MSL/MSLP/MSPG

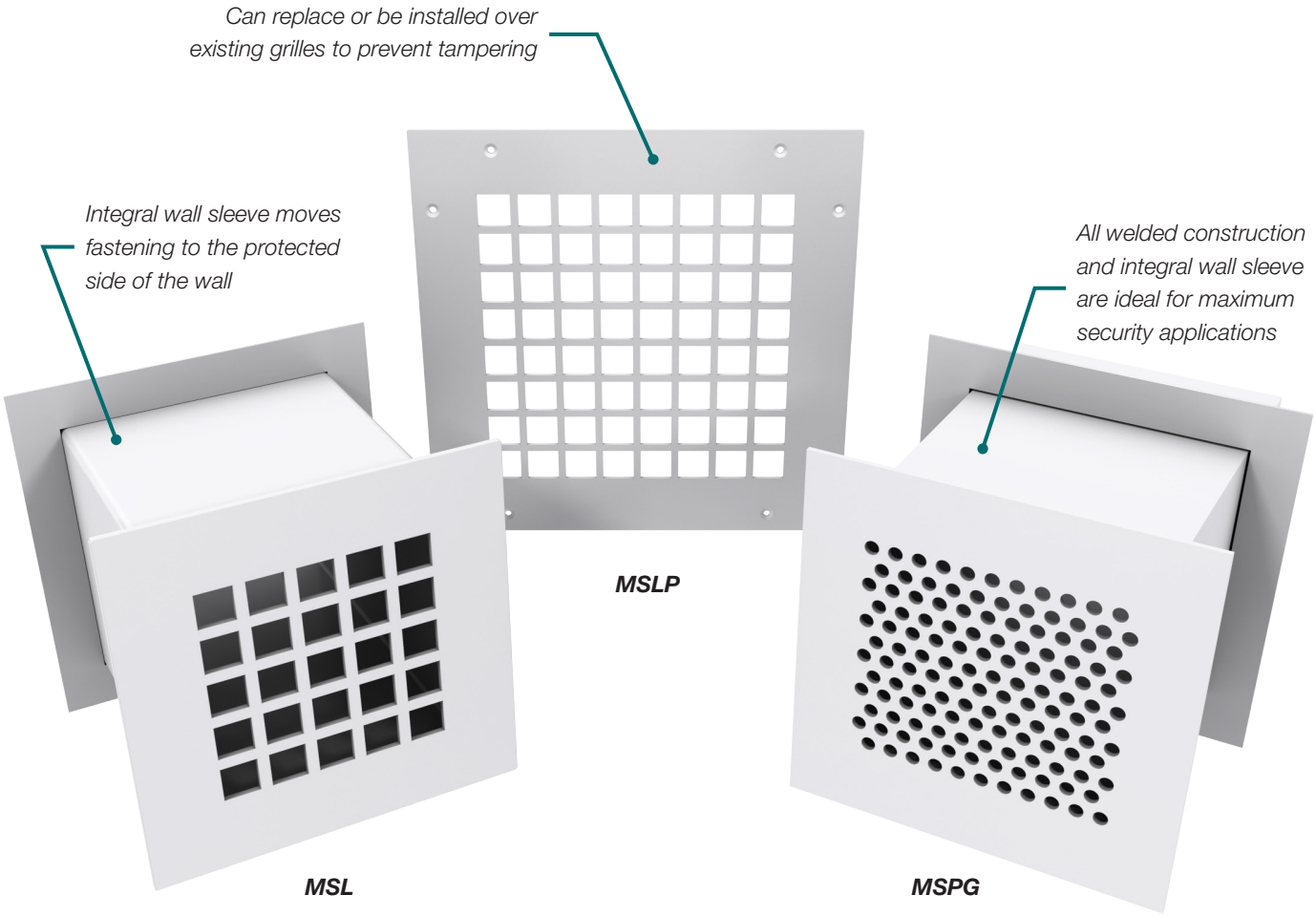
SECURITY GRILLES



price | GRILLES

MSL/MSLP/MSPG
Security Grilles

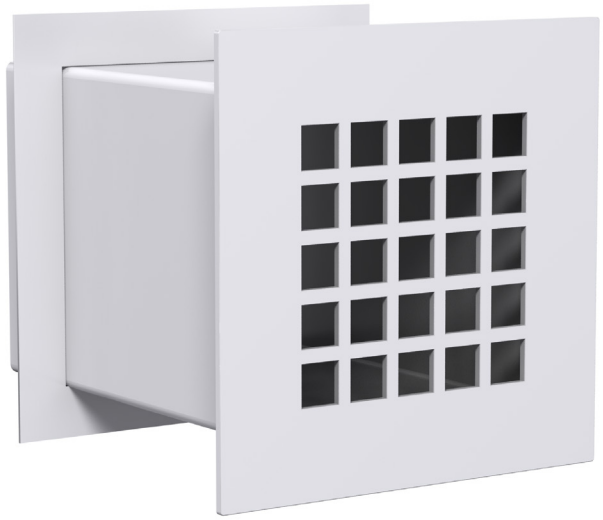
Lattice and perforated security grilles reduce the risk of damage and disassembly associated with traditional grilles in secure areas. With minimum and maximum security options as well as a variety of mounting types, these grilles are suitable for supply and return applications.



MINIMUM SECURITY LATTICE FACE GRILLE (MSL)

The MSL is an economical way to provide air distribution in minimum security areas. The integral wall sleeve moves fastening to the protected side of the wall, making the MSL well suited for use in cafeterias, corridors, and common areas in secured institutions by reducing the risk of disassembly and damage associated with a traditional blade type grilles.

+ Faceplate: 14 GA hot rolled steel with 3/4 in. square holes separated by 1/4 in. partitions. Optional Thickness: 3/16 in., 10 GA or 12 GA hot rolled steel.
+ Sleeve: 14 GA hot rolled steel, provided with stitch or continuously welded seems that can be ordered in a variety of thicknesses with angle for field welding or bent out flanges for pour in place construction.
+ Options: screens, dampers, barrier bars, transfer grille construction
+ Size: Min.: 6 in. x 6 in., Max.: 30 in. x 30 in.



MSL

TYPICAL APPLICATIONS

Security grilles reduce unwanted access to ductwork in spaces where supervision is minimal and vandalism or misuse is a risk. Such areas include: correctional facilities, psychiatric hospitals, rest stops, park facilities, schools, and sports venues.

CONSTRUCTION

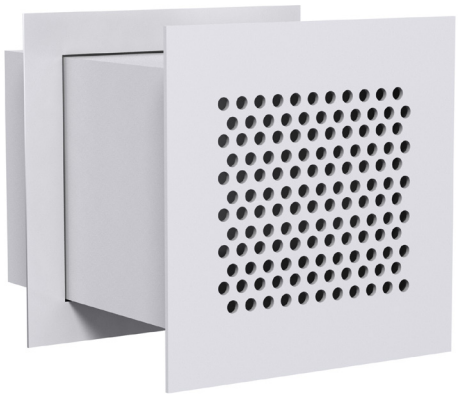
+ Application
  - Lattice grille (MSL)
  - Lattice face plate (MSLP)
  - Perforated grille (MSPG)
+ Material
  - Steel
  - Aluminum
  - 304 stainless steel
+ Options
  - Wire mesh (WM)
  - 4-sided mounting frame*
  - Barrier bars*
  - Damper*
  - Transfer grille*

*Not available on MSLP

MAXIMUM SECURITY PERFORATED FACE GRILLE (MSPG)

Featuring all-welded construction and integral wall sleeves, the MSPG perforated face steel maximum security grille is one of the most popular security grilles styles in the industry.

+ Faceplate: 3/16 in. hot rolled steel with 5/16 in. diameter holes. Optional Thickness: 1/4 in., 10 GA or 12 GA hot rolled steel available.
+ Sleeve: 3/16 in. hot rolled steel, provided with stitch or continuously welded seems that can be ordered in a variety of thicknesses with angle for field welding or bent out flanges for pour in place construction.
+ Sizes: Min.: 6 in. x 6 in., Max: 30 in. x 30 in.

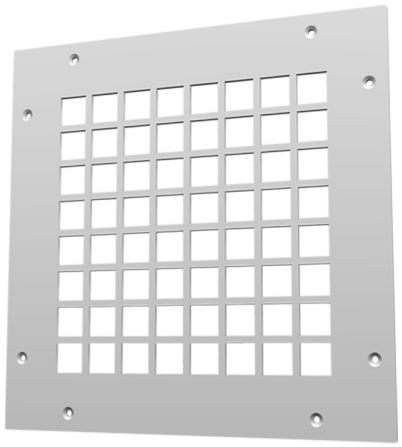


MSPG

MINIMUM SECURITY LATTICE FACEPLATE (MSLP)

The MSLP can replace conventional grilles for supply and return applications, or be installed over existing grilles in applications where a directional air pattern is required. The MSLP is available in steel, aluminum, or stainless steel, and is supplied with tamperproof screws, which are ideal for mounting in minimum security areas, such as hallways.

+ Sizes: Min.: 8 in. x 8 in., Max.: 32 in. x 32 in



MSLP

OPTIONAL 4-SIDED MOUNTING FRAME

The 4-sided 1 in. x 1 in. x 1/8 in. hot rolled steel mounting frame is shipped loose for field welding and allows for flexible installation and robust installed assembly.



MSPG with 4-sided mounting frame

OPTIONAL TRANSFER GRILLE CONSTRUCTION

Transfer grilles are supplied with the same security face style on both ends of the sleeve for poured in place construction.

PERFORMANCE DATA

MSPG – Supply

Size	Neck Velocity (fpm)	100	200	300	400	500	600	700	800	900
	Velocity Pressure (in. w.g.)	0.001	0.002	0.006	0.01	0.016	0.022	0.031	0.04	0.05
6 x 6	Total Pressure (in. w.g.)	0.005	0.020	0.046	0.081	0.127	0.182	0.248	0.324	0.41
	Flow Rate (cfm)	25	50	75	100	125	150	175	200	225
	Sound (NC)	-	-	-	-	16	22	27	31	35
	Throw (ft)	4-6-11	8-11-15	11-13-18	12-15-21	14-17-24	15-18-26	16-20-28	17-21-30	18-23-32
8 x 8	Total Pressure (in. w.g.)	0.004	0.016	0.036	0.064	0.10	0.144	0.196	0.256	0.324
	Flow Rate (cfm)	44	89	133	178	222	267	311	356	400
	Sound (NC)	-	-	-	-	16	22	27	31	35
	Throw (ft)	5-8-14	11-14-20	14-17-24	16-20-28	18-22-32	20-24-35	22-26-37	23-28-40	24-30-42
10 x 10	Total Pressure (in. w.g.)	0.003	0.013	0.030	0.053	0.083	0.120	0.163	0.213	0.27
	Flow Rate (cfm)	69	139	208	278	347	417	486	556	625
	Sound (NC)	-	-	-	-	16	22	27	32	35
	Throw (ft)	7-10-18	13-18-25	18-22-31	20-25-35	23-28-40	25-31-43	27-33-47	29-35-50	31-38-53
12 x 12	Total Pressure (in. w.g.)	0.003	0.011	0.026	0.046	0.072	0.103	0.141	0.184	0.232
	Flow Rate (cfm)	100	200	300	400	500	600	700	800	900
	Sound (NC)	-	-	-	-	16	22	27	32	36
	Throw (ft)	8-12-21	15-21-30	21-26-37	24-30-42	27-34-47	30-37-52	32-40-56	35-42-60	37-45-64
14 x 14	Total Pressure (in. w.g.)	0.003	0.010	0.023	0.040	0.063	0.091	0.124	0.162	0.205
	Flow Rate (cfm)	136	272	408	544	681	817	953	1089	1225
	Sound (NC)	-	-	-	-	17	22	28	32	36
	Throw (ft)	9-13-25	18-25-35	25-30-43	29-35-49	32-39-55	35-43-61	38-46-65	40-49-70	43-53-74
16 x 16	Total Pressure (in. w.g.)	0.002	0.009	0.020	0.036	0.057	0.082	0.111	0.145	0.183
	Flow Rate (cfm)	178	356	533	711	889	1067	1244	1422	1600
	Sound (NC)	-	-	-	-	17	23	28	32	36
	Throw (ft)	9-15-28	20-28-40	28-35-49	33-40-57	37-45-63	40-49-69	43-53-75	46-57-80	49-60-85
18 x 18	Total Pressure (in. w.g.)	0.002	0.008	0.019	0.033	0.051	0.074	0.101	0.132	0.167
	Flow Rate (cfm)	225	450	675	900	1125	1350	1575	1800	2025
	Sound (NC)	-	-	-	-	17	23	28	32	36
	Throw (ft)	10-17-32	22-32-45	32-39-55	37-45-64	41-50-71	45-55-78	49-60-84	52-64-90	55-68-95
20 x 20	Total Pressure (in. w.g.)	0.002	0.008	0.017	0.030	0.047	0.068	0.092	0.121	0.153
	Flow Rate (cfm)	278	556	833	1111	1389	1667	1944	2222	2500
	Sound (NC)	-	-	-	-	17	23	28	32	36
	Throw (ft)	12-18-35	24-35-50	35-43-61	41-50-71	46-56-79	50-61-87	54-66-94	58-71-100	61-75-106
22 x 22	Total Pressure (in. w.g.)	0.002	0.007	0.016	0.028	0.044	0.063	0.085	0.112	0.141
	Flow Rate (cfm)	336	672	1008	1344	1681	2017	2353	2689	3025
	Sound (NC)	-	-	-	-	17	23	28	32	36
	Throw (ft)	12-20-39	26-39-55	39-48-67	45-55-78	50-61-87	55-67-95	59-73-103	64-78-110	67-83-117
24 x 24	Total Pressure (in. w.g.)	0.002	0.006	0.015	0.026	0.041	0.058	0.08	0.104	0.132
	Flow Rate (cfm)	400	800	1200	1600	2000	2400	2800	3200	3600
	Sound (NC)	-	-	-	-	17	23	28	32	36
	Throw (ft)	12-21-42	28-42-60	42-52-73	49-60-85	55-67-95	60-73-104	65-79-112	69-85-120	73-90-127
26 x 26	Total Pressure (in. w.g.)	0.002	0.006	0.014	0.024	0.038	0.055	0.075	0.097	0.123
	Flow Rate (cfm)	469	939	1408	1878	2347	2817	3286	3756	4225
	Sound (NC)	-	-	-	-	17	23	28	32	36
	Throw (ft)	13-23-46	31-46-65	46-56-80	53-65-92	59-73-103	65-80-113	70-86-122	75-92-130	80-98-138
28 x 28	Total Pressure (in. w.g.)	0.001	0.006	0.013	0.023	0.036	0.052	0.070	0.092	0.116
	Flow Rate (cfm)	544	1089	1633	2178	2722	3267	3811	4356	4900
	Sound (NC)	-	-	-	-	17	23	28	32	36
	Throw (ft)	14-24-49	33-49-70	49-61-86	57-70-99	64-78-111	70-86-121	76-93-131	81-99-140	86-105-148
30 x 30	Total Pressure (in. w.g.)	0.001	0.005	0.012	0.022	0.034	0.049	0.066	0.087	0.110
	Flow Rate (cfm)	625	1250	1875	2500	3125	3750	4375	5000	5625
	Sound (NC)	-	-	-	-	17	23	28	33	36
	Throw (ft)	14-26-52	35-52-75	52-65-92	61-75-106	68-84-119	75-92-130	81-99-140	87-106-150	92-113-159

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. All pressures are in in. w.g.
3. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
4. Blanks "-" indicate an NC value less than 15.
5. Air flow is in cfm.
6. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
7. Throw data is based on supply air and room air being at isothermal conditions.

PERFORMANCE DATA

MSPG – Return

Size	Neck Velocity (fpm)	100	150	200	250	300	350	400	500	600
	Velocity Pressure (in. w.g.)	0.001	0.001	0.002	0.004	0.006	0.008	0.010	0.016	0.022
	Neg. Static Pressure (in. w.g.)	0.007	0.015	0.027	0.042	0.061	0.082	0.108	0.168	0.242
6 x 6	Flow Rate (cfm)	25	38	50	63	75	88	100	125	150
	Sound (NC)	-	-	-	-	-	-	-	22	28
8 x 8	Flow Rate (cfm)	44	67	89	111	133	156	178	222	267
	Sound (NC)	-	-	-	-	-	-	-	22	28
10 x 10	Flow Rate (cfm)	69	104	139	174	208	243	278	347	417
	Sound (NC)	-	-	-	-	-	-	-	22	28
12 x 12	Flow Rate (cfm)	100	150	200	250	300	350	400	500	600
	Sound (NC)	-	-	-	-	-	-	15	22	28
14 x 14	Flow Rate (cfm)	136	204	272	340	408	476	544	681	817
	Sound (NC)	-	-	-	-	-	-	15	23	28
16 x 16	Flow Rate (cfm)	178	267	356	444	533	622	711	889	1067
	Sound (NC)	-	-	-	-	-	-	15	23	29
18 x 18	Flow Rate (cfm)	225	338	450	563	675	788	900	1125	1350
	Sound (NC)	-	-	-	-	-	-	16	23	29
20 x 20	Flow Rate (cfm)	278	417	556	694	833	972	1111	1389	1667
	Sound (NC)	-	-	-	-	-	-	16	23	29
22 x 22	Flow Rate (cfm)	336	504	672	840	1008	1176	1344	1681	2017
	Sound (NC)	-	-	-	-	-	-	16	23	29
24 x 24	Flow Rate (cfm)	400	600	800	1000	1200	1400	1600	2000	2400
	Sound (NC)	-	-	-	-	-	-	16	23	29
26 x 26	Flow Rate (cfm)	469	704	939	1174	1408	1643	1878	2347	2817
	Sound (NC)	-	-	-	-	-	-	16	23	29
28 x 28	Flow Rate (cfm)	544	817	1089	1361	1633	1906	2178	2722	3267
	Sound (NC)	-	-	-	-	-	-	16	23	29
30 x 30	Flow Rate (cfm)	625	938	1250	1563	1875	2188	2500	3125	3750
	Sound (NC)	-	-	-	-	-	-	16	23	29

Performance Notes:

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4. Blanks "-" indicate an NC value less than 15.
5. Air flow is in cfm.
6. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
7. Throw data is based on supply air and room air being at isothermal conditions.

PERFORMANCE DATA

MSL/MSLP

Duct Size	Neck Velocity (fpm)	300	400	500	600	700	800	900	1000
	Velocity Pressure (in. w.g.)	0.006	0.01	0.016	0.022	0.031	0.04	0.05	0.062
	Total Pressure (in. w.g.)	0.03	0.053	0.083	0.119	0.163	0.212	0.269	0.332
6 x 6	Flow Rate (cfm)	75	100	125	150	175	200	225	250
	Sound (NC)	-	-	-	-	16	20	23	27
	Throw (ft)	9-11-16	11-13-18	12-15-21	13-16-23	14-17-24	15-18-26	16-20-28	17-21-29
8 x 8	Flow Rate (cfm)	133	178	222	267	311	356	400	444
	Sound (NC)	-	-	-	-	18	22	26	29
	Throw (ft)	12-15-21	14-17-25	16-19-27	17-21-30	19-23-32	20-25-35	21-26-37	22-27-39
10 x 10	Flow Rate (cfm)	208	278	347	417	486	556	625	694
	Sound (NC)	-	-	-	15	20	24	27	31
	Throw (ft)	15-19-27	18-22-31	20-24-34	22-27-38	23-29-41	25-31-43	27-33-46	28-34-48
12 x 12	Flow Rate (cfm)	300	400	500	600	700	800	900	1000
	Sound (NC)	-	-	-	17	21	25	29	32
	Throw (ft)	18-23-32	21-26-37	24-29-41	26-32-45	28-34-49	30-37-52	32-39-55	34-41-58
14 x 14	Flow Rate (cfm)	408	544	681	817	953	1089	1225	1361
	Sound (NC)	-	-	-	18	23	27	30	33
	Throw (ft)	21-26-37	25-30-43	28-34-48	30-37-53	33-40-57	35-43-61	37-46-64	39-48-68
16 x 16	Flow Rate (cfm)	533	711	889	1067	1244	1422	1600	1778
	Sound (NC)	-	-	-	19	24	28	31	34
	Throw (ft)	25-30-42	28-35-49	32-39-55	35-42-60	37-46-65	40-49-69	42-52-74	45-55-78
18 x 18	Flow Rate (cfm)	675	900	1125	1350	1575	1800	2025	2250
	Sound (NC)	-	-	-	20	25	29	32	35
	Throw (ft)	28-34-48	32-39-55	36-44-62	39-48-68	42-52-73	45-55-78	48-59-83	50-62-87
20 x 20	Flow Rate (cfm)	833	1111	1389	1667	1944	2222	2500	2778
	Sound (NC)	-	-	16	21	25	29	33	36
	Throw (ft)	31-38-53	35-43-61	40-48-69	43-53-75	47-57-81	50-61-87	53-65-92	56-69-97
22 x 22	Flow Rate (cfm)	1008	1344	1681	2017	2353	2689	3025	3361
	Sound (NC)	-	-	16	22	26	30	34	37
	Throw (ft)	34-41-58	39-48-67	44-53-75	48-58-83	51-63-89	55-67-95	58-72-101	62-75-107
24 x 24	Flow Rate (cfm)	1200	1600	2000	2400	2800	3200	3600	4000
	Sound (NC)	-	-	17	22	27	31	34	37
	Throw (ft)	37-45-64	42-52-74	47-58-82	52-64-90	56-69-97	60-74-104	64-78-110	67-82-116
26 x 26	Flow Rate (cfm)	1408	1878	2347	2817	3286	3756	4225	4694
	Sound (NC)	-	-	18	23	28	31	35	38
	Throw (ft)	40-49-69	46-56-80	51-63-89	56-69-98	61-75-105	65-80-113	69-85-120	73-89-126
28 x 28	Flow Rate (cfm)	1633	2178	2722	3267	3811	4356	4900	5444
	Sound (NC)	-	-	18	24	28	32	36	39
	Throw (ft)	43-53-74	50-61-86	55-68-96	61-74-105	66-80-113	70-86-121	74-91-129	78-96-136
30 x 30	Flow Rate (cfm)	1875	2500	3125	3750	4375	5000	5625	6250
	Sound (NC)	-	-	19	24	29	33	36	39
	Throw (ft)	46-56-80	53-65-92	59-73-103	65-80-113	70-86-122	75-92-130	80-98-138	84-103-145

Performance Notes:

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2. All pressures are in in. w.g.
3. NC values are based on a room absorption of 10 dB re 10^{-12} watts and one grille.
4. Blanks "-" indicate an NC value less than 15.
5. Air flow is in cfm.
6. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
7. Throw data is based on supply air and room air being at isothermal conditions.
8. Corrections for return application: use listed NC; multiply listed total pressure by 1.3 to obtain negative static pressure.
9. Throw is based on wall mounting grille within 18 in. of ceiling, therefore ceiling effect is included in throw values.

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