

## MODEL 4500

The 4500 series heavy duty return grille is designed for applications such as gymnasiums, manufacturing facilities, warehouses and public areas. The border and deflection blades are heavy gauge steel and built to withstand moderate physical abuse.

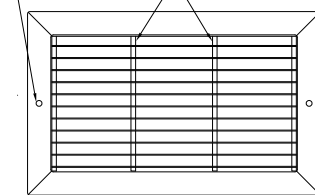
- All steel construction with 1 1/4" borders
- Available with 0° and 38° Fixed Deflection
- Supported on Minimum 6" Centers
- Optional OBDE Damper



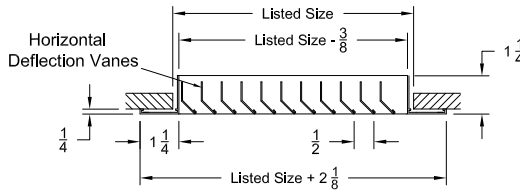
□ **Model: 4500-1 ( 0° Deflection Grille - Surface Mount - Horizontal Fixed Blades )**



Face view ( Models: 4500-1 & 4538-1 )  
Countersunk Mounting Holes  
Support bars on maximum 6" centers



□ **Model: 4538-1 ( 38° Deflection Grille - Surface Mount - Horizontal Fixed Blades )**

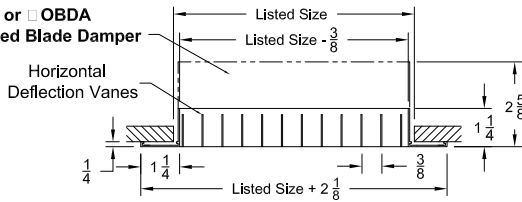


□ **Option: □ 4500-1 ( 0° Deflection Register )  
With Opposed Blade Damper**

Options:

□ OBD or □ OBDA

Opposed Blade Damper

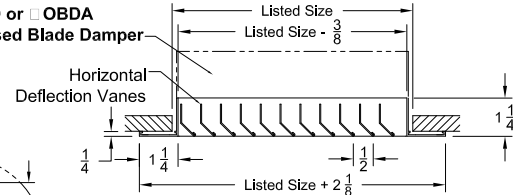


□ **Option: □ 4538-1 ( 38° Deflection Register )  
With Opposed Blade Damper**

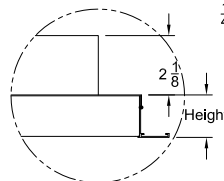
Options:

□ OBD or □ OBDA

Opposed Blade Damper



□ TR Transition Square / Rectangular  
To Round



**SERIES 4500 SPECIFICATIONS****RETURN — HEAVY DUTY GYM GRILLE —  
STEEL — MODELS 4500/4538**

- Air Inlets shall be model 4500 (0° deflection) or 4538 (38° deflection) manufactured by METALAIRE. Units shall be return or exhaust grilles constructed of 14 gauge deflector blades and 16 gauge borders. The grilles shall be designed to withstand moderate physical abuse. The units shall be the size and quantity as outlined in the plans and specifications.
- Border shall be 1 1/4" wide with aerodynamically shaped deflector blades on 2/3" center. Deflector blades shall be fixed. Units shall be designed for surface mounting applications and be provided with countersunk screw holes on the face of the device.
- Optional opposed blade damper shall be constructed of steel (Model OBD) or aluminum (Model OBDA).
- Damper must be operable from the face of the diffuser.

**Performance Specification**

The manufacturer shall provide published performance data. Data shall be tested in accordance to ANSI/ASHRAE Standard 70-2006.

**Paint Specification**

Process shall be anodic electro-deposition using an anodic acrylic paint. Units shall undergo pre-treatment including a pressurized spray stage using an alkaline cleaner and a de-ionized water rinse.

## SERIES 4500 MODEL NUMBER SPECIFICATION HEAVY DUTY GYM GRILLE — STEEL — SURFACE MOUNT

Model		Neck											
4500	0° Deflection		6	8	10	12	14	16	18	20	22	24	26
4538	38° Deflection	4	X	X	X	X	X	X	X	X	X	X	X
		5	X	X	X	X	X	X	X	X	X	X	X
		6	X	X	X	X	X	X	X	X	X	X	X
		8	X	X	X	X	X	X	X	X	X	X	X
		10	X	X	X	X	X	X	X	X	X	X	X
		12	X	X	X	X	X	X	X	X	X	X	X
		14	X	X	X	X	X	X	X	X	X	X	X
		16	X	X	X	X	X	X	X	X	X	X	X
		18	X	X	X	X	X	X	X	X	X	X	X
		20	X	X	X	X	X	X	X	X	X	X	X
		22	X	X	X	X	X	X	X	X	X	X	X
		24	X	X	X	X	X	X	X	X	X	X	X
		26	X	X	X	X	X	X	X	X	X	X	X
		28	X	X	X	X	X	X	X	X	X	X	X
		30	X	X	X	X	X	X	X	X	X	X	X
		32	X	X	X	X	X	X	X	X	X	X	X
		34	X	X	X	X	X	X	X	X	X	X	X
		36	X	X	X	X	X	X	X	X	X	X	X
		38	X	X	X	X	X	X	X	X	X	X	X
		40	X	X	X	X	X	X	X	X	X	X	X
		42	X	X	X	X	X	X	X	X	X	X	X
		44	X	X	X	X	X	X	X	X	X	X	X
		46	X	X	X	X	X	X	X	X	X	X	X
		48	X	X	X	X	X	X	X	X	X	X	X

Available Finishes		Available Accessories	
<b>Standard</b>		OBDA	Aluminum Opposed Blade Damper
01	White	L9	Equalizing Grid
<b>Optional</b>		PF	Plaster Frame
02	Satin Silver	IS	Insect Screen
03	Black	TR	Square to Round Transition
28	Custom Color	TR Deep	Deep Square to Round Transition

Available Options	
NSH	No Screw Holes
CM	Concealed Mounting

## SERIES 4500 MODEL NUMBER SPECIFICATION

### HEAVY DUTY GYM GRILLE — STEEL — SURFACE MOUNT

Model		Neck											
4500	0° Deflection		28	30	32	34	36	38	40	42	44	46	48
4538	38° Deflection	4	X	X	X	X	X	X	X	X	X	X	X
		5	X	X	X	X	X	X	X	X	X	X	X
		6	X	X	X	X	X	X	X	X	X	X	X
		8	X	X	X	X	X	X	X	X	X	X	X
		10	X	X	X	X	X	X	X	X	X	X	X
		12	X	X	X	X	X	X	X	X	X	X	X
		14	X	X	X	X	X	X	X	X	X	X	X
		16	X	X	X	X	X	X	X	X	X	X	X
		18	X	X	X	X	X	X	X	X	X	X	X
		20	X	X	X	X	X	X	X	X	X	X	X
		22	X	X	X	X	X	X	X	X	X	X	X
		24	X	X	X	X	X	X	X	X	X	X	X
		26	X	X	X	X	X	X	X	X	X	X	X
		28	X	X	X	X	X	X	X	X	X	X	X
		30	X	X	X	X	X	X	X	X	X	X	X
		32	X	X	X	X	X	X	X	X	X	X	X
		34	X	X	X	X	X	X	X	X	X	X	X
		36	X	X	X	X	X	X	X	X	X	X	X
		38	X	X	X	X	X	X	X	X	X	X	X
		40	X	X	X	X	X	X	X	X	X	X	X
		42	X	X	X	X	X	X	X	X	X	X	X
		44	X	X	X	X	X	X	X	X	X	X	X
		46	X	X	X	X	X	X	X	X	X	X	X
		48	X	X	X	X	X	X	X	X	X	X	X

Available Finishes		Available Accessories	
<b>Standard</b>		OBDA	Aluminum Opposed Blade Damper
01	White	L9	Equalizing Grid
<b>Optional</b>		PF	Plaster Frame
02	Satin Silver	IS	Insect Screen
03	Black	TR	Square to Round Transition
28	Custom Color	TR Deep	Deep Square to Round Transition

Available Options	
NSH	No Screw Holes
CM	Concealed Mounting

## SERIES 4500 PERFORMANCE DATA MODEL 4500

Size	Duct Area ft <sup>2</sup>	Nk Vel	300	400	500	600	700	800	900	1000	1200
		Ps	-.012	-.022	-.034	-.049	-.067	-.087	-.110	-.136	-.196
06x06	.25	CFM	63	84	105	126	147	168	189	210	252
		NC	-	-	-	-	20	22	27	28	32
08x06	.33	CFM	86	115	143	172	201	229	258	286	344
		NC	-	-	-	-	21	23	28	29	33
08x08	.44	CFM	117	156	195	234	273	313	352	391	469
		NC	-	-	-	-	26	25	30	31	35
12x06	.50	CFM	132	176	220	264	307	351	395	439	527
		NC	-	-	-	-	23	25	30	31	35
16x06 12x08	.67	CFM	180	240	299	359	419	479	539	599	719
		NC	-	-	-	21	25	27	32	33	37
12x10	.83	CFM	228	303	379	455	531	607	683	759	910
		NC	-	-	-	22	26	28	33	34	38
24x06 12x12	1.00	CFM	276	367	459	551	643	735	827	918	1102
		NC	-	-	-	22	26	28	33	34	38
14x12	1.16	CFM	323	431	539	647	755	863	970	1078	1294
		NC	-	-	20	23	27	29	34	35	39
14x14	1.36	CFM	380	506	633	759	886	1013	1139	1139	1524
		NC	-	-	21	24	28	30	35	36	40
18x18	2.25	CFM	638	851	1063	1276	1489	1701	1914	2127	2552
		NC	-	21	23	26	30	32	37	38	42
24x12 18x16	2.00	CFM	563	751	938	1126	1314	1501	1689	1877	2252
		NC	-	20	22	25	29	31	36	37	41
24x18	3.00	CFM	857	1142	1428	1714	1999	2285	2570	2856	3427
		NC	-	22	24	27	31	33	38	39	43
48x12 24x24	4.00	CFM	1151	1534	1918	2301	2685	3068	3452	3835	4602
		NC	21	24	26	29	33	35	40	41	45
30x20	4.17	CFM	1198	1598	1997	2397	2797	3196	3595	3995	4794
		NC	21	24	26	29	33	35	40	41	45
36x20 30x24	5.00	CFM	1444	1926	2407	2889	3370	3851	4333	4814	5777
		NC	22	25	27	30	34	36	41	42	46
36x22	5.50	CFM	1590	2120	2650	3180	3710	4240	4770	5300	6360
		NC	22	25	27	30	34	36	41	42	46
48x18 36x24	6.00	CFM	1738	2317	2897	3476	4055	4635	5214	5793	6952
		NC	22	25	27	30	34	36	41	42	46
48x24 36x32	8.00	CFM	2326	3101	3876	4651	5426	6201	6977	7752	9302
		NC	24	27	29	32	36	38	43	44	48
48x30 42x34	10.00	CFM	2919	3892	4865	5839	6812	7785	8758	9731	11677
		NC	25	28	30	33	37	39	44	45	49

CONTINUED

**SERIES 4500 PERFORMANCE DATA**

## MODEL 4500

Size	Duct Area ft <sup>2</sup>	Nk Vel	300	400	500	600	700	800	900	1000	1200
		Ps	-.012	-.022	-.034	-.049	-.067	-.087	-.110	-.136	-.196
48x36	12.00	CFM	3513	4684	5855	7026	8197	9368	10539	11710	14052
		NC	25	28	30	33	37	39	44	45	49
48x40	13.33	CFM	3909	5212	6515	7818	9121	10424	11727	13030	15635
		NC	26	29	31	24	28	40	45	46	50
48x48	16.00	CFM	4701	6267	7837	9401	10968	12535	14102	15668	18802
		NC	27	30	32	35	39	41	46	47	51

## PERFORMANCE NOTES FOR SERIES 4500

All data is tested in accordance with ANSI/ASHRAE 70-2006.

## DEFINITION OF UNITS

CFM Cubic Feet per Minute (air)

Nk Vel Neck Velocity of air stream in Feet per Minute

Ps Negative Static pressure (inches of water column)

NC Noise criterion, Sound pressure level. NC ratings are based on sound power level (Lw)

RE:  $10^{-12}$  watts minus a 10dB room attenuation in all octave bands.

## SERIES 4500 PERFORMANCE DATA MODEL 4538

Size	Duct Area ft <sup>2</sup>	Nk Vel	300	400	500	600	700	800	900	1000	1200
		Ps	-.012	-.022	-.034	-.049	-.067	-.087	-.110	-.136	-.196
06x06	.25	CFM	63	84	105	126	147	168	189	210	252
		NC	-	-	-	-	23	27	32	37	48
08x06	.33	CFM	86	115	143	172	201	229	258	286	344
		NC	-	-	-	-	24	28	33	38	49
08x08	.44	CFM	117	156	195	234	273	313	352	391	469
		NC	-	-	-	21	26	30	35	40	51
12x06	.50	CFM	132	176	220	264	307	351	395	439	527
		NC	-	-	-	21	26	30	35	40	51
16x06 12x08	.67	CFM	180	240	299	359	419	479	539	599	719
		NC	-	-	-	23	28	28	37	42	53
12x10	.83	CFM	228	303	379	455	531	607	683	759	910
		NC	-	-	20	24	29	33	38	43	54
24x06 12x12	1.00	CFM	276	367	459	551	643	735	827	918	1102
		NC	-	-	20	24	29	33	38	43	54
14x12	1.16	CFM	323	431	539	647	755	863	970	1078	1294
		NC	-	-	21	25	30	34	39	44	55
14x14	1.36	CFM	380	506	633	759	886	1013	1139	1139	1524
		NC	-	-	22	26	31	35	40	40	48
18x18	2.25	CFM	638	851	1063	1276	1489	1701	1914	2127	2552
		NC	-	20	24	28	33	37	42	47	58
24x12 18x16	2.00	CFM	563	751	938	1126	1314	1501	1689	1877	2252
		NC	-	19	23	27	32	36	41	46	57
24x18	3.00	CFM	857	1142	1428	1714	1999	2285	2570	2856	3427
		NC	-	21	25	29	34	38	43	48	59
48x12 24x24	4.00	CFM	1151	1534	1918	2301	2685	3068	3452	3835	4602
		NC	20	23	27	31	36	40	45	50	61
30x20	4.17	CFM	1198	1598	1997	2397	2797	3196	3595	3995	4794
		NC	20	23	27	27	31	36	45	50	61
36x20 30x24	5.00	CFM	1444	1926	2407	2889	3370	3851	4333	4814	5777
		NC	21	24	28	32	37	41	46	51	62
36x22	5.50	CFM	1738	2317	2897	3476	4055	4635	5214	5793	6952
		NC	21	24	28	32	37	41	46	51	62
48x18 36x24	6.00	CFM	2205	2940	3674	4409	5144	5879	6614	7349	8819
		NC	22	25	29	33	38	42	47	52	63
48x24 36x32	8.00	CFM	2326	3101	3876	4651	5426	6201	6977	7752	9302
		NC	23	26	30	34	39	43	48	53	64

CONTINUED

**SERIES 4500 PERFORMANCE DATA**

## MODEL 4538

Size	Duct Area ft <sup>2</sup>	Nk Vel	300	400	500	600	700	800	900	1000	1200
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48x30 42x34	10.00	CFM	2919	3892	4865	5839	6812	7785	8758	9731	11677
		NC	24	27	31	35	40	44	49	54	65
48x36	12.00	CFM	3513	4684	5855	7026	8197	9368	10539	11710	14052
		NC	24	27	31	35	40	44	49	54	65
48x40	13.33	CFM	3909	5212	6515	7818	9121	10424	11727	13030	15635
		NC	25	28	32	36	41	45	50	55	66
48x48	16.00	CFM	4701	6267	7834	9401	10968	12535	14102	15668	18802
		NC	26	29	33	37	42	46	51	56	67

## PERFORMANCE NOTES FOR SERIES 4500

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## DEFINITION OF UNITS

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Nk Vel Neck Velocity of air stream in Feet per Minute

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