

## PERFORMANCE NOTES FOR HEAVY DUTY SUPPLY GRILLES AND REGISTERS: MODEL SERIES: 6100-HD

### 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.

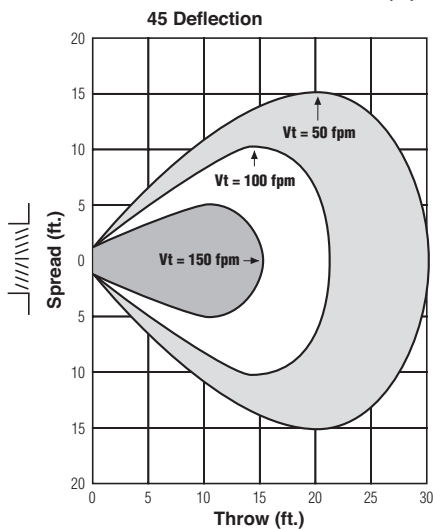
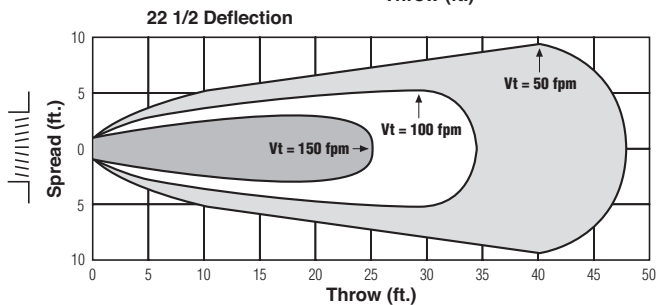
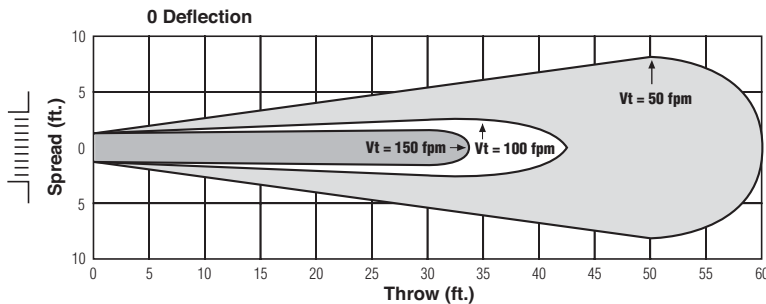
Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by 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 ( $\Delta T$ ) 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  $\Delta T$ ) 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 Deflection Factor	x .80	x .83	x .89
Single Deflection Factor	x .73	x .76	x .85

### 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:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
6 x 6	8 x 4 10 x 4	0.20		CFM		60	80	100	120	140	160	200	240	280
				Noise Criteria		-	-	-	-	19	23	29	35	40
				Throw	0°	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	15-18-25	16-20-27	17-21-30
22 1/2°	4-6-10	6-7-13	6-10-14		8-11-16	9-12-17	10-13-18	12-14-20	13-16-22	14-17-24				
8 x 6	10 x 5 12 x 4	0.27		CFM		81	108	135	162	189	216	270	324	378
				Noise Criteria		-	-	-	15	20	24	30	36	41
				Throw	0°	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	17-21-30	18-23-32	19-24-35
22 1/2°	4-6-12	6-10-14	8-11-16		9-13-18	10-14-20	12-15-22	14-17-24	14-18-26	15-19-28				
10 x 6	12 x 5 16 x 4	0.35		CFM		105	140	175	210	245	280	350	420	490
				Noise Criteria		-	-	-	16	21	25	31	37	42
				Throw	0°	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	20-23-33	21-25-36	22-27-39
22 1/2°	5-7-14	7-10-17	8-13-19		10-15-21	12-16-22	14-17-24	16-18-26	17-20-29	18-22-31				
8 x 8	14 x 5	0.38		CFM		114	152	190	228	266	304	380	456	532
				Noise Criteria		-	-	-	17	22	26	32	38	43
				Throw	0°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	19-24-34	21-26-37	23-28-40
22 1/2°	5-7-15	7-11-18	9-13-20		10-15-22	13-17-23	14-18-26	15-19-27	17-21-30	18-22-32				
12 x 6	18 x 4	0.42		CFM		126	168	210	252	294	336	420	504	588
				Noise Criteria		-	-	-	17	22	26	32	38	43
				Throw	0°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	19-24-34	21-28-38	23-29-41
22 1/2°	5-7-15	7-11-18	9-13-20		10-15-22	13-17-24	14-18-26	15-19-27	17-22-30	18-23-33				
14 x 6	10 x 8	0.50		CFM		150	200	250	300	350	400	500	600	700
				Noise Criteria		-	-	-	18	23	27	33	39	44
				Throw	0°	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	21-25-36	23-28-40	25-31-43
22 1/2°	5-9-16	8-12-18	10-14-20		12-16-22	13-18-25	15-18-26	17-20-29	18-22-32	20-25-34				
12 x 8	16 x 6 24 x 4	0.58		CFM		174	232	290	348	406	464	580	696	812
				Noise Criteria		-	-	-	19	24	28	34	40	45
				Throw	0°	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	22-27-38	24-30-42	26-32-45
22 1/2°	6-9-17	8-12-19	10-15-22		12-17-24	14-18-26	16-19-27	18-22-30	19-24-34	21-26-36				
10 x 10	14 x 7 26 x 4	0.61		CFM		183	244	305	366	427	488	610	732	854
				Noise Criteria		-	-	-	19	24	28	34	40	45
				Throw	0°	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	23-28-39	24-30-42	27-32-46
22 1/2°	6-9-17	8-13-19	10-15-22		13-17-24	14-18-26	16-19-28	18-22-31	19-24-34	22-26-37				
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		195	260	325	390	455	520	650	780	910
				Noise Criteria		-	-	15	20	25	29	35	41	46
				Throw	0°	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	24-29-40	25-32-45	28-34-48
22 1/2°	6-10-18	9-13-20	10-16-23		13-18-26	14-19-27	17-20-29	19-23-32	20-26-36	22-27-38				
12 x 10	20 x 6 24 x 5	0.74		CFM		222	296	370	444	518	592	740	888	1036
				Noise Criteria		-	-	15	20	25	29	35	41	46
				Throw	0°	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	25-31-43	27-33-48	30-36-51
22 1/2°	6-10-19	9-14-22	11-17-25		14-19-26	16-21-29	18-22-31	20-25-34	22-26-38	24-29-41				
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		240	320	400	480	560	640	800	960	1120
				Noise Criteria		-	-	16	21	26	30	36	42	47
				Throw	0°	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	26-32-45	28-35-50	31-38-53
22 1/2°	6-10-20	9-14-22	12-18-26		14-20-28	16-22-30	18-22-33	21-26-36	22-28-40	25-30-42				
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		270	360	450	540	630	720	900	1080	1260
				Noise Criteria		-	-	16	21	26	30	36	42	47
				Throw	0°	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	27-33-47	29-36-51	32-39-56
22 1/2°	7-11-21	10-14-23	12-18-26		14-21-29	17-22-31	19-23-34	22-26-38	23-29-41	26-31-45				
						45°	5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	14-17-24	15-18-26

GRILLES AND REGISTERS

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For performance data notes, see F156.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
18 x 10	30 x 6	1.13		CFM	0°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				Noise Criteria	22 1/2°	.026	.046	.072	.103	.142	.186	.289	.417	.567
				Throw	45°	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	30-36-51	33-40-57	35-43-61
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM	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
				Noise Criteria	22 1/2°	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57
				Throw	45°	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	18-21-30	20-24-33	21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM	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
				Noise Criteria	22 1/2°	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	28-34-49	31-38-54	33-41-58
				Throw	45°	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-31	20-24-34	21-26-36
24 x 10	20 x 12 30 x 8	1.52		CFM	0°	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	37-45-65	41-50-70	43-53-76
				Noise Criteria	22 1/2°	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	30-36-51	33-40-56	37-45-63
				Throw	45°	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	19-23-32	21-25-35	22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM	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
				Noise Criteria	22 1/2°	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	31-38-54	34-41-58	37-45-63
				Throw	45°	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	20-24-34	21-26-37	23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM	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
				Noise Criteria	22 1/2°	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	32-38-55	35-43-61	38-46-66
				Throw	45°	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	20-24-35	22-27-38	24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM	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
				Noise Criteria	22 1/2°	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	34-42-59	38-46-65	40-50-70
				Throw	45°	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	21-26-37	24-29-41	25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM	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
				Noise Criteria	22 1/2°	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	32-45-63	40-49-69	43-54-75
				Throw	45°	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	23-28-40	25-31-43	27-34-47
24 x 16	32 x 12	2.50		CFM	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
				Noise Criteria	22 1/2°	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	38-46-66	42-51-72	45-54-78
				Throw	45°	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	24-29-41	26-32-45	28-34-49
20 x 20	22 x 18	2.61		CFM	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
				Noise Criteria	22 1/2°	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	39-47-67	42-52-74	46-56-79
				Throw	45°	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	25-30-42	28-34-48	30-37-52
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM	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
				Noise Criteria	22 1/2°	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	40-49-69	44-54-76	47-58-82
				Throw	45°	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	25-31-43	28-34-48	30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM	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
				Noise Criteria	22 1/2°	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	42-52-74	46-57-81	50-62-87
				Throw	45°	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	27-33-46	29-36-51	31-39-55

For performance data notes, see F156.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400	
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122	
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324	
				22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373		
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567		
42 x 12	36 x 14	3.27		CFM		981	1308	1635	1962	2289	2616	3270	3924	4578	
				Noise Criteria		-	-	21	26	31	35	41	47	52	
			2.22	Throw	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	
				22 1/2°	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	42-53-74	47-58-81	50-62-87		
				45°	9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	27-33-47	3-36-51	32-39-55		
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM		1062	1416	1770	2124	2478	2832	3540	4248	4956	
				Noise Criteria		-	-	21	26	31	35	41	47	52	
			2.41	Throw	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	
				22 1/2°	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	45-55-78	49-60-85	53-65-92		
				45°	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	28-35-49	31-38-53	33-41-58		
24 x 24	32 x 20 40 x 16 46 x 14	?		CFM		1137	1516	1895	2274	2653	3032	3790	4548	5306	
				Noise Criteria		-	-	21	26	31	35	41	47	52	
			2.58	Throw	0°	18-29-55	29-36-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117	
				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		
				45°	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	29-35-50	31-39-54	34-42-59		
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM		1287	1716	2145	2574	3003	3432	4290	5148	6006	
				Noise Criteria		-	15	22	27	32	36	42	48	53	
			3.04	Throw	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	
				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		
				45°	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	31-38-53	34-42-59	37-45-63		
26 x 26	28 x 24 48 x 14	4.47		CFM		1341	1788	2235	2682	3129	3576	4470	5364	6258	
				Noise Criteria		-	15	22	27	32	36	42	48	53	
			3.04	Throw	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	
				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		
				45°	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65		
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM		1431	1908	2385	2862	3339	3816	4770	5724	6678	
				Noise Criteria		-	15	22	27	32	36	42	48	53	
			3.24	Throw	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	
				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		
				45°	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	33-40-56	36-44-62	39-47-67		
42 x 18	28 x 26	4.99		CFM		1497	1997	2495	2994	3493	3992	4990	5988	6986	
				Noise Criteria		-	16	23	28	33	37	43	49	54	
			3.39	Throw	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	
				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		
				45°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	30-36-51	33-40-57	36-44-63	39-48-68		
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM		1560	2080	2600	3120	3640	4160	5200	6240	7280	
				Noise Criteria		-	16	23	28	33	37	43	49	54	
			3.54	Throw	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	
				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		
				45°	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	34-41-58	37-45-64	40-49-69		
42 x 20	30 x 28	5.57		CFM		1671	2228	2785	3342	3899	4456	5570	6684	7798	
				Noise Criteria		-	16	23	28	33	37	43	49	54	
			3.79	Throw	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	
				22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114		
				45°	11-18-33	16-24-38	20-29-42	24-33-47	28-36-50	31-38-54	35-42-60	38-47-66	41-50-71		
36 x 24	40 x 22 44 x 20	5.74		CFM		1722	2296	2870	3444	4018	4592	5740	6888	8036	
				Noise Criteria		-	16	23	28	33	37	43	49	54	
			3.90	Throw	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	
				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		
				45°	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	36-44-62	39-48-69	43-52-74		
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM		1797	2396	2995	3594	4193	4792	5990	7188	8386	
				Noise Criteria		-	16	23	28	33	37	43	49	54	
			4.07	Throw	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	
				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		
				45°	12-18-35	17-25-40	21-31-45	25-35-49	29-38-53	32-40-57	37-45-63	40-49-69	43-53-75		
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM		2016	2688	3360	4032	4704	5376	6720	8064	9408	
				Noise Criteria		-	17	24	29	34	38	44	50	55	
			4.57	Throw	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	
				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		
				45°	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	39-47-66	42-51-72	45-56-79		

For performance data notes, see F156.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
				0°	22 1/2°	.015	.026	.041	.059	.081	.106	.165	.238	.324
32 x 32	40 x 26	6.84	4.65 4.04 3.52	CFM		2052	2736	3420	4104	4788	5472	6840	8208	9576
				Noise Criteria		-	17	24	29	34	38	44	50	55
				Throw	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
36 x 30	38 x 28	7.22	4.91 4.26 3.72	CFM		2166	2888	3610	4332	5054	5776	7220	8664	10108
				Noise Criteria		-	17	24	29	34	38	44	50	55
				Throw	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
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	5.23 4.54 3.96	CFM		2307	3076	3845	4614	5383	6152	7690	9228	10766
				Noise Criteria		-	18	25	30	35	39	45	51	56
				Throw	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
36 x 34	38 x 32 40 x 30 48 x 26	8.20	5.58 4.84 4.22	CFM		2460	3280	4100	4920	5740	6560	8200	9840	11480
				Noise Criteria		-	18	25	30	35	39	45	51	56
				Throw	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
36 x 36	38 x 34 42 x 30 46 x 28	8.69	5.91 5.13 4.48	CFM		2607	3476	4345	5214	6083	6952	8690	10428	12166
				Noise Criteria		-	18	25	30	35	39	45	51	56
				Throw	0°	28-45-84	36-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
38 x 38	42 x 34	9.70	6.60 5.72 5.00	CFM		2910	3880	4850	5820	6790	7760	9700	11640	13580
				Noise Criteria		-	19	26	31	36	40	46	52	57
				Throw	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
42 x 36	44 x 34 48 x 30	10.16	6.91 5.99 5.23	CFM		3048	4064	5080	6096	7112	8128	10160	12192	14224
				Noise Criteria		-	19	26	31	36	40	46	52	57
				Throw	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
40 x 40	42 x 38 46 x 34 48 x 32	10.77	7.32 6.35 5.55	CFM		3231	4308	5385	6462	7539	8616	10770	12924	15078
				Noise Criteria		-	19	26	31	36	40	46	52	57
				Throw	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
42 x 42	44 x 40 46 x 38 48 x 36	11.89	8.09 7.02 6.12	CFM		3567	4756	5945	7134	8323	9512	11890	14268	16646
				Noise Criteria		-	20	27	32	37	41	47	53	58
				Throw	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	122-145-210
44 x 44	46 x 42	13.07	8.89 7.71 6.73	CFM		3921	5228	6535	7842	9149	10456	13070	15684	18298
				Noise Criteria		-	20	27	32	37	41	47	53	58
				Throw	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
46 x 46	14.30	9.72 8.44 7.36	CFM		4290	5720	7150	8580	10010	11440	14300	17160	20020	
			Noise Criteria		-	20	27	32	37	41	47	53	58	
			Throw	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	
48 x 48	15.59	10.60 9.20 8.03	CFM		4677	6236	7795	9354	10913	12472	15590	18708	21826	
			Noise Criteria		-	21	28	33	38	42	48	54	59	
			Throw	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	

#### 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 F152.

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