	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	24-29-41	25-31-43
22 1/2°	3-6-15	6-10-19	9-14-22		11-17-25	14-19-26	16-21-29	18-22-31	19-23-33	20-25-34				
45°	1-3-9	4-7-12	6-9-14		7-11-16	9-12-17	10-13-18	11-14-20	11-14-20	13-16-22				
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		160	240	320	400	480	560	640	720	800
				Noise Criteria		–	–	19	26	31	36	40	43	46
				Throw	0°	4-8-20	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	25-30-43	26-32-45
22 1/2°	3-6-16	6-10-20	9-14-22		12-18-26	14-20-28	16-22-30	18-22-33	20-24-34	21-26-36				
45°	1-3-10	4-7-13	6-9-14		8-11-16	9-13-18	10-14-19	12-14-21	12-15-21	13-16-23				
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		180	270	360	450	540	630	720	810	900
				Noise Criteria		–	–	19	26	31	36	40	43	46
				Throw	0°	4-9-21	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	26-31-45	27-33-47
22 1/2°	3-7-17	7-11-21	10-14-23		12-18-26	14-21-29	17-22-31	19-23-34	21-25-36	22-26-38				
45°	1-4-10	5-7-13	6-9-15		8-12-17	9-13-18	11-14-20	12-15-21	13-15-22	14-17-24				

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MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		200	300	400	500	600	700	800	900	1000	
				Velocity	Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062	
18 x 10	30 x 6	1.13		CFM		226	339	452	565	678	791	904	1130	1130	
				Noise Criteria		–	–	20	27	32	37	41	44	44	47
				Throw	0°	4-10-23	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	28-34-48	30-36-51	
22 1/2°	3-8-18	7-12-23	11-16-26		14-20-29	16-23-32	19-24-34	22-26-37	22-27-38	24-29-41					
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM		248	372	496	620	744	868	992	1116	1240	
				Noise Criteria		–	–	20	27	32	37	41	44	47	
				Throw	0°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-40-57	35-42-60	
22 1/2°	4-10-21	9-14-26	13-20-31		16-23-34	19-26-38	22-29-41	25-31-43	26-32-46	28-34-48					
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM		274	411	548	685	822	959	1096	1233	1370	
				Noise Criteria		–	–	21	28	33	38	42	45	48	
				Throw	0°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-41-58	35-43-61	
22 1/2°	4-10-21	9-14-26	13-20-31		16-23-34	19-26-38	22-29-41	25-31-43	26-32-46	28-34-49					
24 x 10	20 x 12 30 x 8	1.52		CFM		304	456	608	760	912	1064	1216	1368	1520	
				Noise Criteria		–	–	21	28	33	38	42	45	48	
				Throw	0°	6-12-28	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	35-43-61	37-45-64	
22 1/2°	5-10-22	10-15-28	13-20-33		17-26-36	20-28-40	23-30-42	27-33-46	28-34-49	30-36-51					
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM		328	492	656	820	984	1148	1312	1476	1640	
				Noise Criteria		–	–	21	28	33	38	42	45	48	
				Throw	0°	6-13-30	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	37-45-64	39-47-67	
22 1/2°	5-10-24	10-16-30	14-21-34		18-26-38	21-30-41	25-32-45	28-34-47	30-36-51	31-38-54					
24 x 12	18 x 16 22 x 14 30 x 10 36 x 8	1.85		CFM		370	555	740	925	1110	1295	1480	1665	1850	
				Noise Criteria		–	15	22	29	34	39	43	46	49	
				Throw	0°	6-13-30	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	38-46-65	40-48-69	
22 1/2°	5-10-24	10-16-30	14-22-35		18-26-38	22-30-43	26-32-46	29-35-50	30-37-52	32-38-55					
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM		420	630	840	1050	1260	1470	1680	1890	2100	
				Noise Criteria		–	15	22	29	34	39	43	46	49	
				Throw	0°	6-14-32	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	40-49-70	42-52-74	
22 1/2°	5-11-26	10-17-32	15-23-38		19-29-42	23-32-46	26-34-50	30-38-53	32-39-66	34-42-59					
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM		464	696	928	1160	1392	1624	1856	2088	2320	
				Noise Criteria		–	16	23	30	35	40	44	47	50	
				Throw	0°	7-15-34	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	44-53-75	46-56-79	
22 1/2°	6-12-27	11-18-34	17-25-40		21-31-45	25-34-49	29-38-54	33-40-57	35-42-60	32-45-63					
24 x 16	32 x 12	2.50		CFM		500	750	1000	1250	1500	1750	2000	2250	2500	
				Noise Criteria		–	16	23	30	35	40	44	47	50	
				Throw	0°	7-16-36	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	46-55-78	48-58-82	
22 1/2°	6-13-29	11-19-36	18-26-42		22-32-46	26-36-51	30-39-54	34-42-59	37-44-62	38-46-66					
20 x 20	22 x 18	2.61		CFM		522	783	1044	1305	1566	1827	2088	2349	2610	
				Noise Criteria		–	16	23	30	35	40	44	47	50	
				Throw	0°	7-16-37	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	46-56-80	49-59-84	
22 1/2°	6-13-30	12-19-37	18-26-42		22-33-47	26-37-52	30-40-56	35-42-60	37-45-64	39-47-67					
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM		558	837	1116	1395	1674	1953	2232	2511	2790	
				Noise Criteria		–	16	23	30	35	40	44	47	50	
				Throw	0°	7-16-38	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	47-58-82	50-61-86	
22 1/2°	6-13-30	12-20-38	18-27-44		22-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-69					
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM		634	951	1268	1585	1902	2219	2536	2853	3170	
				Noise Criteria		–	17	24	31	36	41	45	48	51	
				Throw	0°	8-18-40	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	50-62-87	53-65-92	
22 1/2°	6-14-32	14-22-40	19-29-46		23-36-52	29-40-57	34-43-62	38-46-66	40-50-70	42-52-74					
						45°	4-9-20	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	25-31-43	

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ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS • 51D00-HD SERIES

MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		200	300	400	500	600	700	800	900	1000
				Velocity	Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062
				0°	22 1/2°	.014	.031	.057	.088	.127	.174	.228	.287	.353
42 x 12	36 x 14	3.27	1.68 1.56 1.44	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	8-18-41	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	50-63-88	53-66-93
30 x 18	24 x 22 34 x 16 40 x 14	3.54	1.81 1.68 1.56	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	9-18-42	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	53-65-92	56-69-97
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79	1.93 1.80 1.66	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	9-19-44	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	54-66-94	57-70-99
36 x 18	32 x 20 40 x 16 46 x 14	4.29	2.18 2.03 1.87	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	9-20-46	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	58-71-101	61-75-106
26 x 26	28 x 24 48 x 14	4.47	2.25 2.10 1.93	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	9-21-47	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	60-73-103	63-77-109
30 x 24	32 x 22 36 x 20 40 x 18	4.77	2.42 2.25 2.08	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	10-22-49	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	62-75-106	65-79-112
28 x 28	30 x 26 36 x 22 40 x 20	5.20	2.66 2.48 2.29	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	10-22-50	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	64-78-110	67-82-116
36 x 24	40 x 22 44 x 20	5.74	2.91 2.71 2.50	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	11-24-54	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	68-84-118	72-88-124
42 x 24	36 x 28 42 x 24 46 x 22	6.72	3.40 3.16 2.31	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	12-26-58	24-39-72	34-51-83	43-64-93	51-72-102	60-78-111	68-84-118	73-88-125	77-93-132
36 x 30	38 x 28	7.22	3.64 3.39 3.13	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	12-26-61	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	76-93-132	80-98-139
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	3.88 3.61 3.34	CFM	0°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				Noise Criteria	45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
				Throw	0°	13-27-62	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	78-95-135	82-200-142

Performance Notes:

- Performance data is based on Models 51DFH-HD and 51DFV-HD with 0° deflection front blades. For 15° and 30° deflection models, use: —
- Tabulated data includes OBD (damper). Without OBD, multiply Total Pressure (TP) by 0.8. Subtract 4 NC from the NC value given.

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria values were obtained using a 0° horizontal deflection near blade setting. For deflection settings of 22 1/2° and 45°, add 2 and 7 Noise Criteria (NC) to the tabulated NC level respectively.

- Data derived from tests conducted with ANSI/ASHRAE Standard 70 – 2023.

Correction Factor

Model	Deflection	TP	NC
51D15	15°	x 1.2	+ 3
51D30	30°	x 1.5	+ 7