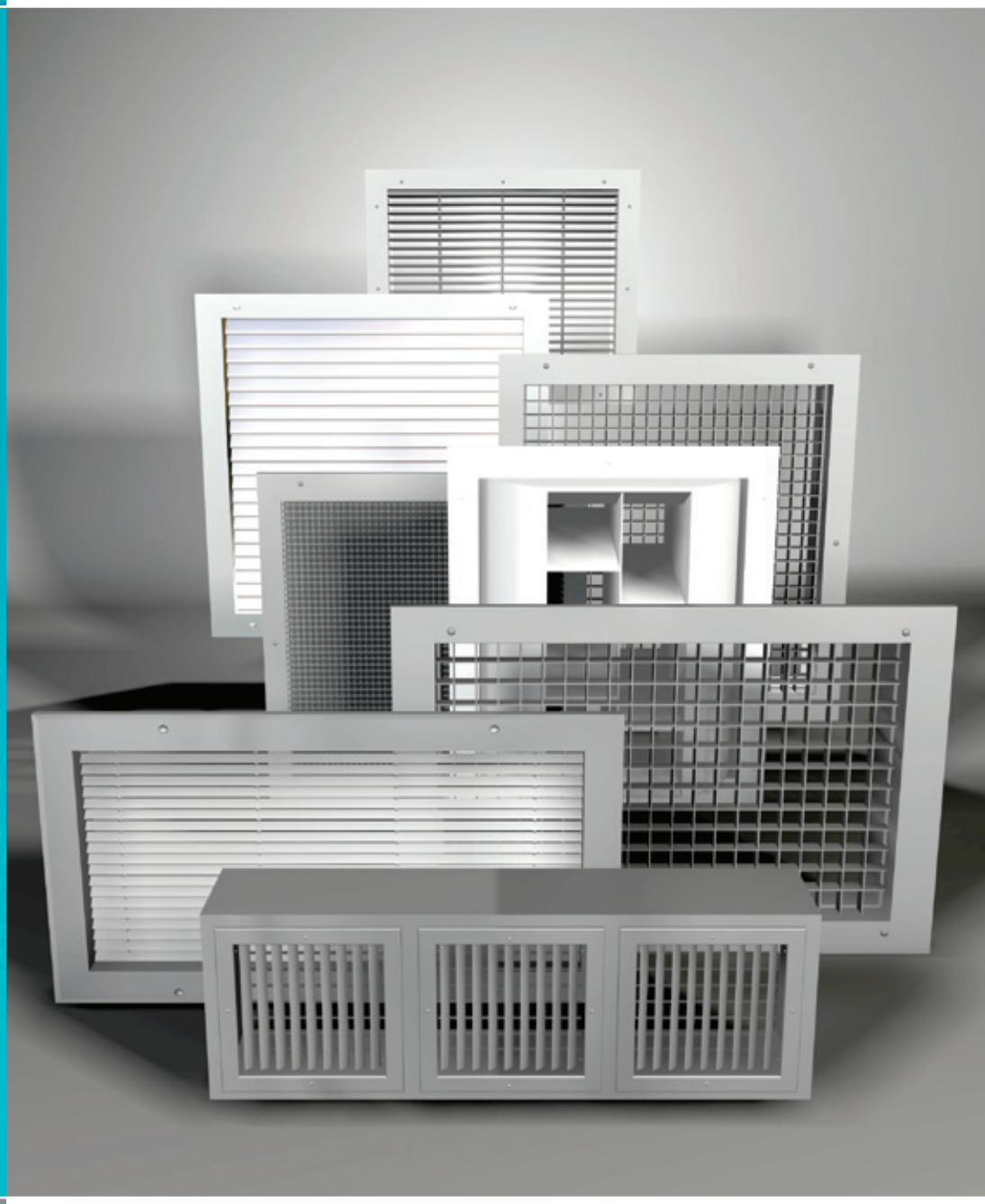
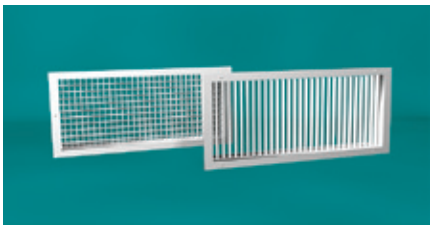
SECTION **D**



Grilles and Registers

Standard



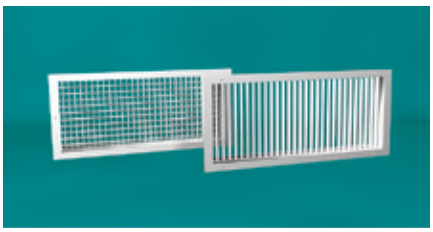
Louvered Face Supply / Return 500 + 540 / 600 / 640 / 700 Series

Price single and double deflection louvered face supply grilles and returns can be economically supplied in steel, aluminum or stainless steel for almost any application. Optional opposed blade dampers are available in either steel, stainless steel or aluminum construction. Optional opposed blade dampers are available in either steel, stainless steel or aluminum construction. **D13**

Spiral Duct Grille SDG / SDGE / SDGR / SDGER Series

Price Spiral Duct Grille is recommended for spiral or round duct applications. The adjustable air-scoop enables full use of the double deflection blades supply and return grilles available.

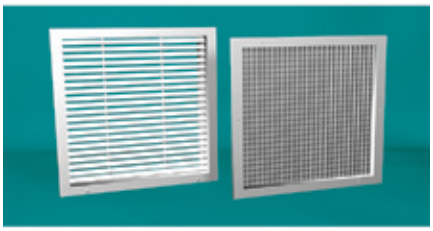
..... **D31**



Eggcrate / Perforated Face 80 / 10 Series

Perforated face and grid core styles provide an architectural and performance option. Optional opposed blade dampers are available in either steel, stainless steel or aluminum construction.

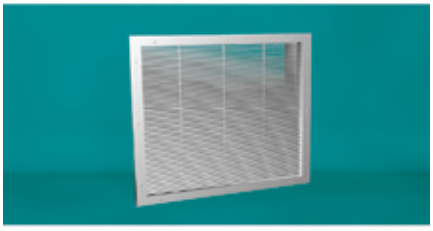
..... **D39**



Filter Return 500FF / 600FF / 700FF / 10FF / 80FF Series

Price louvered filter grilles, available in steel or aluminum construction, have been designed for quick access to 1 in.[25] or 2 in. [51] filter media and for complete grille removal to aid in cleaning.

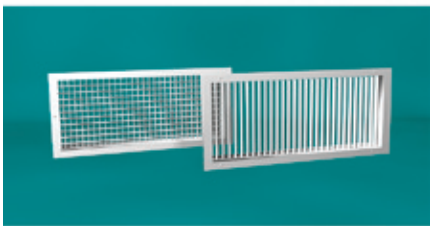
..... **D45**



Heavy Duty Gym Grilles 90 Series

Available in 0° or 45° louver deflection and in steel or aluminum construction, these grilles are specifically designed for use in gymnasiums or other rugged use areas.

..... **D51**



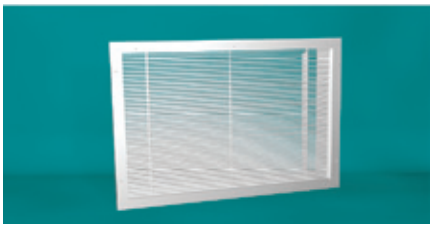
Heavy Duty Supply Grilles 910 / 920 Series

Price heavy duty single and double deflection louvered face supply grilles are available in steel construction. They are specifically designed for severe applications such as gymnasiums, factories, warehouses, public washrooms, swimming pools, heavy traffic corridors and any public area where abuse is a major concern.

..... **D61**

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

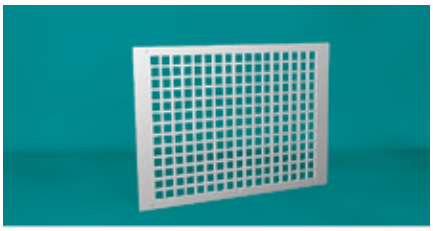
Standard



Reversible Core Grille RCG Series

Reversible core grilles are a sidewall supply grille with a linear appearance for demanding architectural conditions. The adjustable air pattern can be used for heating or cooling applications without changing the grille's appearance.

..... **D62**



Lattice Face Supply LG Series

Lattice face grilles are available for air distribution, architectural applications, and security covers. They can be fabricated in a choice of materials to suit the desired application.

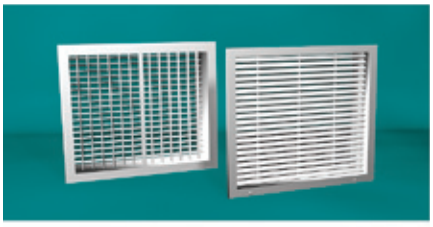
..... **D67**

Transfer / Door Grilles STG / ATG / ATGH Series

Price offers a complete line of steel and aluminum louvered core door / transfer grilles with a variety of mounting styles for sightproof and lightproof applications.

..... **D71**

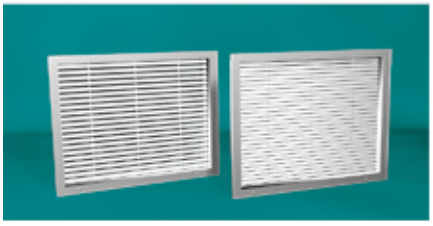
Highest Quality



Louvered Face Supply / Return 20 / 30 / 60 / 70 Airfoil Series

Price premium quality extruded aluminum single and double deflection supply grilles and louvered returns are the choice of architects and engineers who demand superior performance, design and construction.

..... **D77**



Filter Return 60FH / 70FH / 80FH Series

The ultimate in filter grilles, and manufactured from premium quality extruded aluminum.

..... **D84**

All Metric dimensions ( ) are soft conversion.
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Industrial / Special Application

Louvered Face Supply 150 / 300 / MIG Series

Price industrial single and double deflection supply and modular core grilles feature large airfoil shaped blades for handling high air volumes. These units have a rugged extruded aluminum construction suitable for commercial, factory, warehouse or textile mill applications. Optional gang operators and opposed blade dampers are available.

..... **D93**

High Capacity Drum Louvers HCD Series

Price HCD Series high capacity drum louvers are ideal to solve air movement problems in shopping malls, industrial plants, arenas, stadiums or any other enclosed space that cannot be served by ductwork and conventional outlets. They consist of adjustable vanes within a 60° rotatable drum and a unique positive detent mechanism to hold the drum angle setting. Spiral duct adaptor frame available on HCD series. **D104**

Stainless Steel Supply, Return, Filter Return 700 / 700FF Series

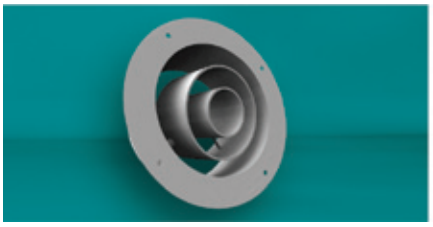
Price single and double deflection supply louvered face return and filter return grilles are available in stainless steel construction for applications in corrosive environments.

700 Series **D18**

700FF Series **D25, D48**

Specialty Grilles and Registers

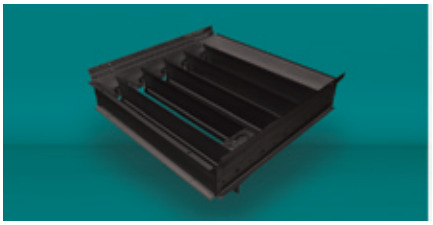
Price will custom manufacture grilles and registers to your specifications for unique air distribution, architectural or special application requirements. **D121**



Air Nozzle Diffuser AND / AN / RSG / RECG / RPG Series

Price AND (Air Nozzle Diffuser) is a high capacity diffuser with jet-type air flow, specifically designed for spot heating or cooling in high ceiling applications such as convention centers, meeting halls and auditoriums.

..... **D133**



Duct Mounted Accessories

Price offers a wide selection of duct mounted accessories such as normal and heavy duty dampers that nicely complement vast selection of Price grilles and registers.

..... **D113**

All Metric dimensions ( ) are soft conversion.
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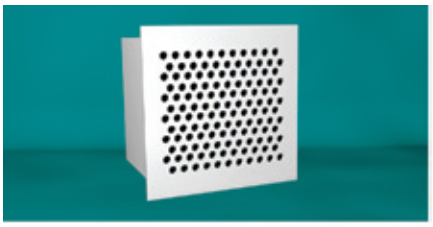
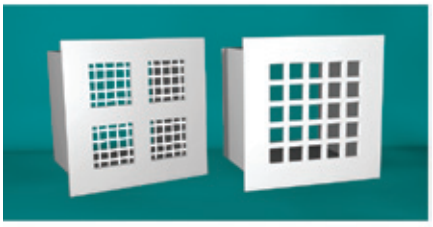
Security Products



Perforated Face Grilles MSPG Series

The MSPG features a highly effective free area while restricting admission and storage of contraband. The grille utilizes 5/16 in. diameter holes in a 3/16 in. faceplate to prevent damage to the occupied side. The back of the faceplate is welded to a steel sleeve that can be ordered according to the wall thickness and is fixed by use of a steel angle on the secured side.

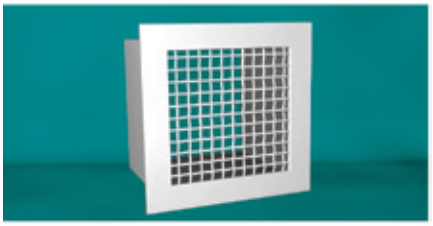
..... **D155**



Lattice Face Grilles MSLG / MSLGP / MSL / MSLP Series

Price lattice face security grilles provide up to three tiers of steel construction for maximum resistance to penetration. The initial plate manufactured with 2 in. square openings for air distribution can be reinforced by a wire mesh and a second lattice plate for maximum security applications to meet ASTM standards.

..... **D158**



Screened Face Grilles MSSG Series

Price screened face security grilles provide high air volumes in medium security environments. Optional barrier bars and mounting options allow these grilles to be suitable for medium security applications.

..... **D165**

Fixed Louver Grilles MSSL / MSBL / MSGS Series

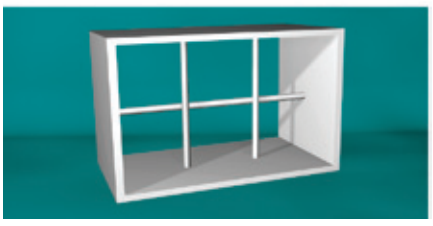
Price fixed louver grilles allow air to be distributed in a specific pattern and can also be used to obstruct vision into the ductwork. Louvers are available in 0, 15, 45 degree angles.

..... **D167**

Lattice Face Ceiling Diffusers MSD Series

Price lattice face ceiling diffusers allow for overhead directional air distribution. The lattice face protects the diffuser and prevents access to the duct.

..... **D173**

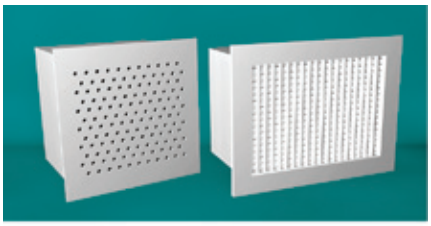


Duct / Barrier Grilles MSBG / MSDRBG / MSTRBG Series

Price barrier grilles can be applied to create restrictions in any wall openings. The maximum allowable opening is 6 in. x 12 in. through the grille.

..... **D175**

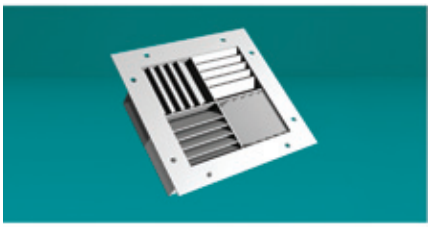
Security Products



Risk Resistant Grilles MSRRG / MSRRP Series

Price risk resistant grilles provide air distribution while reducing the ability of inmates to inflict injury by way of the air outlet using complex cores and small perforated faces.

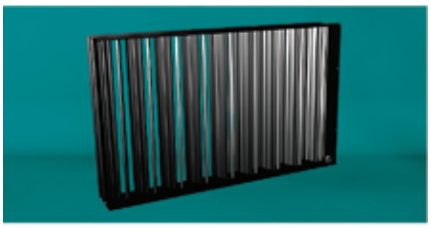
..... **D178**



Risk Resistant Ceiling Diffusers MSRRCD Series
Maximum Security Risk Resistant Ceiling Diffuser

Price MSRRCD Series Risk Resistant Ceiling Diffusers feature an injury inhibiting core that uses a unique w-shaped blade. The MSRRCD impedes efforts to threading while providing effective air distribution in a variety of air patterns.

..... **D184**



Options & Accessories for Security Products

Dampers, barrier bars and wire mesh screens are available on select products to achieve volume control and increase security levels.

..... **D187**

Price security products have been designed to provide a means of supplying or exhausting air to a space while preventing access to the ductwork, achieving comfort in the space and providing a level of safety to the occupant. All products are designed and manufactured in accordance with the most recent known industry guidelines and practices, plus Price's years of experience supplying security products. Price, however, does not intend to imply that the products cannot be wilfully damaged or used to inflict harm to self or others. Price warrants only the construction and air flow performance of the product as catalogued.

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Application Guidelines

Introduction

Overview

It is the intent of this section to give some basic application guidelines for the use of supply and return grilles and registers in a simple non-technical manner. The information presented here is based on Price's laboratory results, as well as commonly accepted industry practices supported by ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers).These application guidelines are designed to enhance your ability to use the performance data in this catalog to select an air outlet that will create an air pattern in the occupied space conducive to the comfort of the occupant.

Single Deflection Supply

A grille or register consisting of a single set of adjustable blades that controls the air pattern in only one direction, depending on blade orientation. Horizontal blades control rise and drop of the air stream.This orientation would be used, for example, to prevent unwanted drop in a free space (no ceiling) application or to blow warm air down in a high sidewall application. Vertically oriented blades control the spread of the air pattern and would be used where throw, not drop, is a prime concern. These would be the most economical type of outlet. See **Figure 1**. Example — Model 510 or 21.

Double Deflection Supply

A grille or register consisting of two sets of adjustable blades oriented perpendicular to each other to allow control of the air pattern in both horizontal and vertical planes. While both sets of blades have an affect on the air pattern, the front or outward most set has the most influence.The front blades should be horizontal if control of rise and drop is primary (i.e. free space or high sidewall) and vertical if spread and throw are the largest concerns. Double deflection outlets are the most flexible type of grille or register. See **Figure 2**. Example — Model 520 or 22.

Eggcrate Return

A grille or register with a cubical grid core to be used for return or exhaust where maximum free area is desired and see-through is not a concern.Typically used in ceiling applications where see-through sight lines are minimized to directly below the grille. See **Figure 3**. Example — Model 80 Series.

Figure 1: Model 510 Single Deflection Supply

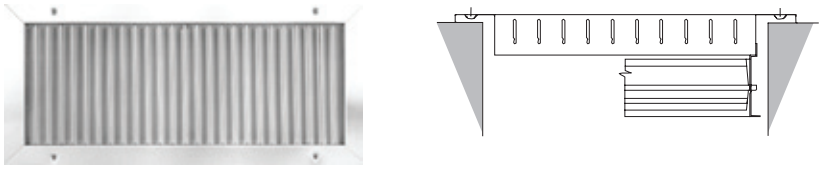


Figure 2: Model 520 Double Deflection Supply

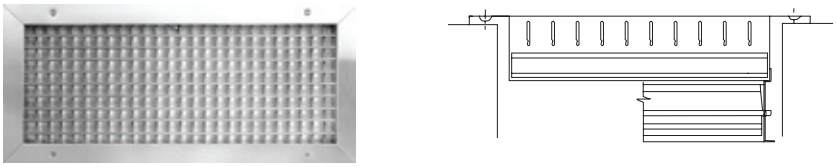


Figure 3: 80 Series Aluminum Eggcrate Return

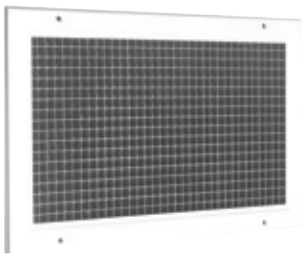


Figure 4: 10 Series Perforated Return

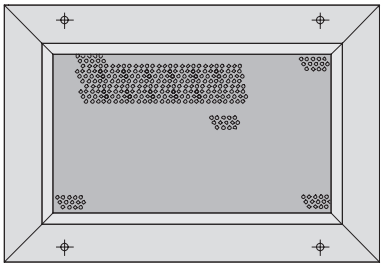
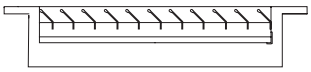


Figure 5: Model 530 Louvered Return



Perforated Return

This grille utilizes a symmetrically perforated sheet metal core for free areas of approximately 50%. It is typically used in ceiling applications where see-through and blending with the mounting surface are of prime concerns. See **Figure 4**. Example — Model 10 Series.

Louvered Returns

These grilles and registers utilize a core of parallel fixed blades set at a deflection, usually 45 degrees from horizontal, to provide a return or exhaust unit with minimum see-through. The most common application is sidewall with blade deflection upward in high applications and downward in lower applications. This type of outlet usually has a slightly higher sound and pressure drop than either the eggcrate or perforated. See **Figure 5**. Example — Model 530 or 630.

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Industrial Supply Grilles and Registers

Similar to commercial models, the grille or register has adjustable louvers in single or double deflection, however the louvers are deeper (up to 3 in.) and spaced wider. The deeper louver is stronger and more effective for pattern deflection. Construction is generally extruded aluminum louvers, with heavy duty aluminum or steel frame. The heavy duty construction of the industrial supply grilles and registers withstands frequent adjustment, high velocity, high air volumes, turbulent supply air and contaminants in the air stream. Options include gang operators, quick-release trunk latch frame and heavy duty balancing damper. See **Figure 6**. Example – Model 300.

Industrial Return Grilles or Registers

Grilles or registers have fixed blades of various deflections and blade spacings, and are constructed of heavy gauge steel or extruded aluminum with a welded frame. Options include stainless steel construction and heavy duty balancing damper. See **Figure 7**. Example – Model 97.

Drum Louver

Drum louvers consist of adjustable vanes mounted in a rotating drum that is adjustable up or down to provide directional control of the air pattern. The deep adjustable vanes can be used to achieve a varying amount of spread pattern. The depth of the drum and the vanes produce a long air projection and high degree of directional control. Construction can be heavy gauge steel or extruded aluminum. Options include pole operator bracket, motorized drum and heavy duty balancing damper. See **Figure 8**. Example – Model HCD.

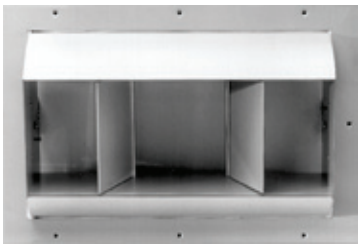
Nozzles

Similar to the drum louver, the nozzle achieves a very long air projection due to its depth and geometry. Generally round in shape, nozzles are available in a variety of models including adjustable versions, which allow directional control of the air pattern. Construction can be steel or aluminum.

Figure 6: Model 302D Register c/w Steel Damper

Figure 7: Model 97 Register w/ Steel Damper

Figure 8: Model HCD1 High Capacity Drum Louver



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Security Grilles

Security grilles are grilles that have been designed in response to various security requirements for different air distribution applications. These grilles decrease the risk of injury to inmates, as well as reduce the likelihood of unwanted access to the ductwork. There are many applications where security grilles can be used; typically 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.There are three different levels of security grilles offered.

Minimum Security

Minimum security grilles have lattice faces, which provide minimal risk of disassembly and damage. Models are available with or without sleeves and have various mounting options, depending on how secure they need to be. Grilles are made of lighter gauge material for an economical solution in lower security risk areas. Applications that commonly use minimum security grilles include common areas in secured institutions, cafeterias, corridors and other public areas. See **Figure 10**. Example – Model MSLG.

Medium Security

Medium security grilles should be used in areas where increased duct security is a concern. Units in this category are constructed of heavier duty construction and include more security measures, including wire meshes and barrier bars on some models. Common applications for these grilles include exercise facilities, corridors, holding cells, psychiatric facilities and schools. See **Figure 11**. Example – Model MSSG.

Maximum Security

Maximum security grilles should be used in high risk areas, and are most commonly used in inmate cells, isolation areas and psychiatric hospitals. These grilles are constructed of heavy duty materials with faceplates that are designed to impede insertion of items into the duct, work as well as prevent outside damage to the grille. Models in this category also include risk resistant grilles that are designed to inhibit the threading of hanging devices by an inmate. Risk resistant maximum security grilles should be used every time there is concern that the grille could be used to facilitate harm to the inmate or to others. See **Figure 12**. Example – Model MSPG.

Figure 10: MSL

Figure 11: MSSG

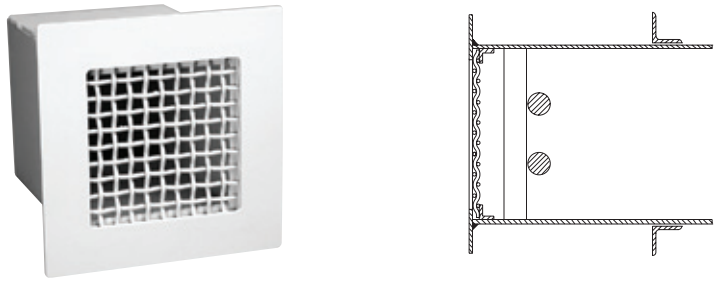
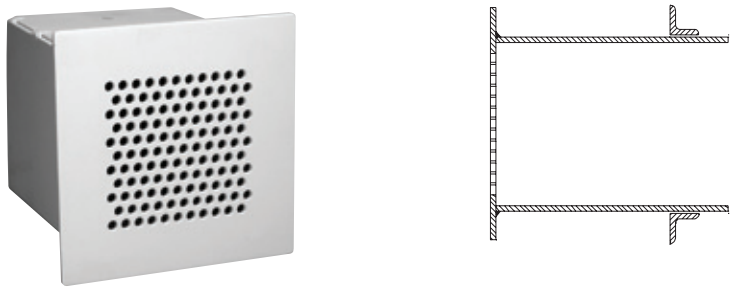


Figure 12: MSPG



Performance Data Interpretation

The grilles and registers, as stated in the corresponding performance notes, have been tested to ASHRAE 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets". The following is an explanation of the conditions under which the performance data is derived and some suggestions on how to apply the data to different conditions.

Throw

The throw data indicated in the grilles and registers section is the maximum distance in feet from a supply grille that a predetermined air velocity (terminal velocity) can be measured under the conditions outlined by the test codes. These conditions are:

- Grille is to be sidewall mounted 9 in. below the ceiling to generate surface effect. See Air Distribution Engineering Guide, Section EG.

The supply register throw data in this section is to terminal velocities of 150 fpm, 100 fpm and 50 fpm for air patterns of 0, 22 1/2 and 45 degree horizontal spread (see **Figure 3**).

The isovel diagrams shown in **Figure 3** are based on actual test results. They illustrate the relationship of horizontal spread to throw for a typical selection of a high sidewall supply outlet.

Typical isovels to terminal velocities of 150 fpm (V_T = 150), 100 fpm (V_T = 100) and 50 fpm (V_T = 50) are illustrated, with a variety of horizontal spread settings. Note that the outer envelope represents the V_T = 100 isovel, and the dark colored area represents the V_T = 150 isovel.

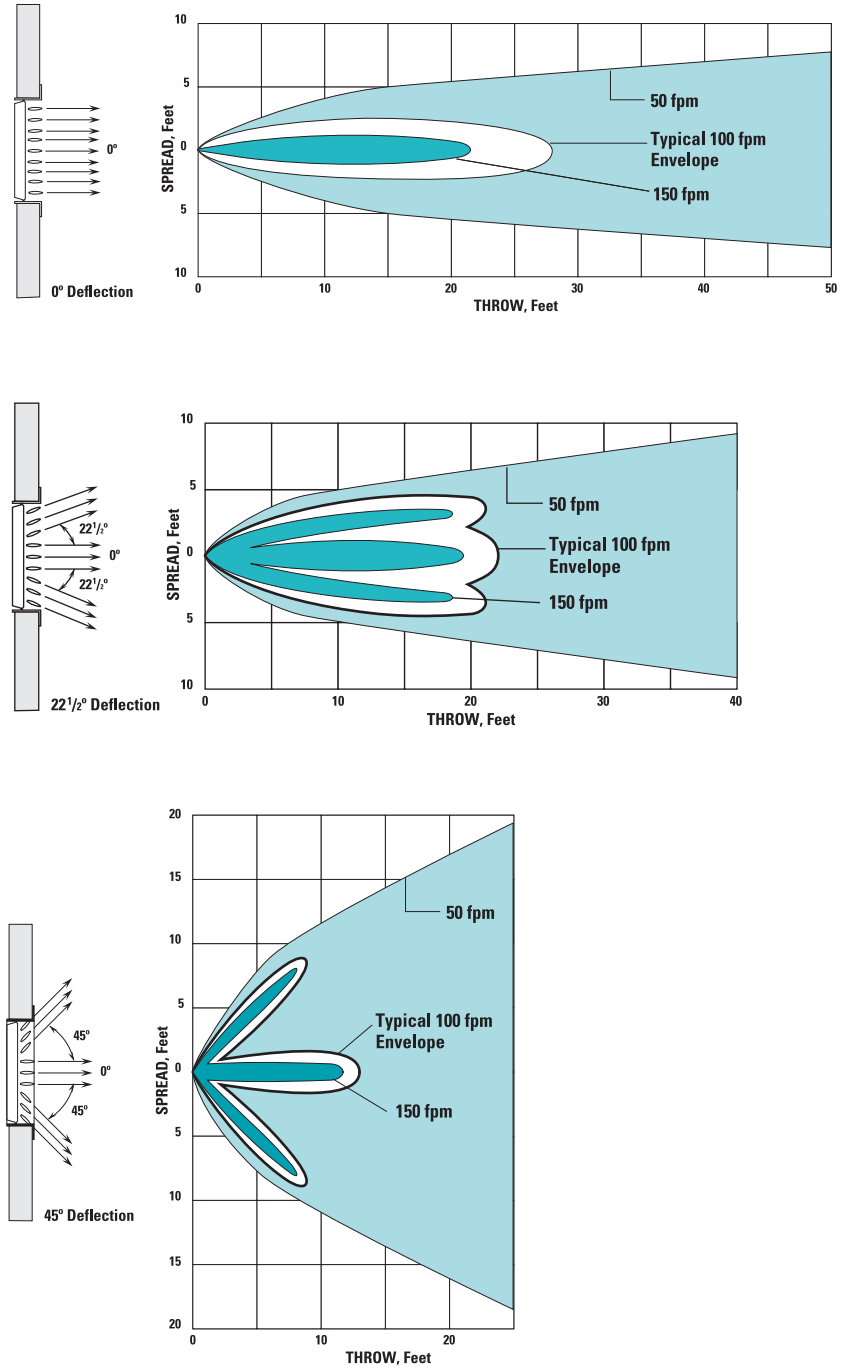
Corrections for Location

In the event that a supply outlet is mounted in a location where its throw will not be affected by surface effect (i.e. more than 2 ft [610] from a wall or ceiling parallel to the air flow), a good approximation is to multiply the catalog throw by 0.70.

This is due to the fact that the air flow without surface effect is exposed to room air on its complete boundary. It tends to lose momentum faster and drop sooner for this reason.

To combat the potential draft problems caused by premature drop, it is advisable to put an upward deflection of 15-20 degrees on supply units without the benefit of surface effect (i.e. free space). Spreading the air pattern horizontally also has the effect of reducing undesired drop. Figures 4 through 6 show the effect that mounting location and blade deflection have on a typical grille. You will also note that for a given cfm, the lower the core velocity, the more resulting drop.

Figure 3



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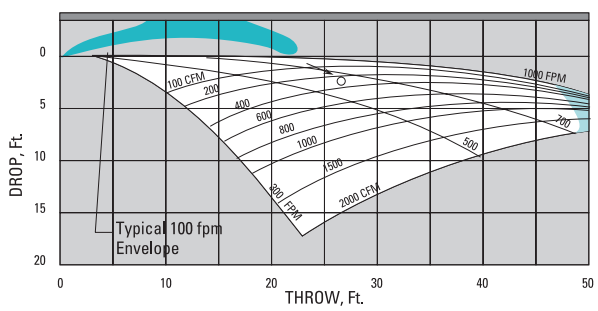
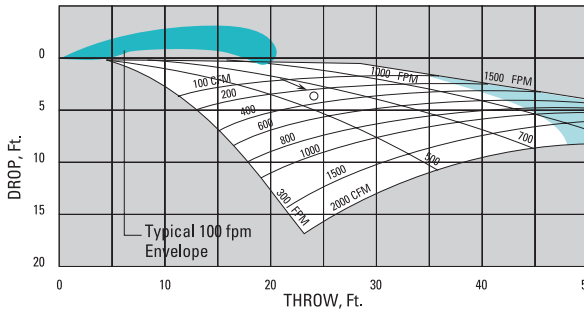
Throw and Drop from Sidewall Outlets

Figure 4: Deflection: Vertical – 20° Up, Horizontal – 0°

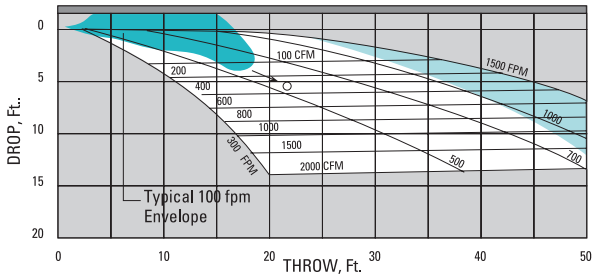


Mounted 2 – 4 ft below Ceiling

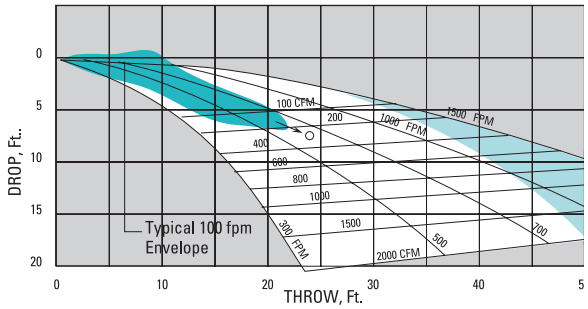


No Ceiling

Figure 5: Deflection: Vertical – 0°, Horizontal – 0°

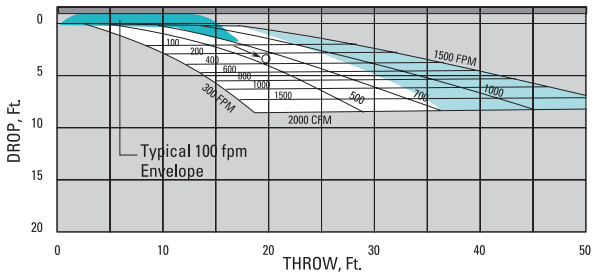


Mounted Within 1 ft of Ceiling

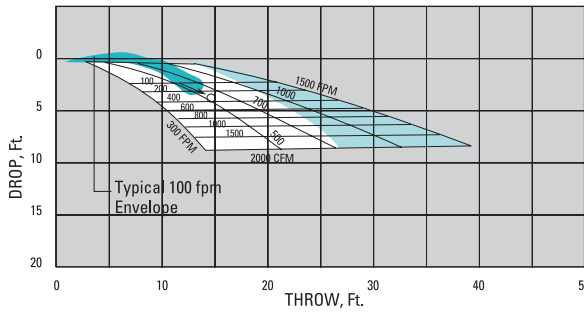


No Ceiling

Figure 6: Deflection: Vertical – 0°, Horizontal – 45°



Mounted Within 1.5 ft of Ceiling



No Ceiling

Notes

1. Throw and drop values are based on 50 fpm terminal velocity.
2. Data is based on tests with 20°F cooling temperature differential in space with no boundary walls.
3. Data is based on Model 21 and 22 cores.
4. Small circle in white area of each chart shows comparative performances of one size of grille at 300 cfm and 600 fpm outlet velocity.
5. Deflection settings and resulting patterns are shown in Product Catalog.
6. Shaded area to right of each chart indicates noise level above 30 NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Throw (continued), Sound

Supply Air Temperature

Buoyancy's influence on throw must also be considered. Cold supply air (approximately 20° F ΔT) has the effect of reducing horizontal throw by 20% while increasing vertical downward throw by 20% from catalog data. Warm supply air (approximately 20 °F ΔT) will increase horizontal throw by approximately 20% while reducing vertical downward throw by 20%.

For further discussion on installation conditions and their effect on throw and air pattern, see Air Distribution Engineering Guide, Section EG.

Summary of Throw Guidelines

1. Multiply catalog throw by 0.70 for free space installation.
2. The lower the core velocity for a given cfm, the more resulting drop (core velocity > 300 fpm recommended).
3. Supply air / room air temperature differential: For every 1 °F difference between the supply and room air temperatures, there will be a 1% change in the catalogued throw distance. For example, 20° F ΔT cooling - multiply horizontal throw by 0.80 and vertical down throw by 1.20.
   20° F ΔT heating - multiply horizontal throw by 1.20 and vertical down throw by 0.80.

Sound

The NC data presented is derived from ASHRAE and ISO Test Standards. In all cases the rating is for a single outlet with accessories as indicated in the performance notes (i.e. in most cases outlets are tested with dampers). When tested with integral dampers, the dampers are in the 100% open position. Supply units with adjustable vanes are rated at zero degree deflection with corrections for 22½ and 45 degrees.

NOTE: For typical application design NC levels see Air Distribution Engineering Guide, Section EG.

NC Corrections

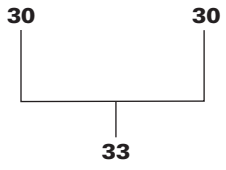
Multiple Outlets

In the event that more than one outlet is serving areas of 400 to 600 sq ft or less, the additive effects of the multiple sound sources must be considered. For example, if two outlets of equal NC are within close proximity, the result is an increase of 3 to the NC level (see example). If the outlets have different NC levels, the increase to the higher NC is inversed to the difference between the two NCs (see example) so that a difference of 10 dB results in no correction (i.e. use the higher NC). See **Figure 7** for the appropriate correction based on the NC differential of outlets.

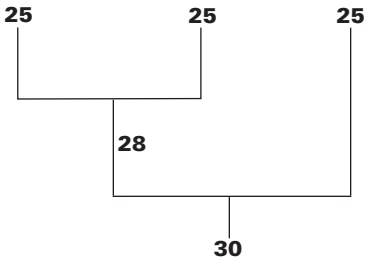
Example 1:

Two 12 x 6 520 Series registers, supplying 390 cfm each in a space < 600 ft²

Rated NC = 30 each



Example 3:



Oversized Outlets NC

In the event that an outlet that exceeds the sizes and capacities of the catalog performance data is selected, NC levels may be approximated by treating the unit as multiple outlets of equal size and capacities. In this way, the NC levels of these smaller multiple outlets may be attained from the catalog data and used to derive the oversized unit's sound level.

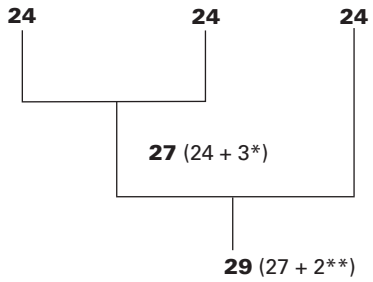
Example 3:

A series 22 supply register size 60 in. x 48 in. supplying 11,250 cfm. Treat this as three 60 in. x 16 in. units, each delivering 3750 cfm at an NC level of 25, as per the previously discussed multiple outlet corrections.

Example 2:

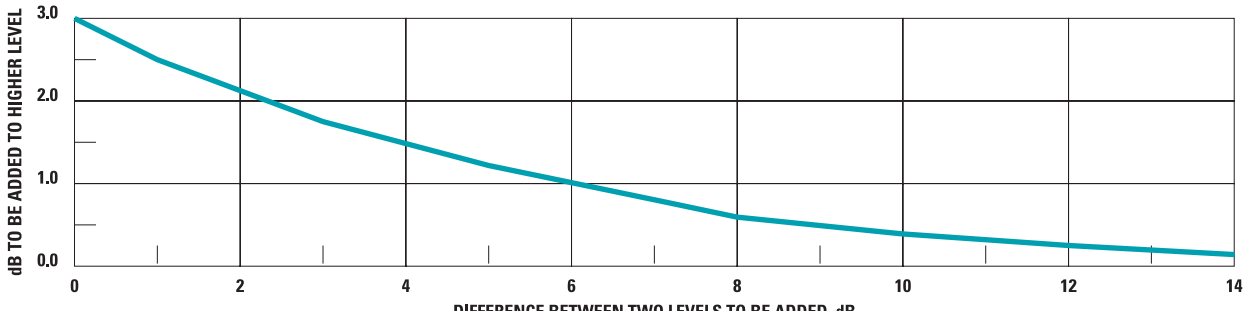
Three 12 x 4 530 Series registers, exhausting 130 cfm each in a space < 600 ft²

Rated NC = 24 each



* Equal sound sources.
**Resulting adder for 3 dB difference between sound sources.
(Ref. **Figure 7**)

Figure 7



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Overview

Price 500/600/700 Series Supply grilles and registers feature precise, high quality roll-formed construction and an attention to detail uncommon in an economical air outlet.

Features

- Available in either steel (500), stainless steel (700) or aluminum (600) construction.
- Individually adjustable roll-formed blades.
- Single or double deflection cores are available.
- Two border styles are available for surface mounted applications.
- Borders are all-welded construction with reinforced precision mitered corners.
- Optional mounting frames accent grille border and protect wall surfaces during grille removal.
- Optional opposed blade damper is available in steel with black finish **(D)** or aluminum with mill finish **(DAL)**.
- Optional insect screen **(IS)** not available with registers.

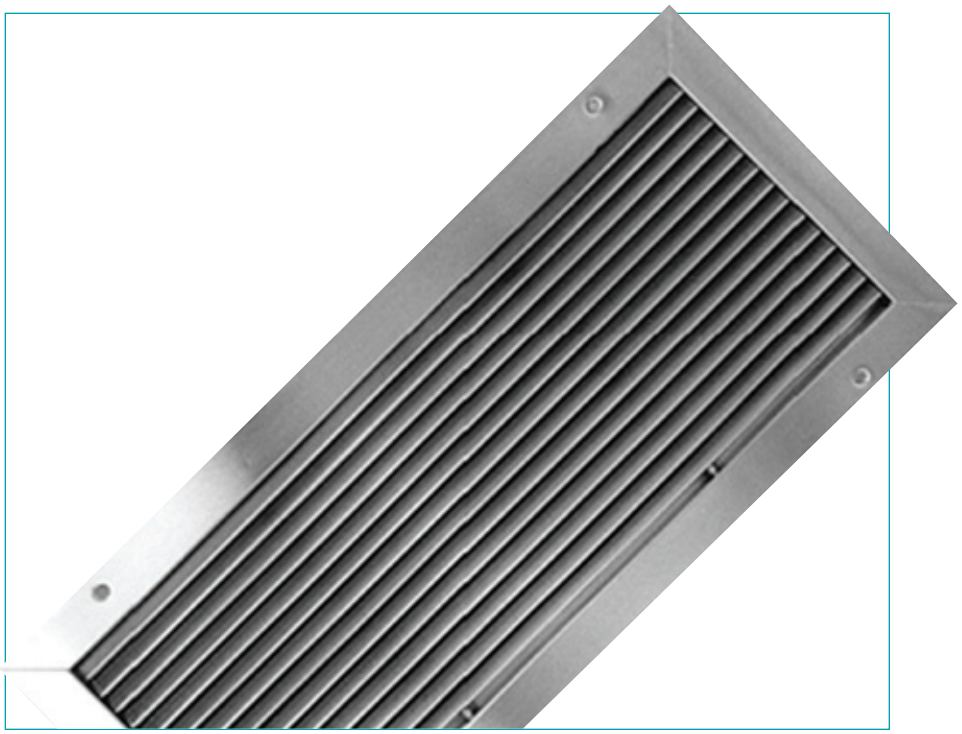
Price 500/600/700 Series Return grilles and registers are designed to match and complement the supply grilles in precise, high quality roll-formed construction and an attention to detail uncommon in an economical air outlet.

Features

- Available in either steel (500), stainless steel (700) or aluminum (600) construction.
- Louvered blades are fixed at 45° deflection to minimize see-through.
- Two blade spacings are available to suit performance and architectural considerations.
- Three border styles are available to suit surface mount and T-bar Lay-in applications.
- Borders are all-welded construction with reinforced precision mitered corners.
- Optional mounting frames accent grille border and protect wall surfaces during grille removal.
- Optional opposed blade damper is available in steel with black finish **(D)** or aluminum with mill finish **(DAL)**.
- Matching filter grilles are available (500FF / 600FF), see page D45.
- Optional multi-louvered or multi-split louvered (540/540S).
- Optional insect screen **(IS)** not available with registers.

Models

Louvered Supply	
Single Deflection	
Steel Construction, 3/4 in. [19] Blade Spacing	**510**
Aluminum Construction, 3/4 in. [19] Blade Spacing	**610**
Stainless, Steel Construction, 3/4 in. [19] Blade Spacing	**710**
Double Deflection	
Steel Construction, 3/4 in. [19] Blade Spacing	**520**
Aluminum Construction, 3/4 in. [19] Blade Spacing	**620**
Stainless, Steel Construction, 3/4 in. [19] Blade Spacing	**720**
Single Deflection	
Steel Construction, 3/4 in. [19] Blade Spacing	
Multi Louvered	**540**
Multi Split Louvered	**540S**
Louvered Return	
Fixed Louvers, 45° Deflection	
Steel Construction	
3/4 in. [19] Louver Spacing	**530**
1/2 in. [13] Louver Spacing	**535**
Aluminum Construction	
3/4 in. [19] Louver Spacing	**630**
1/2 in. [13] Louver Spacing	**635**
Stainless Steel Construction	
3/4 in. [19] Louver Spacing	**730**
1/2 in. [13] Louver Spacing	**735**
Fixed Louvers, 0° Deflection	
Steel Construction	**510Z**
Aluminum Construction	**610Z**
Stainless, Steel Construction	**710Z**



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

510 / 520 – Steel
610 / 620 – Aluminum

Double Deflection Models

Steel Construction

Grilles	**520**
Register c/w Steel Damper	**520D**

Aluminum Construction

Grilles	**620**
Register c/w Steel Damper	**620D**
Register c/w Alum. Damper	**620DAL**

Single Deflection Models

Steel Construction

Grilles	**510**
Register c/w Steel Damper	**510D**

Aluminum Construction

Grilles	**610**
Register c/w Steel Damper	**610D**
Register c/w Alum. Damper	**610DAL**

Mounting / Finish Options

Border Style

Surface Mount	
1 1/4 in. [32] Flat (Standard)	**F**
1 in. [25] Narrow	**N**
Lay-in Inverted 1 1/4 in. [32] T	**TB**
Panel Mounted	**3P**
Spiral Duct Frame	**SDF**

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**

Optional Mounting Frame

For **F** Border	**D**
For **N** Border	**T**

Fastening

Countersunk screwholes c/w oval-head screws	**A**
No screwholes	**Ø**

Finish

White Powder Coat	**B12**

For optional and special finishes see color matrix.

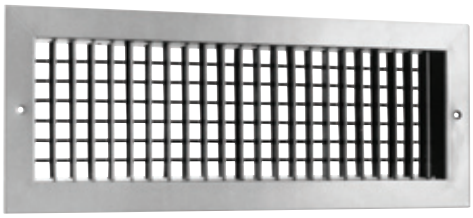
Available Sizes

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**48 in. x 48 in.** [1219 x 1219]

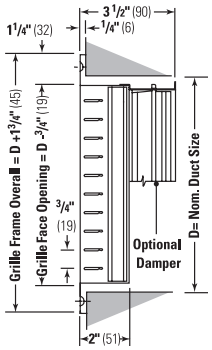
* One-piece

- Grille sizes increase in 1 in. [25] increments (fractional sizes are not available).
- Maximum blade length is 24 in. [610]. Visible mullions are used when blade length exceeds 24 in. [610].
- Multiple grilles are supplied when specified sizes exceed the one-piece maximum limit.
- Insect screen (IS) is 18x16 aluminum mesh.

Double Deflection 3/4 in. [19] Blade Spacing

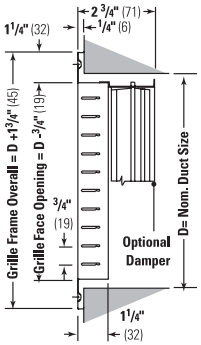


F Border Shown

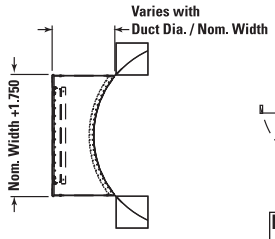


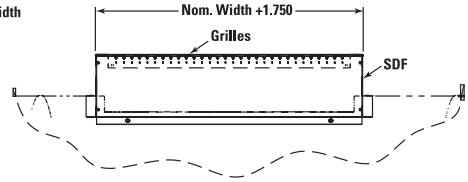
Single Deflection 3/4 in. [19] Blade Spacing

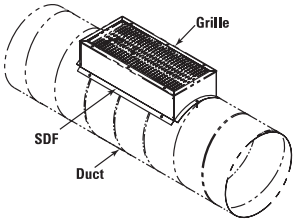
F Border Shown



SDF Spiral Duct Frame







Nom. Size (width)	Nom. Duct Diameter																	
	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	48
4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
7	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
9		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
10			•	•	•	•	•	•	•	•	•	•	•	•	•	•		
11			•	•	•	•	•	•	•	•	•	•	•	•	•	•		
12				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
13					•	•	•	•	•	•	•	•	•	•	•	•	•	•
14						•	•	•	•	•	•	•	•	•	•	•	•	•
15							•	•	•	•	•	•	•	•	•	•	•	•
16								•	•	•	•	•	•	•	•	•	•	•

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, material, damper).
3] Select Border Style according to installation requirements (F is standard).
4] Select Blade Orientation.
5] Select Mounting Frame if desired.
6] Select Fastening Type (A is standard).
7] Select Finish.

Example: 24 in. x 24 in. / 520D / F / L / A / B12
Application Recommendations:
Surface Mount – **F** Border, **A** Fastening.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

530 / 535 – Steel
630 / 635 – Aluminum

3/4 in. [19] Blade Spacing Models

Steel Construction

Grilles	**530**
Register c/w Steel Damper	**530D**

Aluminum Construction

Grilles	**630**
Register c/w Steel Damper	**630D**
Register c/w Alum. Damper	**630DAL**

1/2 in. [13] Blade Spacing Models

Steel Construction

Grilles	**535**
Register c/w Steel Damper	**535D**

Aluminum Construction

Grilles	**635**
Register c/w Steel Damper	**635D**
Register c/w Alum. Damper	**635DAL**

For 530, 535 Fire-Rated applications please see D17.

Mounting / Finish Options

Border Style

Surface Mount	
1 1/4 in. [32] Flat (Standard)	**F**
1 in. [25] Narrow	**N**
Lay-in Inverted 1 1/4 in. [32] T	**TB**
Panel Mounted	**3P**

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**

Optional Mounting Frame

For **F** Border	**D**
For **N** Border	**T**

Fastening

Countersunk screwholes c/w oval-head screws	**A**
No screwholes	**Ø**

Finish

White Powder Coat	**B12**

For optional and special finishes see color matrix.

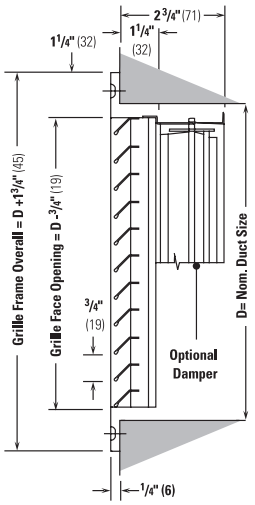
Available Sizes

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**48 in. x 48 in.** [1219 x 1219]

* One-piece

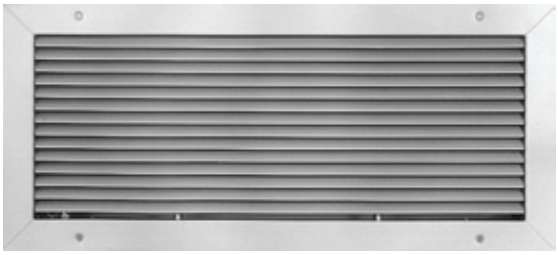
- Grille sizes available in 1 in. [25 increments.
- Maximum blade length is 24 in. [610]. Visible mullions are used when required blade length exceeds 8 in. [203].
- Multiple grilles are supplied when specified sizes exceed the one-piece maximum limit of 48 in. x 48 in. [1219x1219].
- Insect screen (IS) is 18x16 aluminum mesh.

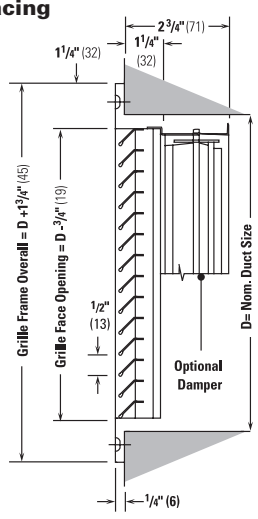
Fixed Louvers, 45° Deflection, 3/4 in. [19] Blade Spacing



F Border Shown

Fixed Louvers, 45° Deflection, 1/2 in. [13] Blade Spacing





F Border Shown

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, material, damper).
3] Select Border Style according to installation requirements (F is standard).
4] Select Blade Orientation.
5] Select Module Size if TB Border selected. (Note: maximum duct size = module size - 2 in.[50])
6] Select Mounting Frame if desired.
7] Select Fastening Type (A is standard, n/a with TB border).
8] Select Finish.

Example: 24 in. x 24 in. / 530 / F / L / A / B12
12 in. x 12 in. / 630 /TB / L / 24 in. x 24 in. / B12

Application Recommendations:
Surface Mount – F Border, A Fastening.
T-bar Lay-in –TB Border, Fastening n/a

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

510Z – Steel
610Z – Aluminum

3/4 in. [19] Blade Spacing Models

Steel Construction

Grilles	**510Z**
Register c/w Steel Damper	**510ZD**

Aluminum Construction

Grilles	**610Z**
Register c/w Steel Damper	**610ZD**
Register c/w Alum. Damper	**610ZDAL**

Mounting / Finish Options

Border Style

Surface Mount	
1 1/4 in. [32] Flat (Standard)	**F**
1 in. [25] Narrow	**N**
Lay-in Inverted 1 1/4 in. [32]T	**TB**

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**

Optional Mounting Frame

For **F** Border	**D**
For **N** Border	**T**

Fastening

Countersunk screwholes c/w oval-head screws	**A**
No screwholes	**Ø**

Finish

White Powder Coat	**B12**

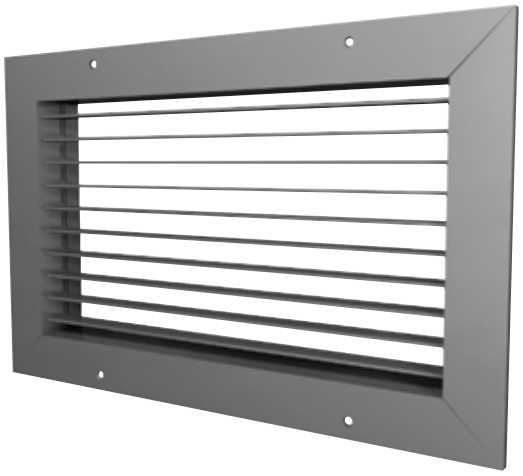
For optional and special finishes see color matrix.

Available Sizes

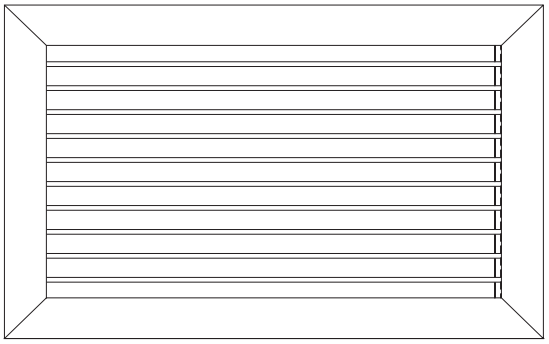
Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**48 in. x 48 in.** [1219 x 1219]

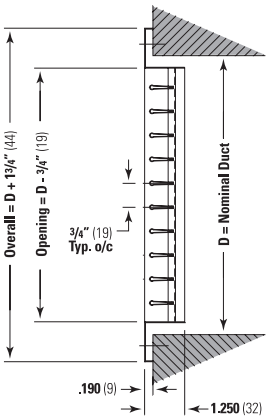
* One-piece

- Grille sizes available in 1 in. [25] increments.
- Maximum blade length is 24 in. [610]. Visible mullions are used when required blade length exceeds 8 in. [203].
- Multiple grilles are supplied when specified sizes exceed the one-piece maximum limit of 48 in. x48 in. [1219 x 1219].
- Insect screen (IS) is 18x16 aluminum mesh.



Fixed Louvers, 0° Deflection, 3/4 in. [19] Blade Spacing





F Border Shown

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, material, damper).
3] Select Border Style according to installation requirements (F is standard).
4] Select Blade Orientation.
5] Select Mounting Frame if desired.
6] Select Fastening Type (A is standard).
7] Select Finish.

Example: 24 in. x 24 in. / 510Z / F / L / A / B12

Application Recommendations:
Surface Mount – F Border, A Fastening.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Fire-Rated Louvered Face Return Grille
500-FR Series

Product Information

Three Hour Rating - Lay-in Models

¾ in. [19] blade spacing **530-FR**
½ in. [10] blade spacing **535-FR**

Price 500-FR Series return grilles and registers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

The Price 500-FR series return grilles are designed to match and complement the supply grilles.

Features

- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Formed Steel Construction - blades and frames.
- Choice of blade orientation.
  Front blades parallel to long dimension **L**
  Front blades parallel to short dimension **S**
- Louvered blades are fixed at 45 degree deflection to minimize see-through.
- Two blade spacings are available to suit performance and architectural considerations.
- T-bar Lay-in only.
- Matching filter grilles are available.
- Optional Volume Controller (Allen key adjustable through face of grille).
- Optional T-bar Lay-in Panel 12 in. x 12 in., 24 in. x 12 in. and 24 in. x 24 in.

Available Module Sizes

Imperial	Metric
24 in. x 24 in.	[610 x 610]
24 in. x 12 in.	[610 x 305]
12 in. x 12 in.	[305 x 305]

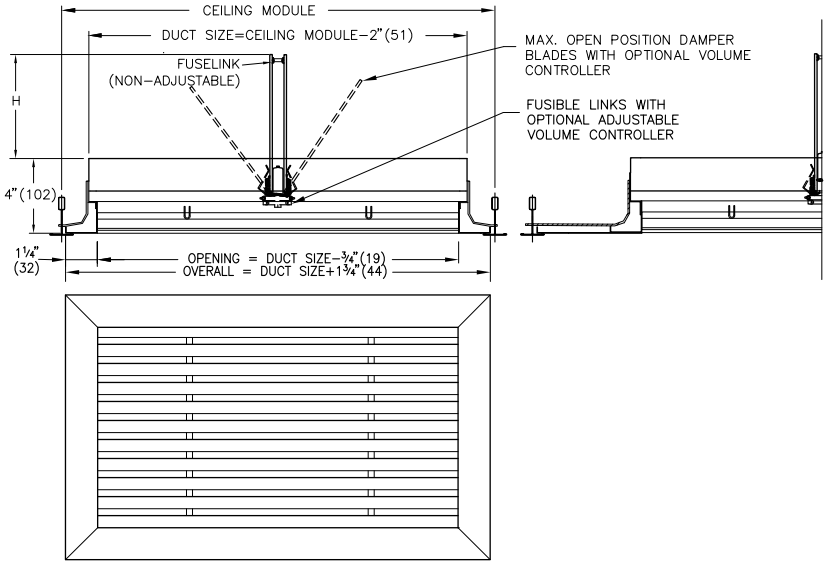
* No oversized grilles

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

530-FR Fixed Louvers, 45° Deflection, ¾ in. [19] Blade Spacing



Dimensional Data - Imperial (in.) / Metric [mm]

Ceiling Module Size	Grille Size	Duct Size
12" x 12" [305 x 305]	11¾" x 11¾" [298 x 298]	10" x 10" [254 x 254]
24" x 12" [610 x 305]	23¾" x 11¾" [603 x 298]	22" x 10" [559 x 254]
24" x 24" [610 x 610]	23¾" x 23¾" [603 x 603]	22" x 22" [559 x 559]

* Panel Option Nominal Duct Size = CM - 4 in. [102].

Square Inlets H = 3 ¾ in.
Round Inlets H = 6 ¼ in.
Square Optional Volume Controller H = 4 ½ in.
Round Optional Volume Controller H = 7 in.
* Adapter required and is part of the Fire-Rated Assembly.

✓ Product Selection Checklist

1] Select Module Size.
2] Select Blade Orientation.
3] Select Outlet Type by model number.
4] Select Finish.

Example: 24 in. x 24 in. / 530-FR / L / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Supply Model

Double Deflection, 3/4 in. [19] Spacing
Grille **720**
Register c/w s.s. damper **720D**

Single Deflection, 3/4 in. [19] Spacing
Grille **710**
Register c/w s.s. damper **710D**

Return Model

45° Deflection, 3/4 in. [19] Spacing Grille **730**
Register c/w s.s. damper **730D**

45° Deflection, 1/2 in. [13] Spacing Grille **735**
Register c/w s.s. damper **735D**

0° Deflection, 3/4 in. [19] Spacing Grille **710Z**
Register c/w s.s. damper **710ZD**

Application

- A complete line of louvered face supply and return grille and registers fabricated of stainless steel to withstand severe or corrosive environments.
- Well-suited to cleanrooms, laboratories and hospital applications with frequent cleaning by strong solutions.
- Ideal for industrial or manufacturing installations where high humidity or corrosive fumes are expected.

Construction

- Stainless steel blades and frame.
- Precision roll-formed blades.
- Borders are all-welded construction with reinforced mitered corners.
- Choice of three border styles.
- Optional stainless steel opposed blade damper available.

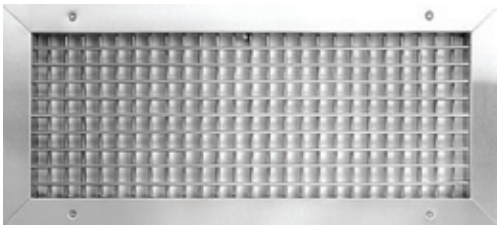
Available Sizes

Minimum	Maximum
6 in. x 4 in. [152 x 102]	**48 in. x 48 in.** [1219 x 1219]

Grille sizes increase in 1 in. [25] increments.

Supply — Adjustable Blades

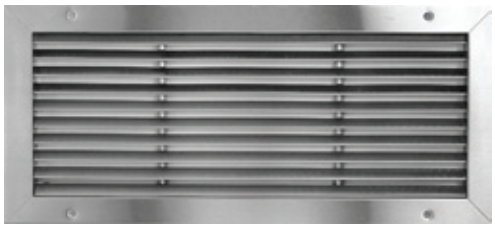
Double Deflection 3/4 in. [19] Blade Spacing



Single Deflection 3/4 in. [19] Blade Spacing

Return — Fixed Louvers

45° 3/4 in. [19] Blade Spacing



45° 1/2 in. [13] Blade Spacing

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information (continued)

Mounting / Finish Options

Border Style
Surface Mount
1 ¼ in. [320 Flat (std.) **F**
1 in. [25] Narrow **N**

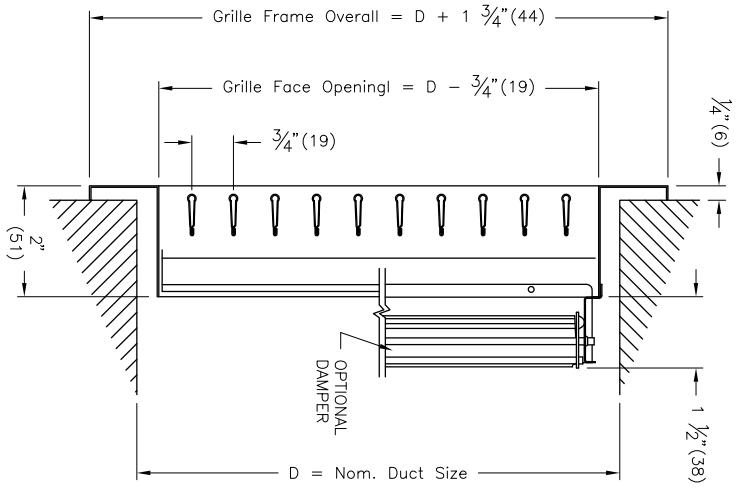
Blade Orientation
Front blades parallel to long dimension **L**
Front blades parallel to short dimension **S**

Optional Mounting Frame
For **F** Border **D**
For **N** Border **T**

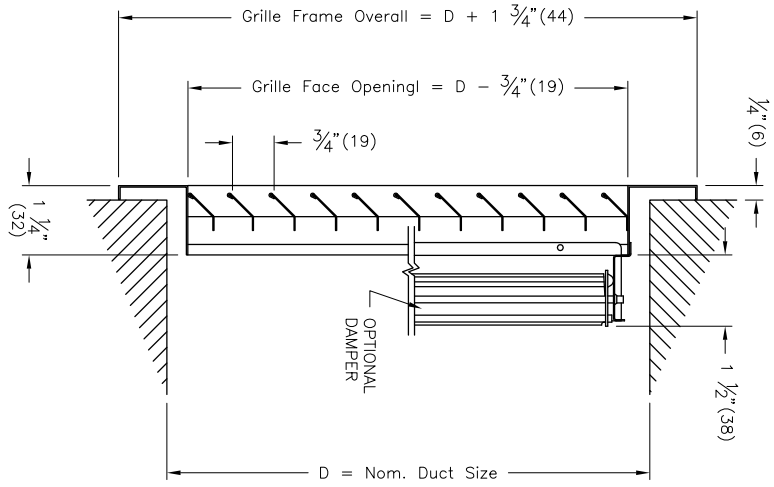
Fastening
Countersunk screwholes c/w oval-head screws **A**

Finish
Border **#4**
Blades **2B**

720 - Double Deflection Grille Type F Border



730 - Return Grille Type F Border



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Border Style according to installation requirements (F is standard).
4] Select Blade Orientation.
5] Select Mounting Frame if desired.
6] Select Fastening Type (A is standard) (N/ATB border).

Example: 24 x 12 / 720D / F / S / A
18 x 6 / 730 / F / L / A

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — Models 510, 520 / 610, 620 / 710, 720 / 910, 920

									NC 20	30			40
	Core Velocity fpm		**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**	**1600**	**1800**
	Velocity Pressure		**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**	**.159**	**.202**
Size	**Total**	**0°**	.014	.024	.038	.052	.071	.094	.146	.212	.287	.374	.475
	Pressure	**22½°**	.017	.028	.045	.063	.085	.114	.176	.256	.347	.452	.574
		45°	.025	.042	.067	.093	.126	.168	.261	.379	.514	.669	.850
Ac = **0.15** ft² 7 x 4, 6 x 5	**cfm**		**45**	**60**	**75**	**90**	**105**	**120**	**150**	**180**	**210**	**240**	**270**
	NC		—	—	—	—	**15**	**19**	**26**	**31**	**36**	**40**	**44**
		0°	4-6-12	5-8-14	7-10-16	8-12-17	9-13-19	11-14-20	13-16-22	14-17-24	15-19-26	16-20-28	17-22-30
	Throw	**22½°**	3-5-10	4-6-11	6-8-13	6-10-14	7-10-15	9-11-16	10-13-18	11-14-19	12-15-21	13-16-22	14-18-24
	ft	**45°**	2-3-6	3-4-7	3-5-8	4-6-9	5-7-9	5-7-10	6-8-11	7-9-12	8-9-13	8-10-14	9-11-15
Ac = **0.18** ft² 8 x 4, 7 x 5, 6 x 6	**cfm**		**55**	**70**	**90**	**110**	**125**	**145**	**180**	**215**	**250**	**290**	**325**
	NC		—	—	—	—	**16**	**20**	**27**	**32**	**37**	**41**	**45**
		0°	4-7-13	6-8-15	7-11-17	9-13-19	10-15-20	11-16-22	14-17-24	15-19-26	17-21-29	18-22-31	19-24-33
	Throw	**22½°**	3-6-10	5-6-12	6-9-14	7-10-15	8-12-16	9-13-18	11-14-19	12-15-21	14-17-23	14-18-25	15-19-26
	ft	**45°**	2-3-7	3-4-8	4-5-9	4-7-10	5-7-10	6-8-11	7-9-12	8-10-13	8-10-14	9-11-15	10-12-16
Ac = **0.22** ft² 10 x 4, 8 x 5, 7 x 6	**cfm**		**65**	**90**	**110**	**130**	**155**	**175**	**220**	**265**	**310**	**350**	**395**
	NC		—	—	—	—	**17**	**21**	**27**	**33**	**38**	**42**	**45**
		0°	4-7-14	7-10-17	8-12-19	9-15-21	11-16-23	13-17-24	16-19-27	17-21-29	19-23-32	20-25-34	21-26-36
	Throw	**22½°**	3-6-11	6-8-14	6-10-15	7-12-17	9-13-18	10-14-19	13-15-22	14-17-23	15-18-26	16-20-27	17-21-29
	ft	**45°**	2-4-7	3-5-9	4-6-10	5-7-10	6-8-11	6-9-12	8-10-13	9-11-15	9-12-16	10-12-17	11-13-18
Ac = **0.26** ft² 12 x 4, 10 x 5, 8 x 6	**cfm**		**80**	**105**	**130**	**155**	**180**	**210**	**260**	**310**	**365**	**415**	**470**
	NC		—	—	—	—	**17**	**21**	**28**	**34**	**38**	**42**	**46**
		0°	5-8-16	7-11-19	9-13-21	10-16-23	12-17-24	14-19-26	17-21-29	19-23-32	20-25-35	22-26-37	23-27-40
	Throw	**22½°**	4-6-13	6-9-15	7-10-17	8-13-18	10-14-19	11-15-21	14-17-23	15-18-26	16-20-28	18-21-30	18-22-32
	ft	**45°**	3-4-8	4-5-9	4-7-10	5-8-11	6-9-12	7-9-13	8-11-15	9-12-16	10-13-17	11-13-18	12-14-20
Ac = **0.30** ft² 14 x 4	**cfm**		**90**	**120**	**150**	**180**	**210**	**240**	**300**	**360**	**420**	**480**	**540**
	NC		—	—	—	—	**18**	**22**	**29**	**34**	**39**	**43**	**47**
		0°	5-9-17	8-11-20	9-14-22	11-17-24	13-19-26	15-20-28	18-23-31	20-25-34	22-27-37	24-29-40	25-30-42
	Throw	**22½°**	4-7-14	6-9-16	7-11-18	9-14-19	10-15-21	12-16-22	14-18-25	16-20-27	18-22-30	19-23-32	20-24-34
	ft	**45°**	3-4-8	4-6-10	5-7-11	6-8-12	7-9-13	8-10-14	9-11-16	10-12-17	11-13-19	12-14-20	12-15-21
Ac = **0.34** ft² 16 x 4, 12 x 5, 10 x 6	**cfm**		**100**	**135**	**170**	**205**	**240**	**270**	**340**	**410**	**475**	**545**	**610**
	NC		—	—	—	—	**19**	**23**	**29**	**35**	**40**	**44**	**47**
		0°	5-9-18	8-12-21	10-15-24	12-19-26	14-20-28	16-22-30	20-24-33	22-26-37	23-28-40	25-30-42	26-32-45
	Throw	**22½°**	4-7-14	6-10-17	8-12-19	10-15-21	11-16-22	13-18-24	16-19-26	18-21-30	18-22-32	20-24-34	21-26-36
	ft	**45°**	3-4-9	4-6-11	5-8-12	6-9-13	7-10-14	8-11-15	10-12-17	11-13-18	12-14-20	12-15-21	13-16-22
Ac = **0.39** ft² 18 x 4, 14 x 5, 12 x 6, 8 x 8	**cfm**		**115**	**155**	**195**	**235**	**275**	**310**	**390**	**470**	**545**	**625**	**700**
	NC		—	—	—	—	**19**	**23**	**30**	**35**	**40**	**44**	**48**
		0°	6-9-19	9-13-23	11-16-25	13-19-28	15-22-30	17-23-32	21-26-36	23-27-40	25-30-42	27-33-45	28-35-48
	Throw	**22½°**	5-7-15	7-10-18	9-13-20	10-15-22	12-18-24	14-18-26	17-21-29	18-22-32	20-24-34	22-26-36	22-28-38
	ft	**45°**	3-5-10	4-6-11	5-8-13	7-10-14	8-11-15	9-12-16	11-13-18	12-14-20	12-15-21	13-16-23	14-17-24

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflectionand and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 ½°–45°
   The listed deflection settings refer to horizontal deflection. For a 20° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 22½° horizontal setting.

The performance tables are based on registers with core style 520 with an opposed blade damper. The performance of other core styles, with or without dampers, can be obtained by the application of correction factors to the tabulated performance data.

See Correction Factor Table, page D23.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — Models 510, 520 / 610, 620 / 710, 720 / 910, 920

									NC 20	30		40		50
	Core Velocity fpm		**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**	**1600**	**1800**
	Velocity Pressure		**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**	**.159**	**.202**
Size	**Total**	**0°**	.014	.024	.038	.052	.071	.094	.146	.212	.287	.374	.475
	Pressure	**22½°**	.017	.028	.045	.063	.085	.114	.176	.256	.347	.452	.574
		45°	.025	.042	.067	.093	.126	.168	.261	.379	.514	.669	.850
Ac = **0.46** ft²	**cfm**		**140**	**185**	**230**	**275**	**320**	**370**	**460**	**550**	**645**	**735**	**830**
20 x 4 16 x 5	**NC**		—	—	—	**15**	**20**	**24**	**31**	**36**	**41**	**45**	**49**
14 x 6 10 x 8		**0°**	7-10 -22	9-14-25	12-17-27	14-22-30	16-23-32	19-25-35	23-27-39	25-31-43	27-33-46	29-35-49	31-38-52
	Throw	**22½°**	6-8-18	7-11-20	10-14-22	11-18-24	13-18-26	15-20-28	18-22-31	20-25-34	22-26-37	23-28-39	25-30-42
	ft	**45°**	3-5-11	5-7-12	6-9-14	7-11-15	8-11-16	10-13-17	11-14-20	12-15-21	14-17-23	14-18-24	15-19 -26
Ac = **0.52** ft²	**cfm**		**155**	**210**	**260**	**310**	**365**	**415**	**520**	**625**	**730**	**830**	**935**
24 x 4 18 x 5	**NC**		—	—	—	**16**	**20**	**24**	**31**	**37**	**41**	**45**	**49**
16 x 6		**0°**	7-11-23	10-15-26	13-19-29	15-22-32	18-25-35	20-26-37	24-30-41	27-33-45	29-35-49	31-38-52	32-40-55
	Throw	**22½°**	6-9-18	8-12-21	10-15-23	12-18-26	14-20-28	16-21-30	19-24-33	22-26-36	22-28-39	25-30-42	26-32-44
	ft	**45°**	3-5-11	5-7-13	6-9-15	8-11-16	9-12-17	10-13-18	12-15-21	13-16-23	14-18-24	15-19-26	16-20-28
Ac = **0.60** ft²	**cfm**		**180**	**240**	**300**	**360**	**420**	**480**	**600**	**720**	**840**	**960**	**1080**
28 x 4 20 x 5	**NC**		—	—	—	**16**	**21**	**25**	**32**	**37**	**42**	**46**	**50**
18 x 6 12 x 8		**0°**	7-12-24	11-16-28	14-20-31	16-24-34	19-27-37	22-29-40	26-32-45	29-35-48	31-38-52	33-40-56	35-43-59
10 x 10	**Throw**	**22½°**	6-10-19	9-13-22	11-16-25	13-19-27	15-22-30	18-23-32	21-26-36	23-28-38	25-30-42	26-32-45	28-34-47
	ft	**45°**	4-6-12	5-8-14	7-10-16	8-12-17	10-13-19	11-14-20	13-16-22	14-17-24	15-19-26	16-20-28	17-21-29
Ac = **0.69** ft²	**cfm**		**205**	**275**	**345**	**415**	**485**	**550**	**690**	**830**	**965**	**1100**	**1240**
30 x 4 24 x 5	**NC**		—	—	—	**17**	**22**	**26**	**32**	**38**	**43**	**47**	**50**
20 x 6 14 x 8		**0°**	8-13-26	12-17-30	15-22-34	18-26-37	21-29-40	24-31-43	28-34-47	30-38-52	33-40-56	35-43-60	37-45-63
12 x 10	**Throw**	**22½°**	6-10-21	10-14-24	12-18-27	14-21-30	17-23-32	19-25-34	22-27-38	24-30-42	26-32-45	28-34-48	30-36-50
	ft	**45°**	4-6-13	6-9-15	7-11-17	9-13-18	10-14-20	12-15-21	14-17-24	15-19-26	16-20-28	18-22-30	19-23-31
Ac = **0.81** ft²	**cfm**		**245**	**325**	**405**	**485**	**565**	**650**	**810**	**970**	**1130**	**1300**	**1460**
36 x 4 28 x 5	**NC**		—	—	—	**18**	**22**	**26**	**33**	**39**	**43**	**47**	**51**
22 x 6 16 x 8		**0°**	8-14-28	13-19-33	16-23-37	19-28-40	23-31-43	26-33-46	30-37-51	33-41-56	36-44-60	38-46-64	40-49-68
14 x 10	**Throw**	**22½°**	6-11-22	10-15-26	13-18-30	15-22-32	18-25-34	21-26-37	24-30-41	26-33-45	29-35-48	30-37-51	32-39-54
	ft	**45°**	4-7-14	6-9-16	8-12-18	10-14-20	11-15-22	13-17-23	15-19-26	17-20-28	18-22-30	19-23-32	20-25-34
Ac = **0.90** ft²	**cfm**		**270**	**360**	**450**	**540**	**630**	**720**	**900**	**1080**	**1260**	**1440**	**1620**
40 x 4 30 x 5	**NC**		—	—	—	**18**	**23**	**27**	**34**	**39**	**44**	**48**	**51**
26 x 6 18 x 8		**0°**	9-15-30	14-20-34	17-25-39	21-30-42	24-33-45	27-35-48	32-39-55	35-43-59	37-46-63	40-49-68	42-52-72
16 x 10 12 x 12	**Throw**	**22½°**	7-12-24	11-16-27	14-20-31	17-24-34	19-26-36	22-28-38	26-31-44	28-34-47	30-37-50	32-39-54	34-42-58
	ft	**45°**	5-8-15	7-10-17	9-13-19	10-15-21	12-16-23	14-17-24	16-20-27	17-21-29	19-23-32	20-24-34	21-26-36
Ac = **1.07** ft²	**cfm**		**320**	**430**	**535**	**640**	**750**	**855**	**1070**	**1280**	**1500**	**1710**	**1930**
48 x 4 36 x 5	**NC**		—	—	—	**19**	**24**	**28**	**34**	**40**	**45**	**49**	**52**
30 x 6 22 x 8		**0°**	10-16-32	15-22-38	18-28-42	22-33-46	26-36-49	29-38-53	35-43-59	38-48-64	41-50-69	43-53-74	46-57-79
18 x 10 14 x 12	**Throw**	**22½°**	8-13-26	12-18-30	14-22-34	18-26-37	21-29-39	23-30-42	28-34-47	30-37-51	33-40-55	34-42-59	37-46-63
	ft	**45°**	5-8-16	7-11-19	9-14-21	11-17-23	13-18-25	14-19-26	17-21-29	19-23-32	20-25-35	22-27-37	23-28-40
									NC 20	**30**		**40**		**50**

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflectionand and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 ½°–45°
   The listed deflection settings refer to horizontal deflection. For a 20° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 22½° horizontal setting.

The performance tables are based on registers with core style 520 with an opposed blade damper. The performance of other core styles, with or without dampers, can be obtained by the application of correction factors to the tabulated performance data.

See Correction Factor Table, page D23.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — Models 510, 520 / 610, 620 / 710, 720 / 910, 920

Size							NC 20		30		40		50	
	Core Velocity fpm		300	400	500	600	700	800	1000	1200	1400	1600	1800
	Velocity Pressure		.006	.010	.016	.022	.030	.040	.062	.090	.122	.159	.202
	Total Pressure	0°	.014	.024	.036	.052	.071	.094	.146	.212	.287	.374	.475
		22½°	.017	.028	.045	.063	.085	.114	.176	.256	.347	.452	.574
		45°	.025	.042	.067	.093	.126	.168	.261	.379	.514	.669	.850
Ac = **1.18** ft²	cfm		353	470	590	710	825	945	1180	1420	1650	1890	2120
40 x 5 34 x 6	NC		—	—	—	19	24	28	35	40	45	49	53
24 x 8 20 x 10	Throw ft	0°	10-17-34	15-23-40	19-28-44	23-35-48	27-38-52	31-40-56	36-45-62	40-48-67	43-52-73	45-56-78	48-59-83
16x 12 14 x 14		22½°	8-14-27	12-18-32	15-22-35	18-28-38	22-30-42	25-32-45	29-35-50	32-38-54	34-42-58	36-45-62	38-47-66
		45°	5-8-17	8-11-20	10-14-22	12-17-24	13-19-26	15-20-28	18-22-31	20-24-34	21-26-36	23-28-39	24-30-41
Ac = **1.34** ft²	cfm		400	535	670	805	940	1070	1340	1610	1880	2140	2410
46 x 5 38 x 6	NC		—	—	—	20	24	28	35	41	45	50	53
28 x 8 22 x 10	Throw ft	0°	11-18-36	16-24-42	20-30-47	24-37-51	28-40-56	32-43-59	39-47-65	42-52-72	45-56-78	48-60-83	51-63-89
18 x 12 16 x 14		22½°	9-14-29	13-19-34	16-24-38	19-30-41	22-32-45	26-34-47	31-38-52	34-42-58	36-45-62	38-48-66	41-50-71
		45°	6-9-18	8-12-21	10-15-23	12-18-25	14-20-28	16-21-29	19-23-33	21-26-36	23-28-39	24-30-42	26-32-44
Ac = **1.60** ft²	cfm		480	540	800	960	1120	1280	1600	1920	2240	2560	2880
44 x 6 32 x 8	NC		—	—	15	21	25	29	36	42	46	50	54
26 x 10 22 x 12	Throw ft	0°	13-20-40	18-26-46	22-32-51	27-39-56	31-43-60	35-46-64	42-51-72	46-56-79	49-61-85	53-65-91	56-69-97
18 x 14 16 x 16		22½°	10-16-32	14-21-37	18-26-41	22-31-45	25-34-48	28-37-51	34-41-58	37-45-63	39-49-68	42-52-73	45-55-78
		45°	6-10-20	9-13-23	11-16-25	13-20-28	15-22-30	17-23-32	21-26-36	23-28-39	25-30-43	26-32-46	28-35-48
Ac = **1.80** ft²	cfm		540	720	900	1080	1260	1440	1800	2160	2520	2880	3240
50 x 6 36 x 8	NC		—	—	16	21	26	30	37	42	47	51	54
28 x 10 24 x 12	Throw ft	0°	13-21-42	19-28-48	24-35-55	29-43-59	32-46-63	37-49-68	45-55-76	48-60-84	52-65-90	56-69-87	60-73-103
20 x 14 18 x 16		22½°	10-17-34	15-22-38	19-28-44	23-34-47	26-37-50	30-39-54	36-44-61	38-48-67	42-52-72	45-55-78	48-58-82
		45°	7-11-21	9-14-24	12-17-27	14-21-29	16-23-32	19-24-34	22-27-38	24-30-42	26-32-45	28-35-48	30-37-51
Ac = **2.08** ft²	cfm		625	830	1040	1250	1460	1660	2080	2500	2910	3330	3740
58 x 6 42 x 8	NC		—	—	16	22	26	30	37	43	47	51	55
32 x 10 28 x 12	Throw ft	0°	14-23-45	20-30-52	26-38-58	30-44-63	35-49-68	40-53-73	48-59-82	52-64-90	56-69-97	60-75-104	64-79-110
24 x 14 20 x 16		22½°	11-18-36	16-24-42	21-30-46	24-35-50	28-39-54	32-42-58	38-47-66	42-51-72	45-55-78	48-60-83	51-63-88
18 x 18		45°	7-11-23	10-15-26	13-19-29	15-22-32	17-25-34	20-26-37	24-29-41	26-32-45	28-35-48	30-37-52	32-40-55
Ac = **2.45** ft²	cfm		735	980	1220	1470	1720	1960	2450	2940	3430	3920	4410
48 x 8 38 x 10	NC		—	—	17	22	27	31	38	43	48	52	56
32 x 12 26 x 14	Throw ft	0°	15-25-49	22-33-57	27-40-62	32-48-68	38-54-74	43-57-80	52-64-89	57-70-97	61-76-106	65-81-113	70-87-120
24 x 16 20 x 18		22½°	12-20-39	18-26-46	22-32-50	26-38-54	30-43-59	34-46-64	42-51-71	46-56-78	49-61-85	52-65-90	56-70-96
		45°	7-12-24	11-16-28	14-20-31	16-24-34	19-27-37	22-28-40	26-32-45	28-35-49	32-38-53	33-42-56	35-43-60
Ac = **2.78** ft²	cfm		835	1110	1390	1670	1950	2220	2780	3340	3890	4450	5000
56 x 8 40 x 10	NC		—	—	17	23	28	32	38	44	49	53	56
36 x 12 30 x 14	Throw ft	0°	16-26-52	23-34-60	29-42-67	35-50-73	40-57-79	45-61-85	55-68-95	60-75-104	65-81-112	70-87-122	74-93-128
26 x 16 24 x 18		22½°	13-21-42	18-27-48	23-34-54	28-40-58	32-48-63	36-49-68	44-54-76	48-60-83	52-65-90	56-70-98	59-74-102
22 x 20		45°	8-13-26	12-17-30	14-21-33	17-25-37	20-28-40	23-30-42	28-34-47	30-37-52	33-40-56	35-43-61	37-46-64
						NC 20		30		40		50	

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflectionand and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 ½°–45°
   The listed deflection settings refer to horizontal deflection. For a 20° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 22½° horizontal setting.

The performance tables are based on registers with core style 520 with an opposed blade damper. The performance of other core styles, with or without dampers, can be obtained by the application of correction factors to the tabulated performance data.

See Correction Factor Table, page D23.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — Models 510, 520 / 610, 620 / 710, 720 / 910, 920

Size						NC20		30		40		50	
	Core Velocity fpm		300	400	500	600	700	800	1000	1200	1400	1600	1800
	Velocity Pressure		.006	.010	.016	.022	.030	.040	.062	.090	.122	.159	.202
	Total Pressure	0°	.014	.024	.036	.052	.071	.094	.146	.212	.287	.374	.475
		22½°	.017	.028	.045	.063	.085	.114	.176	.256	.347	.452	.574
		45°	.025	.042	.067	.093	.126	.168	.261	.379	.514	.669	.850
Ac = **3.11** ft²	cfm		**935**	**1240**	**1560**	**1870**	**2180**	**2490**	**3110**	**3730**	**4350**	**4980**	**5600**
62 x 8 48 x 10	NC		—	—	**18**	**23**	**28**	**32**	**39**	**44**	**49**	**53**	**57**
40 x 12 34 x 14	Throw ft	0°	17-27-55	24-35-63	34-45-71	41-53-78	47-60-84	48-64-90	58-72-100	64-79-110	69-86-118	74-92-128	79-97-135
30 x 16 26 x 18		22½°	14-22-44	19-29-50	27-35-57	33-42-62	38-48-67	38-51-72	46-58-80	51-63-88	55-69-94	59-74-102	63-78-108
24 x 20		45°	8-14-28	12-18-31	17-22-35	20-26-39	23-30-42	24-32-45	29-36-50	32-40-55	35-43-59	37-46-64	40-49-67
Ac = **3.61** ft²	cfm		**1080**	**1440**	**1800**	**2170**	**2530**	**2890**	**3610**	**4330**	**5050**	**5780**	**6500**
72 x 8 58 x 10	NC		—	—	**19**	**24**	**29**	**33**	**40**	**45**	**50**	**54**	**57**
48 x 12 36 x 16	Throw ft	0°	18-29-59	26-38-68	32-47-76	38-56-84	44-65-90	51-69-97	63-78-108	69-88-118	75-93-128	80-99-137	86-105-146
30 x 18 28 x 20		22½°	14-23-47	21-30-54	26-38-61	30-45-67	35-52-72	41-55-78	50-62-86	55-69-94	60-74-102	64-79-110	69-84-117
24 x 24		45°	9-14-29	13-19-34	16-23-38	19-28-42	22-32-45	25-35-48	31-39-54	35-43-59	38-46-64	40-50-69	43-52-73
Ac = **4.29** ft²	cfm		**1290**	**1720**	**2140**	**2570**	**3000**	**3430**	**4290**	**5150**	**6010**	**6860**	**7720**
68 x 10 56 x 12	NC		—	—	**19**	**24**	**29**	**33**	**40**	**45**	**50**	**54**	**58**
48 x 14 42 x 16	Throw ft	0°	19-31-64	28-41-74	35-50-83	42-60-91	49-71-98	56-76-106	69-85-118	76-93-130	82-102-140	88-108-149	92-115-158
36 x 18 32 x 20		22½°	15-25-51	22-33-59	28-40-66	34-48-73	39-57-78	45-81-85	55-68-94	61-74-104	66-82-112	70-86-119	74-92-126
28 x 24		45°	10-15-32	14-20-37	17-25-42	21-30-46	24-35-49	28-38-53	34-43-59	38-47-65	41-51-70	44-54-75	46-57-79
Ac = **4.65** ft²	cfm		**1400**	**1880**	**2320**	**2790**	**3260**	**3720**	**4650**	**5580**	**6510**	**7440**	**8370**
72 x 10 60 x 12	NC		—	—	**20**	**25**	**30**	**34**	**41**	**46**	**51**	**55**	**59**
52 x 14 44 x 16	Throw ft	0°	20-33-67	29-43-78	36-54-87	44-65-95	51-74-103	58-79-110	77-89-123	79-97-135	86-105-146	91-113-156	96-120-164
40 x 18 36 x 20		22½°	16-26-54	23-34-62	29-43-70	35-52-76	41-59-82	46-63-88	58-71-98	63-78-108	69-84-117	73-90-125	77-96-131
30 x 24		45°	10-16-33	15-22-39	18-27-43	22-32-48	25-37-52	29-40-55	36-44-61	39-49-67	43-52-73	46-56-78	48-60-82
Ac = **5.58** ft²	cfm		**1670**	**2230**	**2790**	**3350**	**3910**	**4460**	**5580**	**6700**	**7810**	**8930**	**10,000**
72 x 12 60 x 14	NC		—	—	**20**	**26**	**31**	**35**	**41**	**47**	**52**	**56**	**59**
54 x 16 48 x 18	Throw ft	0°	22-36-73	31-47-85	40-59-95	47-72-104	55-81-113	63-87-122	79-97-135	87-107-148	93-116-160	100-125-171	106-132-180
42 x 20 36 x 24		22½°	18-29-58	25-38-68	32-47-76	38-58-83	44-65-90	50-70-98	63-78-108	70-86-118	74-93-130	80-100-137	85-105-140
		45°	11-18-37	16-23-43	20-30-48	23-36-52	28-41-57	31-44-61	39-49-67	43-53-74	47-53-80	50-62-86	53-66-90
Ac = **6.25** ft²	cfm		**1880**	**2500**	**3120**	**3750**	**4380**	**5000**	**6250**	**7500**	**8750**	**10,000**	**11,200**
72 x 14 60 x 16	NC		—	—	**21**	**27**	**31**	**35**	**42**	**48**	**52**	**56**	**60**
54 x 18 48 x 20	Throw ft	0°	23-37-78	33-49-90	42-62-100	50-75-103	58-86-119	67-93-128	84-104-143	92-113-156	96-123-169	106-132-180	112-140-192
40 x 24 32 x 30		22½°	18-30-62	26-39-72	34-50-80	40-60-82	46-69-95	54-74-102	67-83-114	74-90-125	78-98-135	85-105-140	90-112-153
		45°	12-19-39	17-25-45	21-31-50	25-37-51	29-43-60	34-46-64	42-52-72	46-57-78	49-61-85	53-66-90	56-70-96
				NC20		30		40		50		60	

For Performance Notes, see page D22.

Corrections for 500/600/700 Series Core Styles

Core Style	Opposed Blade Damper	Defl'n	Multiply Total Pressure	Multiply Throw	Add NC
520	Yes	0°	1.0	1.0	0
620	Yes	22½°	1.0	1.0	+2
720	Yes	45°	1.0	1.0	+6
510	Yes	0°	1.0	1.0	-4
610	Yes	22½°	1.0	1.0	-1
710	Yes	45°	1.0	1.0	+4
520	No	0°	0.97	0.85	-7
620	No	22½°	0.97	0.92	-3
720	No	45°	0.97	0.93	+3
510	No	0°	0.97	0.77	-10
610	No	22½°	0.97	0.80	-6
710	No	45°	0.97	0.82	+1

Corrections for 900 Series Core Styles

Core Style	Opposed Blade Damper	Defl'n	Multiply Total Pressure	Multiply Throw	Add NC
920	Yes	0°	1.0	1.0	0
920	Yes	22½°	1.0	1.0	+2
920	Yes	45°	1.0	1.0	+6
910	Yes	0°	1.0	1.0	0
910	Yes	22½°	1.0	1.0	+2
910	Yes	45°	1.0	1.0	+9
920	No	0°	0.97	0.8	-4
920	No	22½°	0.97	0.8	-2
920	No	45°	0.97	0.8	+1
910	No	0°	0.97	0.8	-4
910	No	22½°	0.97	0.8	-2
910	No	45°	0.97	0.8	+1

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data – 0° Deflection

Core Area Sq. ft	Nominal Size			Core Velocity / Velocity Pressure / Negative s.p.	300 .006 .012	400 .010 .022	500 .016 .035	600 .022 .050	700 .031 .068	800 .040 .089	1000 .062 .138	1100 .075 .167
0.15	7 x 4			**cfm**	45	60	75	90	105	120	150	165
	6 x 5			**NC**	-	-	-	17	22	27	35	38
0.18	8 x 4	6 x 6		**cfm**	55	70	90	110	125	145	180	215
	7 x 5			**NC**	-	-	-	18	23	28	36	39
0.22	10 x 4	7 x 6		**cfm**	65	90	110	130	155	175	220	265
	8 x 5			**NC**	-	-	-	18	24	29	36	40
0.26	12 x 4	8 x 6		**cfm**	80	105	130	155	180	210	260	310
	10 x 5			**NC**	-	-	-	19	25	29	37	40
.030	14 x 4			**cfm**	90	120	150	180	210	240	300	330
				NC	-	-	-	20	25	30	38	41
0.34	16 x 4	10 x 6		**cfm**	100	135	170	205	240	270	340	410
	12 x 5			**NC**	-	-	-	20	26	30	38	41
0.39	18 x 4	12 x 6		**cfm**	115	155	195	235	275	310	390	470
	14 x 5	8 x 8		**NC**	-	-	-	21	26	31	39	42
0.46	20 x 4	14 x 6		**cfm**	138	184	230	276	322	368	460	506
	16 x 5	10 x 8		**NC**	-	-	15	21	27	32	39	43
0.52	24 x 4	16 x 6		**cfm**	156	208	260	312	364	416	520	572
	18 x 5			**NC**	-	-	16	22	27	32	40	43
0.62	8 x 4	18 x 6	10 x 10	**cfm**	180	240	300	360	420	480	600	660
	20 x 5	12 x 8		**NC**	-	-	16	23	28	33	40	44
0.69	30 x 4	20 x 6	12 x 10	**cfm**	207	276	345	414	483	552	690	759
	24 x 5	14 x 8		**NC**	-	-	17	23	29	33	41	44
0.81	36 x 4	22 x 6	14 x 10	**cfm**	243	324	405	486	567	648	810	891
	28 x 5	16 x 8		**NC**	-	-	17	24	29	34	42	45
0.91	40 x 4	26 x 6	16 x 10	**cfm**	273	364	455	546	637	728	910	1001
	32 x 5	18 x 8	12 x 12	**NC**	-	-	18	24	30	34	42	45
1.07	42 x 4	30 x 6	18 x 10	**cfm**	321	428	535	642	749	856	1070	1177
	36 x 5	22 x 8	14 x 12	**NC**	-	-	19	25	30	35	43	46
1.18	34 x 6	20 x 10	14 x 14	**cfm**	354	472	590	708	826	944	1180	1298
	24 x 8	16 x 12		**NC**	-	-	19	25	31	35	43	47
1.34	38 x 6	22 x 10	16 x14	**cfm**	402	536	670	804	938	1072	1340	1474
	28 x 8	18 x 12		**NC**	-	-	19	26	31	36	44	47
1.60	44 x 6	26 x 10	18 x 14	**cfm**	480	640	800	960	1120	1280	1600	1760
	32 x 8	22 x 12	16 x 16	**NC**	-	-	20	27	32	37	44	48
1.80	50 x 6	30 x 10	20 x 14	**cfm**	540	720	900	1080	1260	1440	1800	1980
	36 x 8	24 x 12	18 x 16	**NC**	-	-	21	27	32	37	45	48
2.08	58 x 6	34 x 10	24 x 14	**cfm**	624	832	1040	1248	1456	1664	2080	2288
	42 x 8	28 x 12	20 x 16	**NC**	-	-	21	28	33	38	45	49
2.45	50 x 8	32 x 12	24 x 16	**cfm**	735	980	1225	1470	1715	1960	2450	2695
	38 x 10	28 x 14	20 x 18	**NC**	-	-	22	28	34	38	46	49
2.78	56 x 8	36 x 12	26 x 16	**cfm**	834	1112	1390	1668	1946	2224	2780	3058
	44 x 10	30 x 14	24 x 18	**NC**	-	15	22	29	34	39	47	50
3.11	48 x 10	34 x 14	26 x 18	**cfm**	933	1244	1555	1866	2177	2488	3110	3421
	40 x 12	30 x 16	24 x 20	**NC**	-	15	23	29	35	39	47	50
3.61	56 x 10	40 x 14	30 x 18	**cfm**	1083	1444	1805	2166	2527	2888	3610	3971
	48 x 12	34 x 16	28 x 20	**NC**	-	16	24	30	35	40	48	51
4.29	56 x 12	40 x 16	32 x 20	**cfm**	1287	1716	2145	2574	3003	3432	4290	4719
	48 x 14	36 x 18	30 x 22	**NC**	-	16	24	31	36	41	48	52
4.65	60 x 12	44 x 16	36 x 20	**cfm**	1395	1860	2325	2790	3255	3720	4650	5115
	50 x 14	40 x 18	32 x 22	**NC**	-	17	25	31	36	41	49	52
5.58	60 x 14	48 x 18	38 x 22	**cfm**	1674	2232	2790	3348	3906	4464	5580	6138
	54 x 16	42 x 20	36 x 24	**NC**	-	17	25	32	37	42	50	53
6.25	72 x 14	52 x 18	40 x 24	**cfm**	1875	2500	3125	3750	4375	5000	6250	6875
	60 x 16	48 x 20	32 x 30	**NC**	-	18	26	32	37	42	50	53

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Performance data is for a grille complete with opposed blade damper in the full open position.
6. Blanks (-) indicate an NC level below 15.
7. Correction factors to be applied to table for no damper: loss - multiply by 0.82, NC - subtract 12.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — Models 530, 630, 730 / 530FF, 630FF, 730FF
45° Deflection

Core Area Sq. ft	Nominal Size			Core Velocity / Velocity Pressure / Negative s.p.	200 .002 .011	300 .006 .025	400 .010 .044	500 .016 .069	600 .022 .100	700 .031 .136	800 .040 .177	900 .050 .224	1000 .062 .277	1100 .075 .335
							NC 20			30				
0.15	7 x 4			**cfm**	30	45	60	75	90	105	120	135	150	165
	6 x 5			**NC**	-	-	-	19	24	28	32	35	38	40
0.18	8 x 4	6 x 6		**cfm**	36	54	72	90	108	126	144	162	180	198
	7 x 5			**NC**	-	-	-	19	24	28	32	35	38	41
0.22	10 x 4	7 x 6		**cfm**	44	66	88	110	132	154	176	198	220	242
	8 x 5			**NC**	-	-	-	20	25	29	33	36	39	41
0.26	12 x 4	8 x 6		**cfm**	52	78	104	130	156	182	208	234	260	286
	10 x 5			**NC**	-	-	-	20	25	29	33	36	39	42
0.30	14 x 4			**cfm**	60	90	120	150	180	210	240	270	300	330
				NC	-	-	15	21	26	30	33	37	40	42
0.34	16 x 4	10 x 6		**cfm**	68	102	136	170	204	238	272	306	340	374
	12 x 5			**NC**	-	-	15	21	26	30	34	37	40	43
0.39	18 x 4	12 x 6		**cfm**	78	117	156	195	234	273	312	351	390	429
	14 x 5	8 x 8		**NC**	-	-	15	21	26	31	34	37	40	43
0.46	20 x 4	14 x 6		**cfm**	92	138	184	230	276	322	368	414	460	506
	16 x 5	10 x 8		**NC**	-	-	16	22	27	31	35	38	41	43
0.52	24 x 4	16 x 6		**cfm**	104	156	208	260	312	364	416	468	520	572
	18 x 5			**NC**	-	-	16	22	27	31	35	38	41	44
0.60	28 x 4	18 x 6	10 x 10	**cfm**	120	180	240	300	360	420	480	540	600	660
	20 x 5	12 x 8		**NC**	-	-	16	23	28	32	35	39	42	44
0.69	30 x 4	20 x 6	12 x 10	**cfm**	138	207	276	345	414	483	552	621	690	759
	24 x 5	14 x 8		**NC**	-	-	17	23	28	32	36	39	42	45
0.81	36 x 4	22 x 6	14 x 10	**cfm**	162	243	324	405	486	567	648	729	810	891
	28 x 5	16 x 8		**NC**	-	-	17	23	28	33	36	40	42	45
0.91	40 x 4	26 x 6	16 x 10	**cfm**	182	273	364	455	546	637	728	819	910	1001
	32 x 5	18 x 8	12 x 12	**NC**	-	-	18	24	29	33	37	40	43	45
1.07	42 x 4	30 x 6	18 x 10	**cfm**	214	321	428	535	642	749	856	963	1070	1177
	36 x 5	22 x 8	14 x 12	**NC**	-	-	18	24	29	33	37	40	43	46
1.18	34 x 6	20 x 10	14 x 14	**cfm**	236	354	472	590	708	826	944	1062	1180	1298
	24 x 8	16 x 12		**NC**	-	-	18	25	29	34	37	41	43	46
1.34	38 x 6	22 x 10	16 x 14	**cfm**	268	402	536	670	804	938	1072	1206	1340	1474
	28 x 8	18 x 12		**NC**	-	-	19	25	30	34	38	41	44	46
1.60	44 x 6	26 x 10	18 x 14	**cfm**	320	480	640	800	960	1120	1280	1440	1600	1760
	32 x 8	22 x 12	16 x 16	**NC**	-	-	19	25	30	35	38	41	44	47
1.80	50 x 6	30 x 10	20 x 14	**cfm**	360	540	720	900	1080	1260	1440	1620	1800	1980
	36 x 8	24 x 12	18 x 16	**NC**	-	-	20	26	31	35	39	42	45	47
2.08	58 x 6	34 x 10	24 x 14	**cfm**	416	624	832	1040	1248	1456	1664	1872	2080	2288
	42 x 8	28 x 12	20 x 16	**NC**	-	-	20	26	31	35	39	42	45	48
2.45	50 x 8	32 x 12	24 x 16	**cfm**	490	735	980	1225	1470	1715	1960	2205	2450	2695
	38 x 10	28 x 14	20 x 18	**NC**	-	-	20	27	32	36	39	43	46	48
2.78	56 x 8	36 x 12	26 x 16	**cfm**	556	834	1112	1390	1668	1946	2224	2502	2780	3058
	44 x 10	30 x 14	24 x 18	**NC**	-	-	21	27	32	36	40	43	46	48
3.11	48 x 10	34 x 14	26 x 18	**cfm**	622	933	1244	1555	1866	2177	2488	2799	3110	3421
	40 x 12	30 x 16	24 x 20	**NC**	-	-	21	27	32	36	40	43	46	49
3.61	56 x 10	40 x 14	30 x 18	**cfm**	722	1083	1444	1805	2166	2527	2888	3249	3610	3971
	48 x 12	34 x 16	28 x 20	**NC**	-	-	22	28	33	37	41	44	47	49
4.29	56 x 12	40 x 16	32 x 20	**cfm**	858	1287	1716	2145	2574	3003	3432	3861	4290	4719
	48 x 14	36 x 18	30 x 22	**NC**	-	-	22	28	33	37	41	44	47	50
4.65	60 x 12	44 x 16	36 x 20	**cfm**	930	1395	1860	2325	2790	3255	3720	4185	4650	5115
	50 x 14	40 x 18	32 x 22	**NC**	-	-	22	28	33	38	41	44	47	50
5.58	60 x 14	48 x 18	38 x 22	**cfm**	1116	1674	2232	2790	3348	3906	4464	5022	5580	6138
	54 x 16	42 x 20	36 x 24	**NC**	-	15	23	29	34	38	42	45	48	50
6.25	72 x 14	52 x 18	40 x 24	**cfm**	1250	1875	2500	3125	3750	4375	5000	5625	6250	6875
	60 x 16	48 x 20	32 x 30	**NC**	-	15	23	29	34	38	42	45	48	51
							NC 20	30		40			50	

NC 40

NC 50

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Performance data is for grille complete with opposed blade damper in the full open position.
5. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
6. Blanks (—) indicate an NC level below 15.
7. Correction factors to be applied to table for no damper: pressure loss - multiply by 0.91, NC - subtract 5.
8. Does not include pressure drop on FF models.
9. Does not include effects of ceiling radiation damper (530-FR, 530 FF-FR)

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Louvered Face Return
500 / 600 / 700 Series
500FF / 600FF / 700FF Series
Performance Data — Models 535, 635, 735 / 535FF, 635FF, 735FF

Core Area Sq. ft	Nominal Size			Core Velocity / Velocity Pressure / Negative s.p.	200 .002 .015	300 .006 .035	400 .010 .062	500 .016 .097	600 .022 .139	700 .031 .190	800 .040 .248	900 .050 .314	1000 .062 .387	1100 .075 .468
							NC 20			30				40
0.15	7 x 4			**cfm**	30	45	60	75	90	105	120	135	150	165
	6 x 5			**NC**	—	—	—	19	24	28	32	36	39	41
0.18	8 x 4	6 x 6		**cfm**	36	54	72	90	108	126	144	162	180	198
	7 x 5			**NC**	—	—	—	19	25	29	33	36	39	42
0.22	10 x 4	7 x 6		**cfm**	44	66	88	110	132	154	176	198	220	242
	8 x 5			**NC**	—	—	—	20	25	30	34	37	40	43
0.26	12 x 4	8 x 6		**cfm**	52	78	104	130	156	182	208	234	260	286
	10 x 5			**NC**	—	—	—	21	26	31	34	38	41	43
0.30	14 x 4			**cfm**	60	90	120	150	180	210	240	270	300	330
				NC	—	—	15	21	27	31	35	38	41	44
0.34	16 x 4	10 x 6		**cfm**	68	102	136	170	204	238	272	306	340	374
	12 x 5			**NC**	—	—	16	22	27	32	35	39	42	45
0.39	18 x 4	12 x 6		**cfm**	78	117	156	195	234	273	312	351	390	429
	14 x 5	8 x 8		**NC**	—	—	16	22	28	32	36	39	42	45
0.46	20 x 4	14 x 6		**cfm**	92	138	184	230	276	322	368	414	460	506
	16 x 5	10 x 8		**NC**	—	—	17	23	28	33	37	40	43	46
0.52	24 x 4	16 x 6		**cfm**	104	156	208	260	312	364	416	468	520	572
	18 x 5			**NC**	—	—	17	24	29	33	37	40	43	46
0.60	28 x 4	18 x 6	10 x 10	**cfm**	120	180	240	300	360	420	480	540	600	660
	20 x 5	12 x 8		**NC**	—	—	18	24	29	34	38	41	44	47
0.69	30 x 4	20 x 6	12 x 10	**cfm**	138	207	276	345	414	483	552	621	690	759
	24 x 5	14 x 8		**NC**	—	—	18	25	30	34	38	42	45	47
0.81	36 x 4	22 x 6	14 x 10	**cfm**	162	243	324	405	486	567	648	729	810	891
	28 x 5	16 x 8		**NC**	—	—	19	25	31	35	39	42	45	48
0.91	40 x 4	26 x 6	16 x 10	**cfm**	182	273	364	455	546	637	728	819	910	1001
	30 x 5	18 x 8	12 x 12	**NC**	—	—	19	26	31	35	39	43	46	48
1.07	42 x 4	30 x 6	18 x 10	**cfm**	214	321	428	535	642	749	856	963	1070	1177
	36 x 5	22 x 8	14 x 12	**NC**	—	—	20	26	32	36	40	43	46	49
1.18	34 x 6	20 x 10	14 x 14	**cfm**	236	354	472	590	708	826	944	1062	1180	1298
	24 x 8	16 x 12		**NC**	—	—	20	27	32	36	40	44	47	49
1.34	38 x 6	22 x 10	16 x 14	**cfm**	268	402	536	670	804	938	1072	1206	1340	1474
	28 x 8	18 x 12		**NC**	—	—	21	27	33	37	41	44	47	50
1.60	44 x 6	26 x 10	18 x 14	**cfm**	320	480	640	800	960	1120	1280	1440	1600	1760
	32 x 8	22 x 12	16 x 16	**NC**	—	—	22	28	33	38	41	45	48	51
1.80	50 x 6	30 x 10	20 x 14	**cfm**	360	540	720	900	1080	1260	1440	1620	1800	1980
	36 x 8	24 x 12	18 x 16	**NC**	—	—	22	28	34	38	42	45	48	51
2.08	58 x 6	34 x 10	24 x 14	**cfm**	416	624	832	1040	1248	1456	1664	1872	2080	2288
	42 x 8	28 x 12	20 x 16	**NC**	—	—	23	29	34	39	42	46	49	52
2.45	50 x 8	32 x 12	24 x 16	**cfm**	490	735	980	1225	1470	1715	1960	2205	2450	2695
	38 x 10	28 x 14	20 x 18	**NC**	—	15	23	30	35	39	43	46	50	52
2.78	56 x 8	36 x 12	26 x 16	**cfm**	556	834	1112	1390	1668	1946	2224	2502	2780	3058
	44 x 10	30 x 14	24 x 18	**NC**	—	15	24	30	35	40	44	47	50	53
3.11	48 x 10	34 x 14	26 x 18	**cfm**	622	933	1244	1555	1866	2177	2488	2799	3110	3421
	40 x 12	30 x 16	24 x 20	**NC**	—	16	24	31	36	40	44	47	50	53
3.61	56 x 10	40 x 14	30 x 18	**cfm**	722	1083	1444	1805	2166	2527	2888	3249	3610	3971
	48 x 12	34 x 16	28 x 20	**NC**	—	17	25	31	36	41	45	48	51	54
4.29	56 x 12	40 x 16	32 x 20	**cfm**	858	1287	1716	2145	2574	3003	3432	3861	4290	4719
	48 x 14	36 x 18	30 x 22	**NC**	—	17	25	32	37	41	45	49	52	54
4.65	60 x 12	44 x 16	36 x 20	**cfm**	930	1395	1860	2325	2790	3255	3720	4185	4650	5115
	50 x 14	40 x 18	32 x 22	**NC**	—	17	26	32	37	42	46	49	52	55
5.58	60 x 14	48 x 18	38 x 22	**cfm**	1116	1674	2232	2790	3348	3906	4464	5022	5580	6138
	54 x 16	42 x 20	36 x 24	**NC**	—	18	26	33	38	42	46	50	53	55
6.25	72 x 14	52 x 18	40 x 24	**cfm**	1250	1875	2500	3125	3750	4375	5000	5625	6250	6875
	60 x 16	48 x 20	32 x 30	**NC**	—	19	27	33	39	43	47	50	53	56
						NC 20	30		40			50		

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Performance data is for grille complete with opposed blade damper in the full open position.
5. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
6. Blanks (—) indicate an NC level below 15.
7. Correction factors to be applied to table for no damper: pressure loss - multiply by 0.81, NC - subtract 2.
8. Does not include pressure drop on FF models.
9. Does not include effects of ceiling radiation damper (535-FR, 535FF-FR)

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Louvered Supply
540 / 640 Series
c/w Multi-shutter Damper

540 / 540S – Steel
640 / 640S – Aluminum

Single Deflection Models

Steel Construction

Grilles c/w Multi Louvers	**540**
Grilles c/w Multi Split Louvers	**540S**

Aluminum Construction

Grilles c/w Multi Louvers	**640**
Grilles c/w Multi Split Louvers	**640S**

Price 540/640 Series is a light duty single deflection grille, ideally suited for apartment, condominium or residential applications.The front blades are adjustable for pattern direction control, while the multi-louver rear blades provide volume control.

Mounting / Finish Options

Border Style

Surface Mount 1 1/4 in. [32] Flat standard	**F**

Blade Orientation

Front blades parallel to short dimension	**S**

Fastening

Countersunk screwholes c/w oval-head screws (standard)	**A**
Lanced Frame (optional)	**G**

Finish

White Powder Coat	**B12**

For optional and special finishes see color matrix.

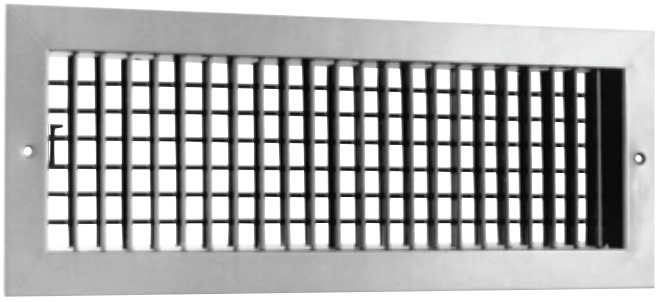
Available Size

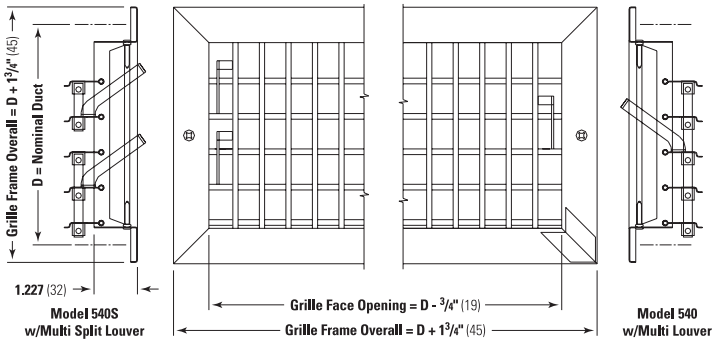
Minimum	Maximum*	Model
6" x 4" [152 x 102]	**24" x 14"** [610 x 356]	**540**
6" x 5" [152 x 127]	**24" x 14"** [610 x 356]	**540S**
6" x 4" [152 x 102]	**18" x 14"** [450 x 356]	**640**
6" x 5" [152 x 127]	**18" x 14"** [450 x 356]	**640S**

* One-piece

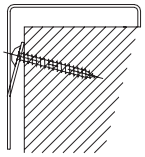
- Grille sizes increase in 1 in. [25] increments (fractional sizes are not available).
- Maximum blade length is 18 in. [457].

Single Deflection 3/4 in. [19] Blade Spacing

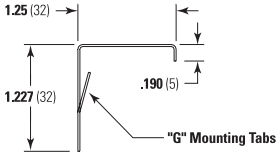




Optional "G" Fastening



Border



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (540 or 540S).
3] Select Border Style according to installation requirements (F is standard).
4] Select Fastening Type (A is standard).
5] Select Finish.

Example: 6 in. x 12 in. / 540 / F / S / A / B12

Application Recommendations:
Surface Mount – A Fastening.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — Models 540, 540S / 640, 640S

Size			Core Velocity fpm	300	400	500	600	700	800	1000	1200	1400	1600	1800
			Velocity Pressure	.006	.010	.016	.022	.030	.040	.062	.090	.122	.159	.202
	Total Pressure		0°	.009	.016	.026	.037	.050	.065	.102	.147	.200	.262	.331
			22½°	.017	.030	.046	.067	.091	.119	.267	.267	.363	.475	.601
			45°	.031	.055	.086	.124	.169	.221	.497	.497	.676	.883	1.118
Ac = **0.15**		cfm		45	60	75	90	105	120	150	180	210	240	270
7 x 5		NC		—	—	—	—	—	—	—	15	19	23	27
6 x 5			0°	4-6-12	5-8-14	7-10-16	8-12-17	9-13-19	11-14-20	13-16-23	14-17-25	15-19-27	16-20-28	17-21-30
	Throw	ft	22½°	3-5-10	4-6-11	5-8-13	6-10-14	7-11-15	9-11-16	10-13-18	11-14-20	12-15-21	13-16-23	14-17-24
			45°	2-3-6	3-4-7	3-5-8	4-6-9	5-7-9	5-7-10	7-8-11	7-9-12	8-9-13	8-10-14	9-11-15
Ac = **0.18**		cfm		55	70	90	110	125	145	180	215	250	290	325
8 x 4		NC		—	—	—	—	—	—	—	17	22	25	29
7 x 5			0°	4-7-13	6-9-16	7-11-17	9-13-19	10-15-21	12-16-22	14-17-25	16-19-27	17-21-29	18-22-31	19-23-33
6 x 6	Throw	ft	22½°	3-5-11	5-7-12	6-9-14	7-11-15	8-12-17	9-12-18	11-14-20	12-15-22	13-17-23	14-18-25	15-19-26
			45°	2-3-7	3-4-8	4-5-9	4-7-10	5-7-10	6-8-11	7-9-12	8-10-14	8-10-15	9-11-16	10-12-17
Ac = **0.22**		cfm		65	90	110	130	155	175	220	265	310	350	395
10 x 4		NC		—	—	—	—	—	—	—	19	24	28	31
8 x 5			0°	4-7-15	6-10-17	8-12-19	10-15-21	11-16-23	13-17-24	16-19-27	17-21-30	19-23-32	20-24-34	21-26-37
7 x 6	Throw	ft	22½°	4-6-12	5-8-14	6-10-15	8-12-17	9-13-18	10-14-20	13-15-22	14-17-24	15-18-26	16-20-28	17-21-29
			45°	2-4-7	3-5-9	4-6-10	5-7-11	6-8-11	6-9-12	8-10-14	9-11-15	9-11-16	10-12-17	11-13-18
Ac = **0.26**		cfm		80	105	130	155	180	210	260	310	365	415	470
12 x 4		NC		—	—	—	—	—	—	16	21	26	30	33
10 x 5			0°	5-8-16	7-11-19	9-13-21	11-16-23	12-18-25	14-19-27	17-21-30	19-23-32	20-25-35	22-27-37	23-28-40
8 x 6	Throw	ft	22½°	4-6-13	6-8-15	7-11-17	8-13-18	10-14-20	11-15-21	14-17-24	15-18-26	16-20-28	17-21-30	18-22-32
			45°	2-4-8	4-5-9	4-7-10	5-8-11	6-9-12	7-9-13	9-10-15	9-11-16	10-12-18	11-13-19	11-14-20
Ac = **0.3**		cfm		90	120	150	180	210	240	300	360	420	480	540
14 x 4		NC		—	—	—	—	—	—	18	23	27	31	35
			0°	5-8-17	8-11-20	9-14-23	11-17-25	13-19-27	15-20-28	18-23-32	20-25-35	22-27-38	23-28-40	25-30-43
	Throw	ft	22½°	4-7-14	6-9-16	8-11-18	9-14-20	11-15-21	12-16-23	15-18-25	16-20-28	17-21-30	19-23-32	20-24-34
			45°	3-4-8	4-6-10	5-7-11	6-8-12	7-9-13	8-10-14	9-11-16	10-12-17	11-13-19	12-14-20	12-15-21
Ac = **0.34**		cfm		100	135	170	205	240	270	340	410	475	545	610
16 x 4		NC		—	—	—	—	—	—	19	24	29	33	36
12 x 5			0°	6-9-18	8-12-21	10-15-24	12-18-26	14-20-28	16-21-30	20-24-34	21-26-37	23-28-40	25-30-43	26-32-45
10 x 6	Throw	ft	22½°	4-7-14	6-10-17	8-12-19	10-14-21	11-16-23	13-17-24	16-19-27	17-21-30	19-23-32	20-24-34	21-26-36
			45°	3-5-9	4-6-11	5-8-12	6-9-13	7-10-14	8-11-15	10-12-17	11-13-19	12-14-20	12-15-21	13-16-23
Ac = **0.39**		cfm		115	155	195	235	275	310	390	470	545	625	700
18 x 4 8 x 8		NC		—	—	—	—	—	—	21	26	30	34	38
14 x 5			0°	6-10-19	9-13-23	11-16-26	13-19-28	15-21-30	17-23-32	21-26-36	23-28-40	25-30-43	27-32-46	28-34-49
12 x 6	Throw	ft	22½°	5-8-15	7-10-18	9-13-21	10-15-22	12-17-24	14-18-26	17-21-29	18-22-32	20-24-34	21-26-37	22-28-39
			45°	3-5-10	4-6-11	5-8-13	6-10-14	8-11-15	9-11-16	10-13-18	11-14-20	12-15-21	13-16-23	14-17-24

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The NC values are based on a room absorption of 10dB re 10^{-12} watts @ 0° deflection and one diffuser. Refer to blade position corrections table on page D30 for 22 ½° and 45° deflection.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 ½°–45°
   The listed deflection settings refer to horizontal deflection.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — Models 540, 540S / 640, 640S

Size			Core Velocity fpm	300	400	500	600	700	800	1000	1200	1400	1600	1800
			Velocity Pressure	.006	.010	.016	.022	.030	.040	.062	.090	.122	.159	.202
	Total		0°	.009	.016	.026	.037	.050	.065	.102	.147	.200	.262	.331
	Pressure		22½°	.017	.030	.046	.067	.091	.119	.267	.267	.363	.475	.601
			45°	.031	.055	.086	.124	.169	.221	.497	.497	.676	.883	1.118
Ac = **0.46**		cfm		140	185	230	275	320	370	460	550	645	735	830
20 x 4 10 x 8		NC		—	—	—	—	—	16	23	28	32	36	40
14 x 6			0°	6-10-21	9-14-25	12-17-28	14-21-31	16-23-33	19-25-35	23-28-39	25-31-43	27-33-47	29-35-50	31-37-53
16 x 5	Throw	ft	22½°	5-8-17	7-11-20	9-14-22	11-17-24	13-19-26	15-20-28	18-22-32	20-24-35	22-26-37	23-28-40	24-30-42
			45°	3-5-10	5-7-12	6-9-14	7-10-15	8-12-16	9-12-18	11-14-20	12-15-22	13-16-23	14-18-25	15-19-26
Ac = **0.52**		cfm		155	210	260	310	365	415	520	625	730	830	935
24 x 4		NC		—	—	—	—	—	17	24	29	34	38	41
16 x 6			0°	7-11-22	10-15-27	12-19-30	15-22-32	17-25-35	20-27-37	24-30-42	27-32-46	29-35-50	31-37-53	32-40-56
18 x 5	Throw	ft	22½°	5-9-18	8-12-21	10-15-24	12-18-26	14-20-28	16-21-30	19-24-34	21-26-37	23-28-40	24-30-42	26-32-45
			45°	3-6-11	5-7-13	6-9-15	7-11-16	9-12-18	10-13-19	12-15-21	13-16-23	14-18-25	15-19-27	16-20-28
Ac = **0.6**		cfm		180	240	300	360	420	480	600	720	840	960	1080
20 x 5		NC		—	—	—	—	15	19	26	31	35	39	43
18 x 6 12 x 8			0°	7-12-24	11-16-28	13-20-32	16-24-35	19-27-38	21-28-40	26-32-45	28-35-49	31-38-53	33-40-57	35-43-60
10 x 10	Throw	ft	22½°	6-10-19	9-13-23	11-16-25	13-19-28	15-21-30	17-23-32	21-25-36	23-28-39	25-30-43	26-32-46	28-34-48
			45°	4-6-12	5-8-14	7-10-16	8-12-17	9-13-19	11-14-20	13-16-23	14-17-25	15-19-27	16-20-28	17-21-30
Ac = **0.69**		cfm		205	275	345	415	485	550	690	830	965	1105	1240
24 x 5		NC		—	—	—	—	17	21	27	32	37	41	44
20 x 6 14 x 8			0°	8-13-26	11-17-31	14-21-34	17-26-37	20-29-40	23-31-43	28-34-48	31-37-53	33-40-57	35-43-61	37-46-65
12 x 10	Throw	ft	22½°	6-10-21	9-14-24	11-17-27	14-21-30	16-23-32	18-24-35	22-27-39	24-30-42	26-32-46	28-35-49	30-37-52
			45°	4-6-13	6-9-15	7-11-17	9-13-19	10-14-20	11-15-22	14-17-24	15-19-26	16-20-29	18-22-31	19-23-32
Ac = **0.81**		cfm		245	325	405	485	565	650	810	970	1135	1295	1460
22 x 6 16 x 8		NC		—	—	—	—	19	23	29	34	39	43	46
14 x 10			0°	9-14-28	12-19-33	15-23-37	19-28-41	22-31-44	25-33-47	30-37-52	33-41-57	36-44-62	38-47-66	41-50-70
	Throw	ft	22½°	7-11-22	10-15-26	12-19-30	15-22-32	17-25-35	20-26-37	24-30-42	26-32-46	29-35-50	31-37-53	32-40-56
			45°	4-7-14	6-9-17	8-12-18	9-14-20	11-15-22	12-17-23	15-18-26	17-20-29	18-22-31	19-23-33	20-25-35
Ac = **0.9**		cfm		270	360	450	540	630	720	900	1080	1260	1440	1620
18 x 8		NC		—	—	—	15	20	24	30	36	40	44	47
16 x 10 12 x 12			0°	9-15-29	13-20-35	16-24-39	20-29-43	23-33-46	26-35-49	32-39-55	35-43-60	38-46-65	40-49-70	43-52-74
	Throw	ft	22½°	7-12-23	10-16-28	13-20-31	16-23-34	18-26-37	21-28-39	25-31-44	28-34-48	30-37-52	32-39-56	34-42-59
			45°	5-7-15	7-10-17	8-12-20	10-15-21	11-16-23	13-17-25	16-20-28	17-21-30	19-23-33	20-25-35	21-26-37
Ac = **1.07**		cfm		320	430	535	640	750	855	1070	1285	1500	1710	1930
22 x 8		NC		—	—	—	17	22	26	32	37	42	46	49
18 x 10 14 x 12			0°	10-16-32	14-21-38	18-27-43	21-32-47	25-36-50	28-38-54	35-43-60	38-47-66	41-50-71	44-54-76	47-57-81
	Throw	ft	22½°	8-13-26	11-17-30	14-21-34	17-26-37	20-28-40	23-30-43	28-34-48	30-37-53	33-40-57	35-43-61	37-46-65
			45°	5-8-16	7-11-19	9-13-21	11-16-23	12-18-25	14-19-27	17-21-30	19-23-33	21-25-36	22-27-38	23-29-40

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The NC values are based on a room absorption of 10dB re 10^{-12} watts @ 0° deflection and one diffuser. Refer to blade position corrections table on page D30 for 22 ½° and 45° deflection.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 ½°–45°
   The listed deflection settings refer to horizontal deflection.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — Models 540, 540S / 640, 640S

Size			Core Velocity fpm	300	400	500	600	700	800	1000	1200	1400	1600	1800
			Velocity Pressure	.006	.010	.016	.022	.030	.040	.062	.090	.122	.159	.202
	Total Pressure		0°	.009	.016	.026	.037	.050	.065	.102	.147	.200	.262	.331
			22½°	.017	.030	.046	.067	.091	.119	.267	.267	.363	.475	.601
			45°	.031	.055	.086	.124	.169	.221	.497	.497	.676	.883	1.118
Ac = **1.18** 24 x 8 20 x 10 16 x 12 14 x 14		cfm		355	470	590	710	825	945	1180	1415	1650	1890	2125
		NC		—	—	—	18	23	27	33	39	43	47	50
	Throw ft		0°	10-17-34	15-22-40	19-28-45	22-34-49	26-37-53	30-40-56	36-45-63	40-49-69	43-53-75	46-56-80	49-60-85
			22½°	8-13-27	12-18-32	15-22-36	18-27-39	21-30-42	24-32-45	29-36-51	32-39-55	35-42-60	37-45-64	39-48-68
			45°	5-8-17	7-11-20	9-14-22	11-17-24	13-19-26	15-20-28	18-22-32	20-24-35	22-26-37	23-28-40	24-30-42
Ac = **1.34** 22 x 10 18 x 12 16 x 14		cfm		400	535	670	805	940	1070	1340	1610	1875	2145	2410
		NC		-	-	15	20	24	28	35	40	45	48	52
	Throw ft		0°	11-18-36	16-24-43	20-30-48	24-36-52	28-40-56	32-43-60	39-48-67	43-52-74	46-56-80	49-60-85	52-64-90
			22½°	9-14-29	13-19-34	16-24-38	19-29-42	22-32-45	25-34-48	31-38-54	34-42-59	37-45-64	39-48-68	42-51-72
			45°	6-9-18	8-12-21	10-15-24	12-18-26	14-20-28	16-21-30	19-24-34	21-26-37	23-28-40	25-30-43	26-32-45
Ac = **1.6** 18 x 14 22 x 12		cfm		480	640	800	960	1120	1280	1600	1920	2240	2560	2880
		NC		-	-	17	22	26	30	37	42	47	50	54
	Throw ft		0°	12-20-39	17-26-47	22-33-52	26-39-57	30-44-62	35-47-66	42-52-74	47-57-81	50-62-87	54-66-93	57-70-99
			22½°	10-16-31	14-21-37	17-26-42	21-31-46	24-35-49	28-37-53	34-42-59	37-46-64	40-49-70	43-53-74	46-56-79
			45°	6-10-20	9-13-23	11-16-26	13-20-28	15-22-31	17-23-33	21-26-37	23-28-40	25-31-44	27-33-47	28-35-49
Ac = **1.8** 20 x 14 24 x 12		cfm		540	720	900	1080	1260	1440	1800	2160	2520	2880	3240
		NC		-	-	18	23	28	32	38	43	48	52	55
	Throw ft		0°	13-21-42	18-28-49	23-35-55	28-42-60	32-46-65	37-49-70	45-55-78	49-60-85	53-65-92	57-70-99	60-74-105
			22½°	10-17-33	15-22-39	18-28-44	22-33-48	26-37-52	30-39-56	36-44-62	39-48-68	43-52-74	46-56-79	48-59-84
			45°	6-10-21	9-14-25	12-17-28	14-21-30	16-23-33	18-25-35	23-28-39	25-30-43	27-33-46	28-35-49	30-37-52
Ac = **2.08** 24 x 14		cfm		625	830	1040	1250	1455	1665	2080	2495	2910	3330	3745
		NC		-	-	20	25	29	33	40	45	50	53	57
	Throw ft		0°	14-22-45	20-30-53	25-37-59	30-45-65	35-50-70	40-53-75	48-59-84	53-65-92	57-70-99	61-75-106	65-80-112
			22½°	11-18-36	16-24-42	20-30-47	24-36-52	28-40-56	32-42-60	39-47-67	42-52-73	46-56-79	49-60-85	52-64-90
			45°	7-11-22	10-15-27	12-19-30	15-22-32	17-25-35	20-27-37	24-30-42	27-32-46	29-35-50	31-37-53	32-40-56

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The NC values are based on a room absorption of 10dB re 10^{-12} watts @ 0° deflection and one diffuser. Refer to blade position corrections table to the right for 22 ½° and 45° deflection.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 ½°–45°
   The listed deflection settings refer to horizontal deflection.

Corrections for various blade positons

Core Style	Defl'n	Add NC
540/540S/640/640S	0°	0
540/540S/640/640S	22.5°	+4
540/540S/640/640S	45°	+12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Spiral Duct Grille
SDG Series

Product Information

Model

Spiral Duct Register

Steel Construction	**SDG ST**
Aluminum Construction	**SDG AL**
Galvanized Steel	**SDG GV**

Price SDG Spiral Duct Grilles were specifically designed to be mounted on round or spiral ducts without the use of any transitions. Gaskets placed at each end of the grille allow it to blend seamlessly with the duct. An additional gasket placed around the inlet provides an air seal between the grille and the duct. The SDG series is available in steel (SDG ST), galvanized steel (SDG GV) or aluminum (SDG AL) construction. The grilles come in double deflection arrangement and feature precise, high quality roll-formed blades and formed frames. The galvanized steel model (SDG GV) can be installed unpainted; it is also an excellent choice for applications where the grille needs to be field painted to match duct finish.

Features

- Available in either steel (SDG ST), galvanized steel (SDG GV) or aluminum (SDG AL) construction.
- Double deflection core with individually adjustable air flow blades. The front blades are parallel to the short dimension.
- 3/4 in. blade spacing.
- Open cell foam gasket attached to the neck provides a tight seal around openings in the duct.
- Closed cell foam end gasket conforms to any duct diameter.
- Optional air scoop (AS) available.
- Optional steel opposed blade damper (VCS3).

Mounting / Finish Options

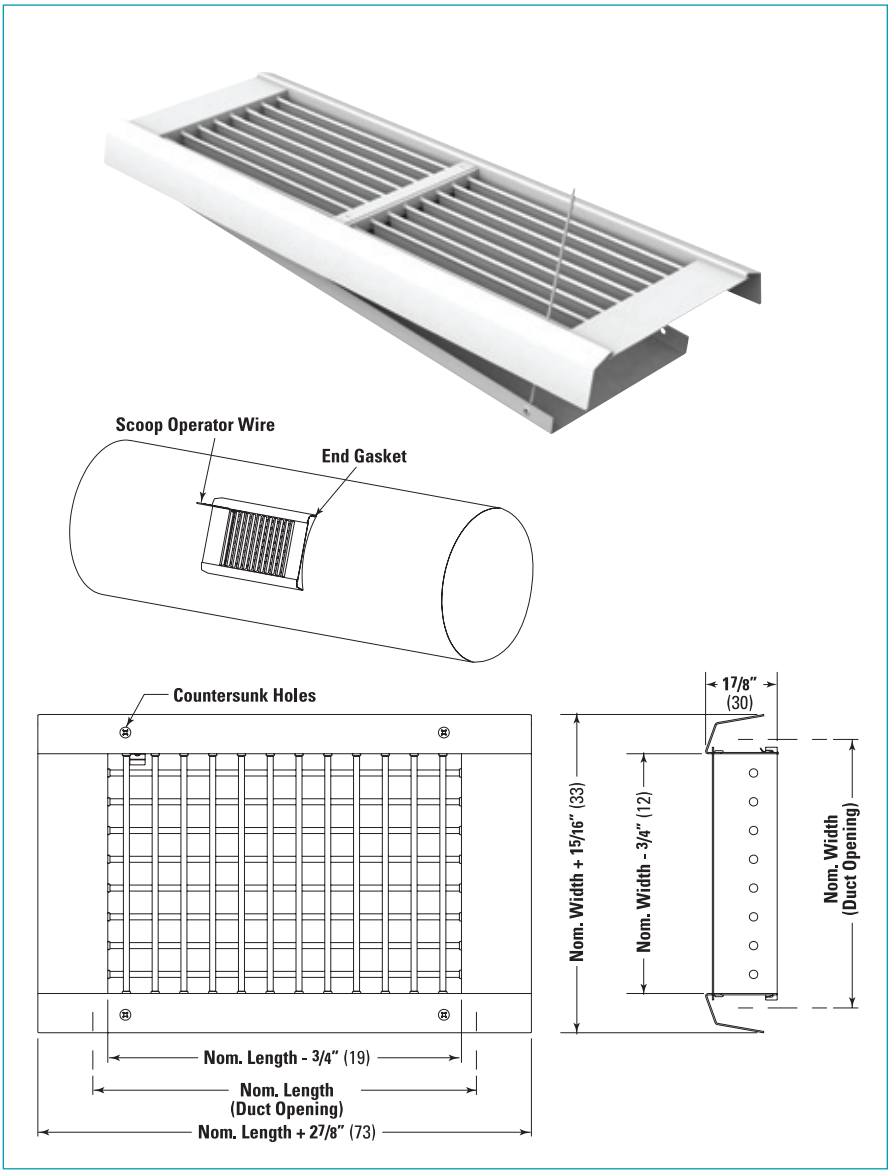
Fastening

Countersunk screw holes	**A**

Finish

White powder coat	**B12**

For optional and special finishes see color matrix.



Recommended SDG Size for Minimum Duct Diameter

Duct Size (in) Ø	Min. Nom. Width (in)	Max. Nom. Width (in)
8 in. - 13 in.	--	4 in.
14 in. - 21 in.	4 in.	6 in.
22 in. - 31 in.	4 in.	8 in.
32 in. - 41 in.	4 in.	10 in.
42 in. - Over	4 in.	12 in.

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Finish.

Example: 10 in. x 6 in. / SDG / GV

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

price®

Product Information

Model

Spiral Duct Grille
Extruded Aluminum Construction **SDGE**

Price SDGE Extruded Aluminum Duct Grille was designed to be mounted on a round or spiral duct without the use of transitions. It features extruded aluminum construction throughout and is available in single or double deflection configurations. The blades are individually adjustable, giving the customer virtually endless possibilities to direct supply air to meet space requirements. The face frame of the SDGE is curved to match the radius of the duct, allowing the grille to fit snugly around it.

The look of the grille can be further enhanced by selecting the clear anodized finish. The SDGE is also available in any Price standard paint finish, including custom matched colors. SDGE series grilles combine architectural appeal with excellent performance characteristics, making them a perfect choice for high profile applications.

Features

- Extruded Aluminum Construction.
- End frames match duct curvature.
- Double deflection core with individually adjustable air flow blades.
- 3/4 in. blade spacing.
- Clear anodized or paint finish.
- Optional air scoop (AS) available.
- Mounts directly to duct.
- Closed cell foam gasket attached to the border provides a tight seal around opening in the duct.
- Optional steel opposed blade damper (VCS3).

Mounting / Finish Options

Fastening

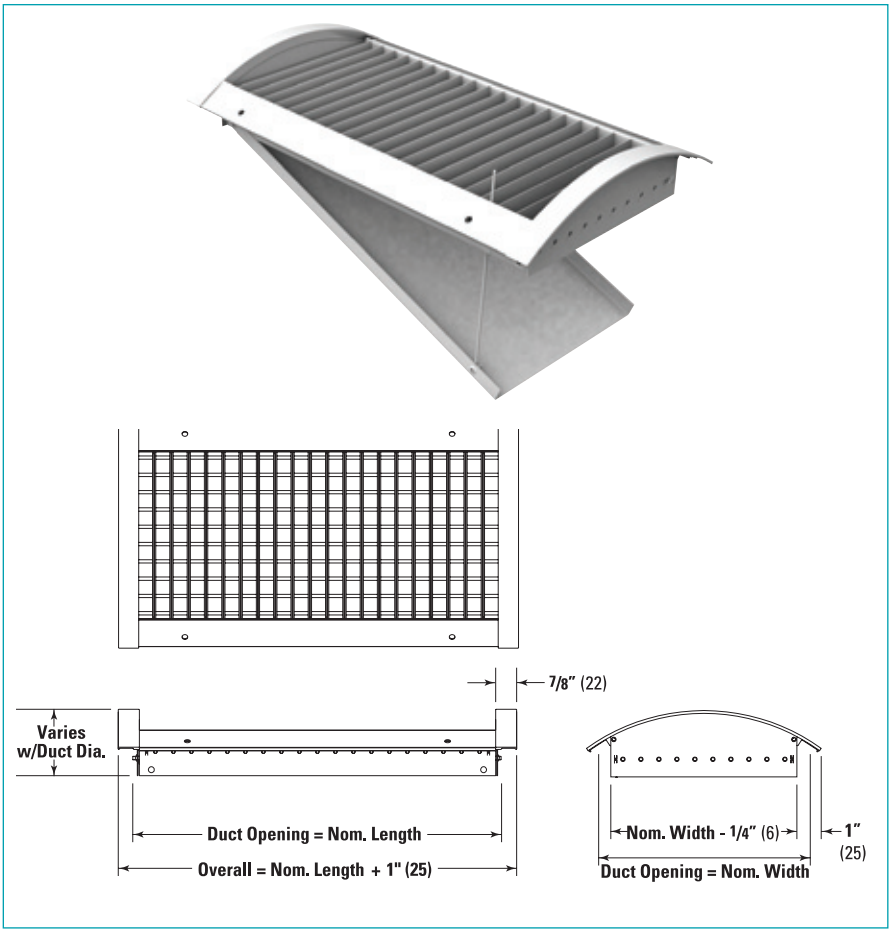
Countersunk screw holes **A**

Finish

Clear Anodized **CA**

White powder coat **B12**

For optional and special finishes see color matrix.



Duct Dia.	Nom. Width					
	3	4	6	8	10	12
6	x	x				
8	x	x	x			
10	x	x	x	x		
12	x	x	x	x	x	
14	x	x	x	x	x	x
16	x	x	x	x	x	x
18	x	x	x	x	x	x
20	x	x	x	x	x	x
22	x	x	x	x	x	x
24	x	x	x	x	x	x
26	x	x	x	x	x	x
28	x	x	x	x	x	x
30	x	x	x	x	x	x
32	x	x	x	x	x	x
36	x	x	x	x	x	x

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Finish.

Example: SDGE // I / 12 / 24 / 4 / DD / S // AS // A / B12
Application Recommendations:
A Fastening.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Core Area	Core Velocity fpm		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.022	.031	.040	.062	.090
	Total Pressure	0°	0.017	0.031	0.048	0.069	0.094	0.123	0.192	0.277
		22.5°	0.022	0.039	0.061	0.088	0.119	0.156	0.244	0.351
		45°	0.033	0.060	0.093	0.134	0.182	0.238	0.372	0.536
Ac = **0.22** ft² 10 x 4	cfm		66	88	110	132	154	176	220	264
	NC	0°	—	—	—	—	16	21	27	33
	Throw (ft)	0°	5-7-14	6-9-18	8-12-20	9-14-22	11-17-23	13-18-25	16-20-28	18-22-31
		22°	4-6-11	5-8-14	6-9-16	8-11-17	9-13-19	10-14-20	13-16-22	14-17-25
		45°	2-4-7	3-5-9	4-6-10	5-7-11	6-8-12	6-9-13	8-10-14	9-11-15
Ac = **0.26** ft² 12 x 4 10 x 5	cfm		78	104	130	156	182	208	260	312
	NC	0°	—	—	—	—	17	21	28	34
	Throw (ft)	0°	5-8-15	7-10-19	9-13-21	10-15-24	12-18-25	14-19-27	17-21-30	19-24-33
		22°	4-6-12	5-8-15	7-10-17	8-12-19	10-14-20	11-15-22	14-17-24	15-19-27
		45°	3-4-8	3-5-10	4-6-11	5-8-12	6-9-13	7-10-14	9-11-15	10-12-17
Ac = **0.30** ft² 14 x 4	cfm		90	120	150	180	210	240	300	360
	NC	0°	—	—	—	—	18	22	29	34
	Throw (ft)	0°	6-8-17	7-11-21	9-14-23	11-17-25	13-19-27	15-21-29	18-23-33	21-25-36
		22°	4-7-13	6-9-17	7-11-18	9-13-20	10-15-22	12-17-23	15-18-26	17-20-29
		45°	3-4-8	4-6-10	5-7-12	6-8-13	6-10-14	7-10-15	9-12-16	10-13-18
Ac = **0.34** ft² 16 x 4 12 x 5 10 x 6	cfm		102	136	170	204	238	272	340	408
	NC	0°	—	—	—	—	18	22	29	35
	Throw (ft)	0°	6-9-18	8-12-22	10-15-25	12-18-27	14-21-29	16-22-31	20-25-35	22-27-38
		22°	5-7-14	6-9-18	8-12-20	9-14-22	11-16-23	13-18-25	16-20-28	18-22-30
		45°	3-4-9	4-6-11	5-7-12	6-9-13	7-10-15	8-11-16	10-12-17	11-13-19
Ac = 0.39 ft² 18 x 4 14 x 5 12 x 6	cfm		117	156	195	234	273	312	390	468
	NC	0°	—	—	—	—	19	23	30	36
	Throw (ft)	0°	6-9-19	8-13-24	10-16-26	13-19-29	15-22-31	17-24-33	21-26-37	24-29-41
		22°	5-8-15	7-10-19	8-13-21	10-15-23	12-18-25	13-19-27	17-21-30	19-23-33
		45°	3-5-9	4-6-12	5-8-13	6-9-14	7-11-16	8-12-17	10-13-19	12-14-20
Ac = **0.46** ft² 20 x 4 16 x 5 14 x 6 10 x 8	cfm		138	184	230	276	322	368	460	552
	NC	0°	—	—	—	—	20	24	31	36
	Throw (ft)	0°	7-10-21	9-14-26	11-17-29	14-21-31	16-24-34	18-26-36	23-29-40	26-31-44
		22°	5-8-16	7-11-20	9-14-23	11-16-25	13-19-27	15-20-29	18-23-32	20-25-35
		45°	3-5-10	5-7-13	6-9-14	7-10-16	8-12-17	9-13-18	11-14-20	13-16-22
Ac = **0.52** ft² 24 x 4 18 x 5 16 x 6	cfm		156	208	260	312	364	416	520	624
	NC	0°	—	—	—	15	20	24	31	37
	Throw (ft)	0°	7-11-22	10-15-27	12-18-30	15-22-33	17-25-36	19-27-38	24-30-43	27-33-47
		22°	6-9-17	8-12-22	10-15-24	12-17-27	14-20-29	16-22-31	19-24-34	22-27-38
		45°	4-5-11	5-7-14	6-9-15	7-11-17	8-13-18	10-14-19	12-15-21	14-17-24
Ac = **0.60** ft² 24 x 4 20 x 5 18 x 6 12 x 8 10 x 10	cfm		180	240	300	360	420	480	600	720
	NC	0°	—	—	—	16	21	25	32	37
	Throw (ft)	0°	8-12-23	10-16-29	13-20-33	16-23-36	18-27-39	21-29-41	26-33-46	29-36-51
		22°	6-9-19	8-12-23	10-16-26	12-19-29	15-22-31	17-23-33	21-26-37	23-29-40
		45°	4-6-12	5-8-15	7-10-16	8-12-18	9-14-19	10-15-21	13-16-23	15-18-25

For Performance Notes,. see page D35.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Core Area			Core Velocity fpm	300	400	500	600	700	800	1000	1200
			Velocity Pressure	.006	.010	.016	.022	.031	.040	.062	.090
			Total Pressure 0°	0.017	0.031	0.048	0.069	0.094	0.123	0.192	0.277
			22.5°	0.022	0.039	0.061	0.088	0.119	0.156	0.244	0.351
			45°	0.033	0.060	0.093	0.134	0.182	0.238	0.372	0.536
Ac = **0.69** ft²			cfm	207	276	345	414	483	552	690	828
30 x 4			NC 0°	—	—	—	17	21	26	32	38
24 x 5	Throw (ft)		0°	8-13-25	11-17-31	14-21-35	17-25-38	20-29-41	22-31-44	28-35-50	31-38-54
20 x 6			22°	7-10-20	9-13-25	11-17-28	13-20-31	16-23-33	18-25-35	22-28-40	25-31-43
14 x 8			45°	4-6-13	6-8-16	7-10-18	8-13-19	10-15-21	11-16-22	14-18-25	16-19-27
12 x 10											
Ac = **0.81** ft²			cfm	243	324	405	486	567	648	810	972
36 x 4			NC 0°	—	—	—	17	22	26	33	39
28 x 5	Throw (ft)		0°	9-14-27	12-18-34	15-23-38	18-27-42	21-32-45	24-34-48	30-38-54	34-42-59
22 x 6			22°	7-11-22	10-15-27	12-18-30	15-22-33	17-25-36	19-27-38	24-30-43	27-33-47
16 x 8			45°	5-7-14	6-9-17	8-11-19	9-14-21	11-16-22	12-17-24	15-19-27	17-21-29
14 x 10											
Ac = **0.90** ft²			cfm	270	360	450	540	630	720	900	1,080
30 x 5			NC 0°	—	—	—	18	23	27	34	39
26 x 6	Throw (ft)		0°	10-14-29	13-19-36	16-24-40	19-29-44	22-33-47	25-36-51	32-40-57	36-44-62
18 x 8			22°	8-11-23	10-15-29	13-19-32	15-23-35	18-27-38	20-29-40	25-32-45	29-35-50
16 x 10			45°	5-7-14	6-10-18	8-12-20	10-14-22	11-17-24	13-18-25	16-20-28	18-22-31
12 x 12											
Ac = **1.07** ft²			cfm	321	428	535	642	749	856	1,070	1,284
36 x 5			NC 0°	—	—	—	19	23	28	34	40
30 x 6	Throw (ft)		0°	10-16-31	14-21-39	17-26-44	21-31-48	24-36-52	28-39-55	35-44-62	39-48-68
22 x 8			22°	8-13-25	11-17-31	14-21-35	17-25-38	19-29-41	22-31-44	28-35-49	31-38-54
18 x 10			45°	5-8-16	7-10-20	9-13-22	10-16-24	12-18-26	14-20-28	17-22-31	20-24-34
14 x 12											
Ac = **1.18** ft²			cfm	354	472	590	708	826	944	1,180	1,416
34 x 6			NC 0°	—	—	—	19	24	28	35	40
24 x 8	Throw (ft)		0°	11-16-33	15-22-41	18-27-46	22-33-50	26-38-54	29-41-58	36-46-65	41-50-71
20 x 10			22°	9-13-26	12-18-33	15-22-37	18-26-40	20-31-43	23-33-46	29-37-52	33-40-57
16 x 12			45°	5-8-16	7-11-20	9-14-23	11-16-25	13-19-27	15-20-29	18-23-32	20-25-35
Ac = 1.34 ft²			cfm	402	536	670	804	938	1,072	1,340	1,608
28 x 8			NC 0°	—	—	—	20	24	29	35	41
22 x 10	Throw (ft)		0°	12-18-35	16-23-44	19-29-49	23-35-53	27-41-58	31-44-62	39-49-69	44-53-76
18 x 12			22°	9-14-28	12-19-35	16-23-39	19-28-43	22-33-46	25-35-49	31-39-55	35-43-60
			45°	6-9-18	8-12-22	10-15-24	12-18-27	14-20-29	16-22-31	19-24-35	22-27-38
Ac = **1.60** ft²			cfm	480	640	800	960	1,120	1,280	1,600	1,920
32 x 8			NC 0°	—	—	—	20	25	29	36	42
26 x 10	Throw (ft)		0°	13-19-38	17-25-48	21-32-53	25-38-58	30-45-63	34-48-67	42-53-75	48-58-83
22 x 12			22°	10-15-31	14-20-38	17-25-43	20-31-47	24-36-50	27-38-54	34-43-60	38-47-66
			45°	6-10-19	8-13-24	11-16-27	13-19-29	15-22-32	17-24-34	21-27-38	24-29-41
Ac = **1.80** ft²			cfm	540	720	900	1,080	1,260	1,440	1,800	2,160
36 x 8			NC 0°	—	—	15	21	26	30	37	42
28 x 10	Throw (ft)		0°	14-20-41	18-27-51	23-34-57	27-41-62	32-47-67	36-51-72	45-57-80	51-62-88
24 x 12			22°	11-16-32	14-22-40	18-27-45	22-32-50	25-38-54	29-40-57	36-45-64	40-50-70
			45°	7-10-20	9-14-25	11-17-28	14-20-31	16-24-33	18-25-36	23-28-40	25-31-44

For Performance Notes, see page D35.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Core Area	Core Velocity fpm		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.022	.031	.040	.062	.090
	Total Pressure	0°	0.017	0.031	0.048	0.069	0.094	0.123	0.192	0.277
		22.5°	0.022	0.039	0.061	0.088	0.119	0.156	0.244	0.351
		45°	0.033	0.060	0.093	0.134	0.182	0.238	0.372	0.536
Ac = **2.08** ft² 32 x 10 28 x 12	cfm		624	832	1,040	1,248	1,456	1,664	2,080	2,496
	NC	0°	—	—	16	22	26	30	37	43
	Throw (ft)	0°	15-22-44	19-29-54	24-36-61	29-44-67	34-51-72	39-54-77	48-61-86	54-67-94
		22°	12-17-35	16-23-44	19-29-49	23-35-53	27-41-58	31-44-62	39-49-69	44-53-75
		45°	7-11-22	10-15-27	12-18-30	15-22-33	17-25-36	19-27-38	24-30-43	27-33-47
Ac = **2.45** ft² 32 x 12	cfm		735	980	1,225	1,470	1,715	1,960	2,450	2,940
	NC	0°	—	—	17	22	27	31	38	44
	Throw (ft)	0°	16-24-47	21-32-59	26-39-66	32-47-72	37-55-78	42-59-83	53-66-93	59-72-102
		22°	13-19-38	17-25-47	21-32-53	25-38-58	29-44-62	34-47-67	42-53-75	47-58-82
		45°	8-12-24	11-16-30	13-20-33	16-24-36	18-28-39	21-30-42	26-33-47	30-36-51
Ac = **2.78** ft² 36 x 12	cfm		834	1,112	1,390	1,668	1,946	2,224	2,780	3,336
	NC	0°	—	—	17	23	28	32	39	44
	Throw (ft)	0°	17-25-50	22-34-63	28-42-70	34-50-77	39-59-83	45-63-89	56-70-99	63-77-109
		22°	13-20-40	18-27-50	22-34-56	27-40-62	31-47-67	36-50-71	45-56-80	50-62-87
		45°	8-13-25	11-17-31	14-21-35	17-25-38	20-29-42	22-31-44	28-35-50	31-38-54

Performance Notes:

1. Te1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Performance data is for the grille less air scoop, less damper and with no ceiling effect.
5. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
6. Throw data is based on supply air and room air being at isothermal conditions.
7. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflection and one diffuser.
8. Blanks (—) indicate an NC level below 15.
9. The listed deflection settings refer to horizontal deflection.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Model

Spiral Duct Grille Return

Steel Construction	**SDGR ST**
Galvanized Steel	**SDGR GV**

Price SDGR Spiral Duct Return Grilles were specifically designed to be mounted on round or spiral ducts without the use of any transitions. Gaskets placed at each end of the grille allow it to blend seamlessly with the duct. An additional gasket placed around the inlet provides an air seal between the grille and the duct. The SDGR series is available in steel (SDGR ST) or galvanized steel (SDGR GV) construction, and features high quality formed frames. The galvanized steel model (SDGR GV) can be installed unpainted; it is also an excellent choice for applications where the grille needs to be field painted to match duct finish.

Features

- Available in either steel (SDGR ST) or galvanized steel (SDGR GV) construction.
- Closed cell foam gasket attached to the border provides a tight seal around openings in the duct.
- Perforated screen, staggered round 3/16 in. [5] hole on 1/4 in. [6] centers.

Mounting / Finish Options

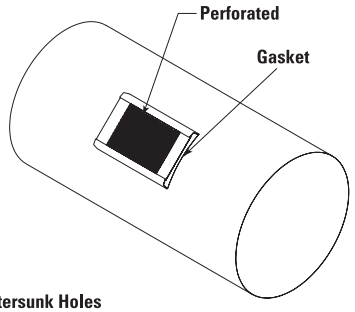
Fastening

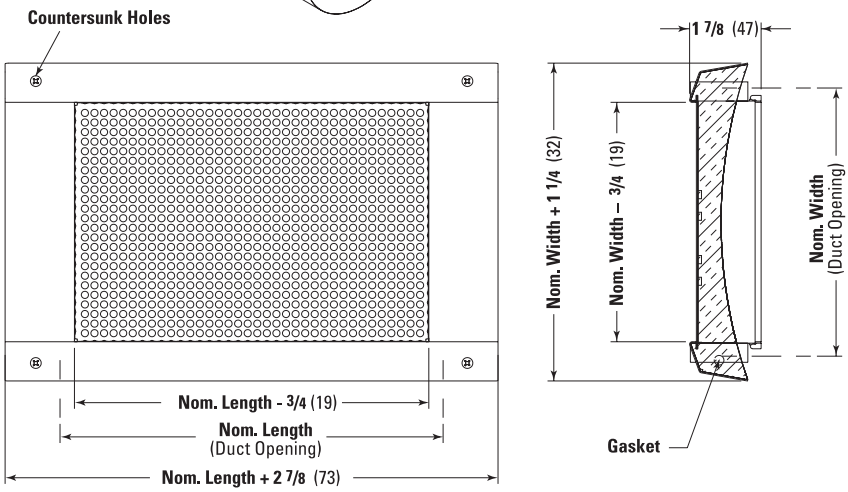
Countersunk screw holes	**A**

Finish

White powder coat	**B12**

For optional and special finishes see color matrix.





Recommended SDGR Size for Minimum Duct Diameter

Duct Size (in) Ø	Min. A Dim. (in)	Max. A Dim. (in)
8 in. - 13 in.	--	4 in.
14 in. - 21 in.	4 in.	6 in.
22 in. - 31 in.	4 in.	8 in.
32 in. - 41 in.	4 in.	10 in.
42 in. - Over	4 in.	12 in.

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Finish.

Example: SDGR // 12 / 4 / GV // A / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Spiral Duct Grille Return
SDGER Series

Product Information

Model

Spiral Duct Grille Return
Extruded Aluminum Construction **SDGER**

Price SDGER Extruded Aluminum Duct Return Grille was designed to be mounted on a round or spiral duct without the use of transitions. The face frame of the SDGER is curved to match the radius of the duct, allowing the grille to fit snugly around it.

The look of the grille can be further enhanced by selecting the clear anodized finish. The SDGER is also available in any Price standard paint finish, including custom matched colors. SDGER series grilles combine architectural appeal with excellent performance characteristics, making it a perfect choice for high profile applications.

Features

- Extruded Aluminum Construction.
- End frames match duct curvature.
- Perforated face, staggered round 3/16 in. [5] hole on 1/4 in. [6] centers.
- Clear anodized or paint finish.
- Mounts directly to duct.
- Closed cell foam gasket attached to the border provides a tight seal around opening in the duct.

Mounting / Finish Options

Fastening

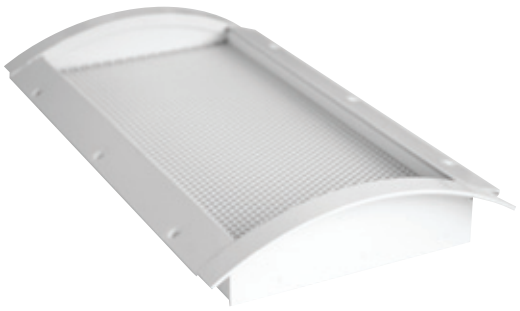
Countersunk screw holes **A**

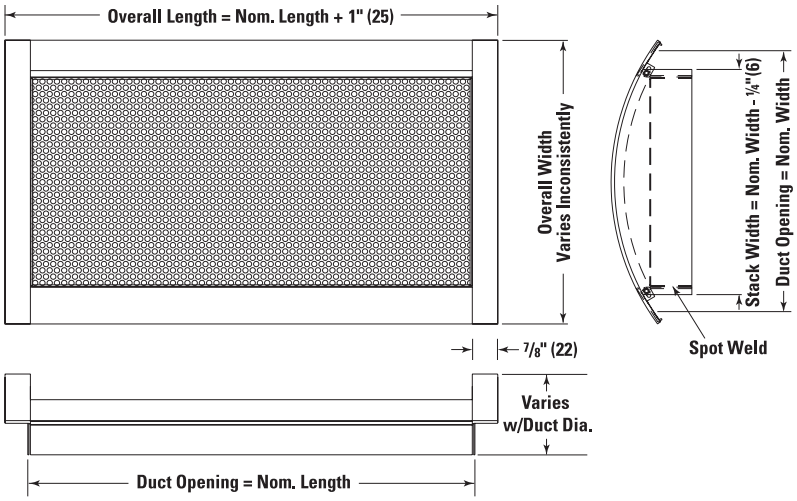
Finish

Clear Anodized **CA**

White powder coat **B12**

For optional and special finishes see color matrix.





Duct Dia.	Nom. Width					
	3	4	6	8	10	12
6	x	x				
8	x	x	x			
10	x	x	x	x		
12	x	x	x	x	x	
14	x	x	x	x	x	x
16	x	x	x	x	x	x
18	x	x	x	x	x	x
20	x	x	x	x	x	x
22	x	x	x	x	x	x
24	x	x	x	x	x	x
26	x	x	x	x	x	x
28	x	x	x	x	x	x
30	x	x	x	x	x	x
32	x	x	x	x	x	x
36	x	x	x	x	x	x

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Finish.

Example: SDGER // I / 10 / 24 / 6 ////// A / B12

Application Recommendations:
A Fastening.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Core Area Sq. ft.	Nominal Size			Core Velocity / Velocity Pressure / Negative s.p.	200 0.002 0.019	300 0.006 0.043	400 0.010 0.076	500 0.016 0.118	600 0.022 0.171	700 0.031 0.232	800 0.040 0.303	900 0.050 0.384	1000 0.062 0.474
								NC 20			NC 30		
0.15	6 x 5	7 x 4		cfm	30	45	60	75	90	105	120	135	150
	10 x 3			NC	—	—	—	20	25	29	33	36	39
0.18	6 x 6	7 x 5		cfm	36	54	72	90	108	126	144	162	180
	8 x 4			NC	—	—	—	20	25	29	33	36	39
0.22	7 x 6			cfm	44	66	88	110	132	154	176	198	220
	10 x 4			NC	—	—	—	20	25	29	33	36	39
0.26	8 x 6	10 x 5		cfm	52	78	104	130	156	182	208	234	260
	12 x 4			NC	—	—	—	20	25	29	33	36	39
0.30	14 x 4			cfm	60	90	120	150	180	210	240	270	300
				NC	—	—	—	20	25	29	33	36	39
0.34	10 x 6	12 x 5		cfm	68	102	136	170	204	238	272	306	340
	16 x 4			NC	—	—	—	20	25	29	33	36	39
0.39	8 x 8	12 x 6		cfm	78	117	156	195	234	273	312	351	390
	14 x 5	18 x 4		NC	—	—	—	20	25	29	33	36	39
0.46	20 x 4	14 x 6		cfm	92	138	184	230	276	322	368	414	460
	16 x 5	10 x 8		NC	—	—	—	20	25	29	33	36	39
0.52	24 x 4	16 x 6		cfm	104	156	208	260	312	364	416	468	520
	18 x 5			NC	—	—	—	20	25	29	33	36	39
0.60	28 x 4	18 x 6	10 x 10	cfm	120	180	240	300	360	420	480	540	600
	20 x 5	12 x 8		NC	—	—	—	20	25	29	33	36	39
0.69	30 x 4	20 x 6	12 x 10	cfm	138	207	276	345	414	483	552	621	690
	24 x 5	14 x 8		NC	—	—	—	20	25	29	33	36	39
0.81	36 x 4	22 x 6	14 x 10	cfm	162	243	324	405	486	567	648	729	810
	28 x 5	16 x 8		NC	—	—	—	20	25	29	33	36	39
0.90	30 x 5	18 x 8	12 x 12	cfm	180	270	360	450	540	630	720	810	900
	26 x 6	16 x 10		NC	—	—	—	20	25	29	33	36	39
1.07	36 x 5	22 x 10	14 x 12	cfm	214	321	428	535	642	749	856	963	1070
	30 x 6	18 x 10		NC	—	—	—	20	25	29	33	36	39
1.18	34 x 6	20 x 10		cfm	236	354	472	590	708	826	944	1062	1180
	24 x 8	16 x 12		NC	—	—	—	20	25	29	33	36	39
1.34	36 x 6	22 x 10		cfm	268	402	536	670	804	938	1072	1206	1340
	28 x 8	18 x 12		NC	—	—	—	20	25	29	33	36	39
1.60	30 x 8	22 x 12		cfm	320	480	640	800	960	1120	1280	1440	1600
	24 x 10			NC	—	—	—	20	25	29	33	36	39
1.80	36 x 8	24 x 12		cfm	360	540	720	900	1080	1260	1440	1620	1800
	30 x 10			NC	—	—	—	20	25	29	33	36	39
2.08	36 x 10			cfm	416	624	832	1040	1248	1456	1664	1872	2080
	30 x 12			NC	—	—	—	20	25	29	33	36	39
2.45	32 x 12			cfm	490	735	980	1225	1470	1715	1960	2205	2450
				NC	—	—	—	20	25	29	33	36	39
2.78	36 x 12			cfm	556	834	1112	1390	1668	1946	2224	2502	2780
				NC		—	—	20	25	29	33	36	39
								NC 20			NC 30		

Performance Notes

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Blanks (—) indicate an NC level below 15.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Models

Grille	**80 / 81 / 82**
Register with integrated plenum	**80SR**

Application

- High capacity return or exhaust outlet with high free area and low sound and pressure drops.
- Ideal for pressurized ceiling return or size restricted exhaust applications.
- For Fire-Rated applications, please see D40

Construction

80 • 1/2 in. x 1/2 in. x 1/2 in. [13mm x 13mm x 13mm] aluminum grid core.

81 • 1/2 in. x 1/2 in. x 1 in. [13mm x 13mm x 25mm] aluminum grid core.

82 • 1 in. x 1 in. x 1 in. [25mm x 25mm x 25mm] aluminum grid core.

- Extruded aluminum borders and frames.
- Available with optional **VCS3** coated steel opposed blade damper or **VCS3AL** aluminum opposed blade damper.

Mounting / Finish Options

Border Style

Surface Mount	
1 1/4 in. [32mm] Flat (Standard)	**F**
1 1/4 in. [32mm] Curved	**C**
1 in. [25mm] Narrow	**N**
Lay-in	
1 in. [25mm] Inverted T	**TB**
9/16 in. [14mm] Fineline	**17**
5/16 in. [8mm] Channel	**CH**
Core Only	**CORE**
Exposed Duct 15/16 in. [24mm]	**ED**†
Panel Mounted	**TBP**

Optional Mounting Frame

For **F** Border	**D**

Fastening

Countersunk screwholes c/w oval-head screws	**A**
No screwholes	**Ø**

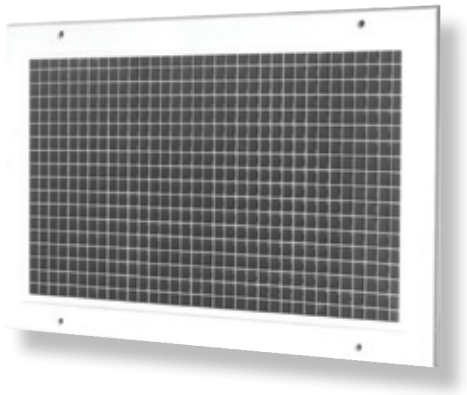
Finish

White Powder Coat	**B12**

For optional and special finishes see color matrix.

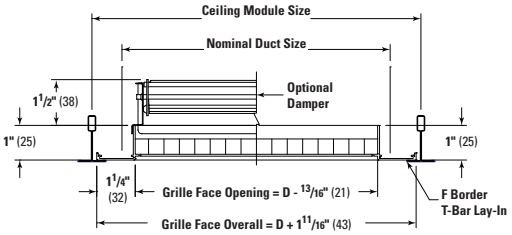
† Note the reduced core area of ED Border per dimensioned details (D88). Corrections for performance data are included in the performance notes.

Eggcrate Face Return



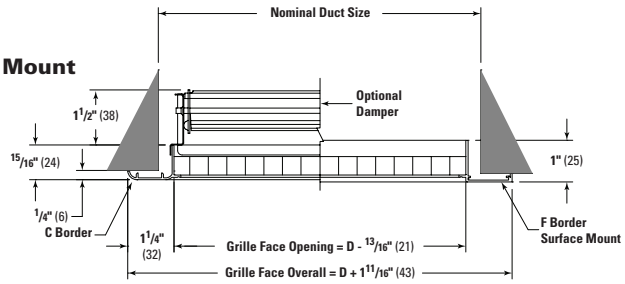
80

T-bar Lay-in



80

Surface Mount



A steel panel shall be provided when ceiling module is greater than 2 in. [51] over duct size.

Available Sizes

- Units sized greater than 48 in. x 24 in. [1219mm x 609mm] provided with mullion(s).
- Units sized greater than 48 in. x 96 in. [1219mm x 2438mm] supplied in sections complete with mounting channel(s).

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**96 in. x 48 in.** [2438 x 1219]

* One-piece frame

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Border Style according to installation requirements (F is standard).
4] Select Module Size if TB border is selected. (Note: maximum duct size = module size-2 in. [50]).
5] Select Mounting Frame if desired.
6] Select Fastening Type (A is standard, n/a with TB border).
7] Select Finish.

Example: 24 in. x 24 in. / 80 / F / A / B12
24 in. x 24 in. / 80 /TB / B12

Application Recommendations:
Surface Mount – **F** Border, **A** Fastening.
T-bar Lay-in – **TB** Border, Fastening n/a

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Fire-Rated Eggcrate Face Return
80-FR Series

Product Information

Three Hour Rating - Lay-in Models

Grille-Eggcrate core
1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] **80-FR**

Grille-Eggcrate stacked core
1/2 in. x 1/2 in. x 1 in. [13 x 13 x 25] **81-FR**

Grille-Eggcrate core
1 in. x 1 in. x 1 in. [25 x 25 x 25] **82-FR**

Price 80-FR Series return grilles are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory).This design meets time versus temperature test criteria and NFPA 90A requirements.

80-FR return grilles are ideal for ceiling return or size restricted exhaust applications where an exposed grid suspended ceiling (T-bar Lay-in) with up to a three hour rating or less is used. They are a high capacity return or exhaust with high free area, low sound and pressure drop.

Features

- Available in both imperial and hard metric module sizes.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or un-restrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Curtain damper is non-asbestos.
- High air capacity with low sound and pressure drop.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Formed Steel Frames are all-welded construction.
- 80-FR Grille - eggcrate aluminum core: 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13].
- 81-FR Grille - eggcrate stacked aluminum core: 1/2 in. x 1/2 in. x 1 in. [13 x 13 x 25].
- 82-FR Grille - eggcrate aluminum core: 1 in. x 1 in. x 1 in. [25 x 25 x 25].
- Optional 12 in. x 12 in. [305 x 305], 24 in. x 12 in. [610 x 305], 24 in. x 24 in. [610 x 610] T-bar Lay-in Panel.

Available Module Sizes

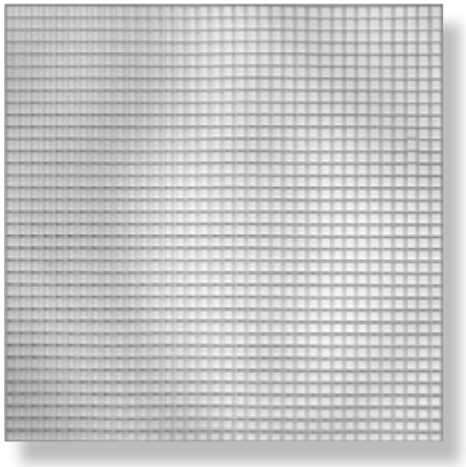
Imperial (in.)	Metric (mm)
24 x 24	610 x 610
24 x 12	610 x 305
12 x 12	305 x 305

Finish

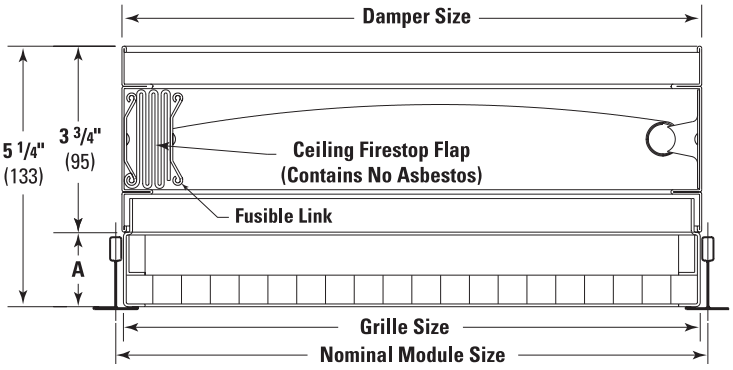
White Powder Coat **B12**

For optional and special finishes see color matrix.

Eggcrate Face Return 80-FR Shown



T-bar Lay-in **-TB Border**



Dimensional Data - Imperial Units

Nominal Module	Grille Size	Damper Size
12 x 12	11 11/16" x 11 11/16"	11 3/4" x 11 3/4"
24 x 12	23 11/16" x 11 11/16"	23 3/4" x 11 3/4"
24 x 24	23 11/16" x 23 11/16"	23 3/4" x 23 3/4"

	A
80-FR	1.500"
81-FR	1.750"
82-FR	1.750"

Dimensional Data - Metric Units

Nominal Module	Grille Size	Damper Size
305 x 305	297 x 297	298 x 298
610 x 305	602 x 297	603 x 298
610 x 610	602 x 602	603 x 603

	A
80-FR	38
81-FR	44
82-FR	44

* Panel Option requires thermal blanket over panel - Ceiling Module and Nominal Grille Size must be specified (Nom. Grille Size = Ceiling Module - 4)

✓ Product Selection Checklist

1] Select Unit Size.
2] Select Module Size of T-bar Lay-in. (Note: maximum duct size = module size-2 in. [50]).
3] Select Outlet Type by model number.
4] Select Finish.

Example: 24 in. x 24 in. / 80-FR / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Imperial Units

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	300 .006 .013	400 .010 .021	500 .016 .034	600 .022 .047	700 .031 .066	800 .040 .085	1000 .062 .132	1200 .090 .192	1400 .122 .260	1500 .140 .298
0.15		7 x 4			cfm	45	60	75	90	105	120	150	180	210	225
		6 x 5			NC	-	-	-	-	-	-	22	28	34	37
0.18	8 x 4	6 x 6			cfm	54	72	90	108	126	144	180	216	252	270
	7 x 5				NC	-	-	-	-	-	-	22	29	35	38
0.22	10 x 4	7 x 6			cfm	66	88	110	132	154	176	220	264	308	330
	8 x 5				NC	-	-	-	-	-	-	23	30	36	38
0.26	12 x 4	8 x 6			cfm	78	104	130	156	182	208	260	312	364	390
	10 x 5				NC	-	-	-	-	-	15	24	31	36	39
0.30	14 x 4				cfm	90	120	150	180	210	240	300	360	420	450
					NC	-	-	-	-	-	16	24	31	37	40
0.34	16 x 4	10 x 6			cfm	102	136	170	204	238	272	340	408	476	510
	12 x 5				NC	-	-	-	-	-	16	25	32	37	40
0.39	18 x 4	12 x 6			cfm	117	156	195	234	273	312	390	468	546	585
	14 x 5	8 x 8			NC	-	-	-	-	-	17	25	32	38	41
0.46	20 x 4	14 x 6			cfm	138	184	230	276	322	368	460	552	644	690
	16 x 5	10 x 8			NC	-	-	-	-	-	18	26	33	39	41
0.52	24 x 4	16 x 6			cfm	156	208	260	312	364	416	520	624	728	780
	18 x 5				NC	-	-	-	-	-	18	26	33	39	42
0.60	28 x 4	18 x 6	10 x 10		cfm	180	240	300	360	420	480	600	720	840	900
	20 x 5	12 x 8			NC	-	-	-	-	-	19	27	34	40	42
0.69	30 x 4	20 x 6	12 x 10		cfm	207	276	345	414	483	552	690	828	966	1035
	24 x 5	14 x 8			NC	-	-	-	-	-	19	28	34	40	43
0.81	36 x 4	22 x 6	14 x 10		cfm	243	324	405	486	567	648	810	972	1134	1215
	28 x 5	16 x 8			NC	-	-	-	-	-	20	28	35	41	43
0.90	40 x 4	26 x 6	16 x 10		cfm	270	360	450	540	630	720	900	1080	1260	1350
	30 x 5	18 x 8	12 x 12		NC	-	-	-	-	15	20	29	35	41	44
1.07	48 x 4	30 x 6	14 x 12		cfm	321	428	535	642	749	856	1070	1284	1498	1605
	36 x 5	18 x 10			NC	-	-	-	-	16	21	29	36	42	45
1.18	34 x 6	20 x 10	14 x 14		cfm	354	472	590	708	826	944	1180	1416	1652	1770
	24 x 8	16 x 12			NC	-	-	-	-	16	21	30	37	42	45
1.34	60 x 4	36 x 6	16 x 14		cfm	402	536	670	804	938	1072	1340	1608	1876	2010
	48 x 5	18 x 12			NC	-	-	-	-	17	22	30	37	43	45
1.60	72 x 4	24 x 10	18 x 14		cfm	480	640	800	960	1120	1280	1600	1920	2240	2400
	30 x 8	22 x 12	16 x 16		NC	-	-	-	-	17	22	31	38	44	46
1.80	60 x 5	36 x 8	24 x 12	18 x 16	cfm	540	720	900	1080	1260	1440	1800	2160	2520	2700
	48 x 6	30 x 10	20 x 14		NC	-	-	-	-	18	23	31	38	44	47
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	624	832	1040	1248	1456	1664	2080	2496	2912	3120
	60 x 6	36 x 10	24 x 14	18 x 18	NC	-	-	-	-	18	23	32	39	45	47
2.45	72 x 6	32 x 12	24 x 16		cfm	735	980	1225	1470	1715	1960	2450	2940	3430	3675
	48 x 8	26 x 14	20 x 18		NC	-	-	-	-	19	24	33	39	45	48
2.78	36 x 12	26 x 16	22 x 20		cfm	834	1112	1390	1668	1946	2224	2780	3336	3892	4170
	30 x 14	24 x 18			NC	-	-	-	-	20	25	33	40	46	48
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	933	1244	1555	1866	2177	2488	3110	3732	4354	4665
	48 x 10	36 x 14	26 x 18		NC	-	-	-	-	20	25	33	40	46	49
3.61	72 x 8	48 x 12	30 x 18		cfm	1083	1444	1805	2166	2527	2888	3610	4332	5054	5415
	60 x 10	36 x 16	24 x 24		NC	-	-	-	-	21	26	34	41	47	49
4.29	48 x 14	32 x 20			cfm	1287	1716	2145	2574	3003	3432	4290	5148	6006	6435
	36 x 18	28 x 24			NC	-	-	-	15	21	26	35	42	47	50
4.65	72 x 10	36 x 20			cfm	1395	1860	2325	2790	3255	3720	4650	5580	6510	6975
	48 x 16	30 x 24			NC	-	-	-	16	22	27	35	42	48	50
5.58	72 x 12	48 x 18			cfm	1674	2232	2790	3348	3906	4464	5580	6696	7812	8370
	60 x 14	36 x 24			NC	-	-	-	16	22	27	36	43	48	51
6.25	72 x 14	48 x 20			cfm	1875	2500	3125	3750	4375	5000	6250	7500	8750	9375
	60 x 16	30 x 30			NC	-	-	-	17	23	28	36	43	49	51

NC 20 30 40 50

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. NC values are based on room absorption of 10 dB re 10^{-12} watts.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested without damper. Corrections for grille with damper:
   — Multiply negative static pressure by 1.3
   — Add 6 to listed NC.
7. The performance tables are based on grilles with F border. For ED border the following correction factors must be applied due to the reduced core area of this border.
8. Does not include pressure drop through filter on FF, FH models
9. Does not include effects of ceiling radiation damper (80-FR, 80FF-FR, 81-FR, 82-FR).

Listed Core Area	Multiply Total Pressure	Add NC
.15 - .30	2.4	+15
.34 - .90	1.9	+10
1.07 - 1.80	1.4	+5
2.08 - 6.25	1.2	+2

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Metric Units

Core Area Sq. M.	Nominal Size (mm)				Core Velocity (m/s)	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	7.5
					Velocity Pressure (Pa)	1	2	4	6	8	10	16	22	30	35
					Negative SP (Pa)	3	5	8	12	16	21	33	48	65	74
0.012	180 x 100				L/S	19	25	31	38	44	50	63	75	88	94
	150 x 125				NC	--	--	--	--	--	--	21	28	34	36
0.014	205 x 100	150 x 150			L/S	22	29	36	44	51	58	73	88	102	109
	180 x 125				NC	--	--	--	--	--	--	22	29	34	37
0.019	255 x 100	180 x 150			L/S	28	37	47	56	65	75	93	112	131	140
	205 x 125				NC	--	--	--	--	--	--	23	30	35	38
0.022	305 x 100	205 x 150			L/S	34	46	57	68	80	91	114	137	160	171
	255 x 125				NC	--	--	--	--	--	15	23	30	36	39
0.026	355 x 100				L/S	40	54	67	81	94	108	134	161	188	202
					NC	--	--	--	--	--	16	24	31	37	39
0.031	405 x 100	255 x 150			L/S	46	62	77	93	108	124	155	186	217	232
	305 x 125				NC	--	--	--	--	--	16	25	32	37	40
0.034	455 x 100	305 x 150			L/S	53	70	88	105	123	140	175	210	246	263
	355 x 125	205 x 205			NC	--	--	--	--	--	17	25	32	38	40
0.039	510 x 100	355 x 150			L/S	59	78	98	118	137	157	196	235	274	294
	405 x 125	255 x 205			NC	--	--	--	--	--	17	26	32	38	41
0.046	610 x 100	405 x 150			L/S	71	95	118	142	166	189	237	284	332	355
	455 x 125				NC	--	--	--	--	--	18	26	33	39	42
0.055	710 x 100	455 x 150	255 x 255		L/S	83	111	139	167	194	222	278	333	389	417
	510 x 125	305 x 205			NC	--	--	--	--	--	18	27	34	40	42
0.059	760 x 100	510 x 150	305 x 255		L/S	89	119	149	179	209	239	298	358	418	447
	610 x 125	355 x 205			NC	--	--	--	--	--	19	27	34	40	43
0.071	915 x 100	560 x 150	355 x 255		L/S	108	144	180	216	252	288	360	432	504	540
	710 x 125	405 x 205			NC	--	--	--	--	--	20	28	35	41	43
0.079	1015 x 100	660 x 150	405 x 255		L/S	120	160	200	240	281	321	401	481	561	601
	760 x 125	455 x 205	305 x 305		NC	--	--	--	--	--	20	28	35	41	44
0.095	1220 x 100	760 x 150	355 x 305		L/S	145	193	241	290	338	386	483	579	676	724
	915 x 125	455 x 255			NC	--	--	--	--	16	21	29	36	42	44
0.110	865 x 150	510 x 255	355 x 355		L/S	167	223	278	334	390	445	556	668	779	835
	610 x 205	405 x 305			NC	--	--	--	--	16	21	30	37	42	45
0.119	1525 x 100	915 x 150	405 x 355		L/S	182	242	303	363	424	484	606	727	848	908
	1220 x 125	455 x 305			NC	--	--	--	--	16	22	30	37	43	45
0.143	1830 x 100	610 x 255	455 x 355		L/S	219	291	364	437	510	583	729	874	1,020	1,093
	760 x 205	560 x 305	405 x 405		NC	--	--	--	--	17	22	31	38	43	46
0.157	1525 x 125	915 x 205	610 x 305	455 x 405	L/S	240	320	400	480	560	640	799	959	1,119	1,199
	1220 x 150	760 x 255	510 x 355		NC	--	--	--	--	18	23	31	38	44	46
0.190	1830 x 125	1015 x 205	760 x 305	510 x 405	L/S	289	385	481	577	673	769	962	1,154	1,346	1,443
	1525 x 150	915 x 255	610 x 355	455 x 455	NC	--	--	--	--	18	23	32	39	44	47
0.235	1830 x 150	815 x 305	610 x 405		L/S	358	478	597	717	836	956	1,195	1,434	1,673	1,792
	1220 x 205	660 x 355	510 x 455		NC	--	--	--	--	19	24	33	40	45	48
0.252	915 x 305	660 x 405	560 x 510		L/S	384	512	640	769	897	1,025	1,281	1,537	1,793	1,921
	760 x 355	610 x 455			NC	--	--	--	--	19	24	33	40	46	48
0.272	1525 x 205	1015 x 305	760 x 405	610 x 510	L/S	414	552	690	828	967	1,105	1,381	1,657	1,933	2,071
	1220 x 255	915 x 355	660 x 455		NC	--	--	--	--	20	25	33	40	46	49
0.327	1830 x 205	1220 x 305	760 x 455		L/S	498	664	831	997	1,163	1,329	1,661	1,993	2,325	2,492
	1525 x 255	915 x 405	610 x 610		NC	--	--	--	--	20	25	34	41	47	49
0.399	1220 x 355	815 x 510			L/S	608	811	1,014	1,216	1,419	1,622	2,027	2,433	2,838	3,041
	915 x 455	710 x 610			NC	--	--	--	15	21	26	35	42	47	50
0.419	1830 x 255	915 x 510			L/S	638	851	1,064	1,276	1,489	1,702	2,127	2,553	2,978	3,191
	1220 x 405	760 x 610			NC	--	--	--	16	21	26	35	42	48	50
0.510	1830 x 305	1220 x 455			L/S	778	1,037	1,297	1,556	1,816	2,075	2,594	3,112	3,631	3,890
	1525 x 355	915 x 610			NC	--	--	--	16	22	27	36	43	48	51
0.602	1830 x 355	1220 x 510			L/S	918	1,224	1,530	1,836	2,142	2,448	3,060	3,672	4,284	4,590
	1525 x 405	760 x 760			NC	--	--	--	17	23	28	36	43	49	52

NC20 30 40 50

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 Pascals (Pa).
3. NC values are based on a room absorption of 10 dB re 10^{-12} watts.
4. Blanks (-) indicate an NC level below 15.
5. Grille tested without damper. Corrections for grille with damper:
   - Add 6 dB to the listed NC.
   - Multiply listed Negative Static Pressure by 1.3.
6. The performance tables are based on grilles with F border. For ED border the following correction factors must be applied due to the reduced core area of this border:
7. Does not include pressure drop through filter on FF, FH models.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Eggcrate Face Return
85 Series

Product Information

Models

Models

Grille **85**

- High capacity return or exhaust outlet with high free area, low sound, and low pressure drop.
- 45 degree angled core eliminates the line of sight through the grille into ductwork or ceiling without a light shield accessory or plenum.
- Ideal for pressurized ceiling return or size restricted exhaust applications.

Construction

- Aluminum grid core.
- Extruded aluminum borders and frames

Mounting / Finish Options

Border Style

Surface Mount

1 1/4 in. [32mm] Flat (Standard)	**F**
1 1/4 in. [32mm] Curved	**C**
1 in. [25mm] Narrow	**N**

Lay-in

1 1/4 in. [32mm] Flat	**F**
9/16 in. [14mm] Fineline	**17**
25/32 in. [20mm] Narrow	**NF**
5/16 in. [8mm] Channel	**CH**
Core Only	**CORE**

Panel Mounted

For 1 in. Flat Tee Bar, Steel Panel	**3P**
For 1 in. Flat Tee Bar, Aluminum Panel	**3PA**
For 9/16 in. Flat Tee Bar, Steel Panel	**9I6P**
For 9/16 in. Flat Tee Bar, Aluminum Panel	**916PA**
For Fineline Ceiling, Steel Panel	**17P**
For Fineline Ceiling, Aluminum Panel	**17PA**

Fastening

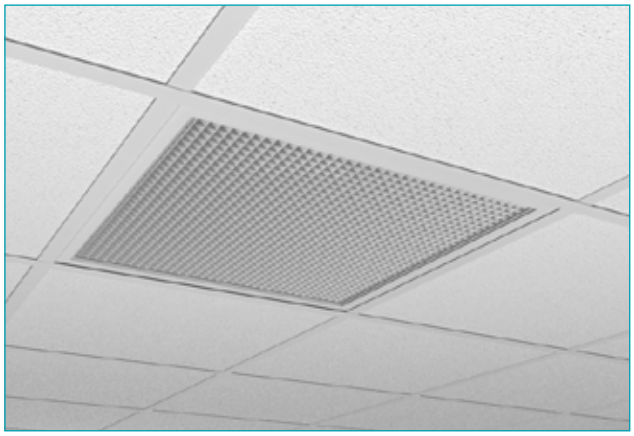
Countersunk screwholes	**A**
No screwholes	**Ø**

Finish

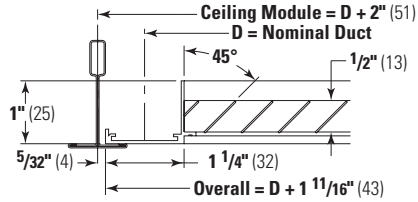
White Powder Coat	**B12**

For optional and special finishes see color matrix.

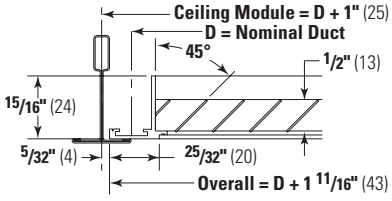
Eggcrate Face Return



Tee Bar Lay-in

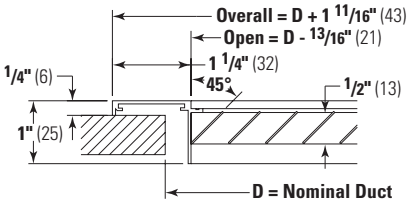


F Frame

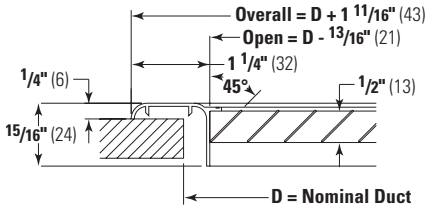


NF Frame

Surface Mount



F Frame



C Frame

See submittal for additional frame styles.

Available Sizes

	Minimum (Short & Long Pattern)	Maximum (Short Pattern)	Maximum (Long Pattern)
Imperial (in.)	6 in. x 4 in.	24 in. x 24 in.	48 in. x 24 in.
Metric (mm)	152 x 102	610 x 610	1219 x 610

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Application and Border Style according installation requirements.
3] Select Sight Resistance Pattern: Parallel to SHORT or LONG
4] Select Panel Size if Panel Mounted border is selected.
5] Select Fastening Method (A is standard for Surface Mount, 0 is standard for Lay-In)
6] Select Finish

Example: 85 / 20 in. x 20 in. / Lay-In
3P / Long / 24 in. x 24 in. / 0 / B12

Application Recommendations:
Surface Mount – **F** Border, **A** Fastening.
Tee Bar Lay-in – **F** Border or Panel, **0** Fastening

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Imperial Units

Core Area Sq. ft	Nominal Size				Core Velocity Velocity Pressure Negative s.p.	100 0.001 0.010	200 0.002 0.034	300 0.006 0.068	400 0.010 0.112	500 0.016 0.166	600 0.022 0.228	700 0.031 0.298
									NC20			30
0.15	7x4				cfm	15	30	45	60	75	90	105
	6x5				NC	—	—	—	15	21	26	30
0.18	8x4	6x6			cfm	18	36	54	72	90	108	126
	7x5				NC	—	—	—	16	22	27	31
0.22	10x4	7x6			cfm	22	44	66	88	110	132	154
	8x5				NC	—	—	—	16	22	27	32
0.26	12x4	8x6			cfm	26	52	78	104	130	156	182
	10x5				NC	—	—	—	17	23	28	32
0.3	14x4				cfm	30	60	90	120	150	180	210
					NC	—	—	—	18	24	28	33
0.34	16x4	10x6			cfm	34	68	102	136	170	204	238
	12x5				NC	—	—	—	18	24	29	33
0.39	18x4	12x6			cfm	39	78	117	156	195	234	273
	14x5	8x8			NC	—	—	—	18	24	29	34
0.46	20x4	14x6			cfm	46	92	138	184	230	276	322
	16x5	10x8			NC	—	—	—	19	25	30	34
0.52	24x4	16x6			cfm	52	104	156	208	260	312	364
	18x5				NC	—	—	—	19	26	30	35
0.6	28x4	18x6	10x10		cfm	60	120	180	240	300	360	420
	20x5	12x8			NC	—	—	—	20	26	31	35
0.69	30x4	20x6	12x10		cfm	69	138	207	276	345	414	483
	24x5	14x8			NC	—	—	—	20	27	31	36
0.81	36x4	22x6	14x10		cfm	81	162	243	324	405	486	567
	28x5	16x8			NC	—	—	—	21	27	32	36
0.9	40x4	26x6	16x10		cfm	90	180	270	360	450	540	630
	30x5	18x8	12x12		NC	—	—	—	21	27	32	37
1.07	48x4	30x6	14x12		cfm	107	214	321	428	535	642	749
	36x5	18x10			NC	—	—	—	22	28	33	37
1.18	34x6	20x10	14x14		cfm	118	236	354	472	590	708	826
	24x8	16x12			NC	—	—	—	22	28	33	38
1.34	60x4	36x6	18x12		cfm	134	268	402	536	670	804	938
	48x5	22x10	16x14		NC	—	—	15	23	29	34	38
1.6	72x4	24x10	18x14		cfm	160	320	480	640	800	960	1120
	30x8	22x12	16x16		NC	—	—	16	23	30	34	39
1.8	60x5	36x8	24x12	18x16	cfm	180	360	540	720	900	1080	1260
	48x6	30x10	20x14		NC	—	—	16	24	30	35	39
2.08	72x5	40x8	30x12	20x16	cfm	208	416	624	832	1040	1248	1456
	60x6	36x10	24x14	18x18	NC	—	—	17	24	30	35	40
2.45	72x6	32x12	24x16		cfm	245	490	735	980	1225	1470	1715
	48x8	26x14	20x18		NC	—	—	17	25	31	36	40
2.78	36x12	26x16	22x20		cfm	278	556	834	1112	1390	1668	1946
	30x14	24x18			NC	—	—	18	25	32	36	41
3.11	60x8	40x12	30x16	22x22	cfm	311	622	933	1244	1555	1866	2177
	48x10	36x14	26x18		NC	—	—	18	26	32	37	41
3.61	72x8	48x12	30x18		cfm	361	722	1083	1444	1805	2166	2527
	60x10	36x16	24x24		NC	—	—	19	26	32	37	42
4.29	48x14	32x20			cfm	429	858	1287	1716	2145	2574	3003
	36x18	28x24			NC	—	—	19	27	33	38	42
4.65	72x10	36x20			cfm	465	930	1395	1860	2325	2790	3255
	48x16	30x24			NC	—	—	20	27	33	38	42
5.58	72x12	48x18			cfm	558	1116	1674	2232	2790	3348	3906
	60x14	36x24			NC	—	—	20	28	34	39	43
6.25	72x14	48x20			cfm	625	1250	1875	2500	3125	3750	4375
	60x16	30x30			NC	—	—	21	28	34	39	44
								NC20		30		40

Performance Notes

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Airflow is in cfm.
3. All pressures are in in. w.g.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Blanks (—) indicate an NC level below 15.

GRILLES AND REGISTERS

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Metric Units

Core Area Sq. M.	Nominal Size (mm)				Core Velocity (m/s) / Velocity Pressure (Pa) / Negative SP (Pa)	0.5 / 0 / 2	1.0 / 1 / 8	1.5 / 1 / 17	2.0 / 2 / 28	2.5 / 4 / 41	3.0 / 6 / 57	3.5 / 8 / 74
0.014	178 x 102				L/s	7	14	21	28	35	42	50
	152 x 127				NC	-	-	-	15	21	26	30
0.017	203 x 102	152 x 152			L/s	8	17	25	34	42	51	59
	178 x 102				NC	-	-	-	16	22	27	31
0.02	254 x 102	178 x 152			L/s	10	21	31	42	52	62	73
	203 x 127				NC	-	-	-	16	22	27	32
0.024	305 x 102	203 x 152			L/s	12	25	37	49	61	74	86
	254 x 127				NC	-	-	-	17	23	28	32
0.028	356 x 102				L/s	14	28	42	57	71	85	99
					NC	-	-	-	18	24	28	33
0.032	406 x 102	254 x 152			L/s	16	32	48	64	80	96	112
	305 x 127				NC	-	-	-	18	24	29	33
0.036	457 x 102	305 x 152			L/s	18	37	55	74	92	110	129
	356 x 127	203 x 203			NC	-	-	-	18	24	29	34
0.043	508 x 102	356 x 152			L/s	22	43	65	87	109	130	152
	406 x 127	254 x 203			NC	-	-	-	19	25	30	34
0.048	610 x 102	406 x 152			L/s	25	49	74	98	123	147	172
	457 x 127				NC	-	-	-	19	26	30	35
0.056	711 x 102	457 x 152	254 x 254		L/s	28	57	85	113	142	170	198
	508 x 127	305 x 203			NC	-	-	-	20	26	31	35
0.064	762 x 102	508 x 152	305 x 254		L/s	33	65	98	130	163	195	228
	610 x 127	356 x 203			NC	-	-	-	20	27	31	36
0.075	914 x 102	559 x 152	356 x 254		L/s	38	76	115	153	191	229	268
	711 x 127	406 x 203			NC	-	-	-	21	27	32	36
0.084	1016 x 102	660 x 152	406 x 254		L/s	42	85	127	170	212	255	297
	762 x 127	457 x 203	305 x 305		NC	-	-	-	21	27	32	37
0.099	1219 x 102	762 x 152	356 x 305		L/s	51	101	152	202	253	303	354
	914 x 127	457 x 254			NC	-	-	-	22	28	33	37
0.11	864 x 152	508 x 254	356 x 356		L/s	56	111	167	223	278	334	390
	610 x 203	406 x 305			NC	-	-	-	22	28	33	38
0.124	1524 x 102	914 x 152	457 x 305		L/s	63	126	190	253	316	379	443
	1219 x 127	559 x 254	406 x 356		NC	-	-	15	23	29	34	38
0.149	1829 x 102	610 x 254	457 x 356		L/s	76	151	227	302	378	453	529
	762 x 203	559 x 305	406 x 406		NC	-	-	16	23	30	34	39
0.167	1524 x 127	914 x 203	610 x 305	457 x 406	L/s	85	170	255	340	425	510	595
	1219 x 152	762 x 254	508 x 356		NC	-	-	16	24	30	35	39
0.193	1829 x 127	1016 x 203	762 x 305	508 x 406	L/s	98	196	295	393	491	589	687
	1524 x 152	914 x 254	610 x 356	457 x 457	NC	-	-	17	24	30	35	40
0.228	1829 x 152	813 x 305	610 x 406		L/s	116	231	347	463	578	694	809
	1219 x 203	660 x 356	508 x 457		NC	-	-	17	25	31	36	40
0.258	914 x 305	660 x 406	559 x 508		L/s	131	262	394	525	656	787	919
	762 x 356	610 x 457			NC	-	-	18	25	32	36	41
0.289	1524 x 203	1016 x 305	762 x 406	559 x 559	L/s	147	294	440	587	734	881	1,028
	1219 x 254	914 x 356	660 x 457		NC	-	-	18	26	32	37	41
0.335	1829 x 203	1219 x 305	762 x 457		L/s	170	341	511	682	852	1,022	1,193
	1524 x 254	914 x 406	610 x 610		NC	-	-	19	26	32	37	42
0.399	1219 x 356	813 x 508			L/s	202	405	607	810	1,012	1,215	1,417
	914 x 457	711 x 610			NC	-	-	19	27	33	38	42
0.432	1829 x 254	914 x 508			L/s	219	439	658	878	1,097	1,317	1,536
	1219 x 406	762 x 610			NC	-	-	20	27	33	38	42
0.518	1829 x 305	1219 x 457			L/s	263	527	790	1,054	1,317	1,580	1,844
	1524 x 356	914 x 610			NC	-	-	20	28	34	39	43
0.581	1829 x 356	1219 x 508			L/s	295	590	885	1,180	1,475	1,770	2,065
	1524 x 406	762 x 762			NC	-	-	21	28	34	39	44
								NC20		**30**		**40**

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 Pascals (Pa).
3. NC values are based on a room absorption of 10 dB re 10^{-12} watts.
4. Blanks (-) indicate an NC level below 15.
5. Grille tested without damper. Corrections for grille with damper:
   Add 6 dB to the listed NC.
   Multiply listed Negative Static Pressure by 1.3.
6. The performance tables are based on grilles with F border. For ED border the following correction factors must be applied due to the reduced core area of this border:
7. Does not include pressure drop through filter on FF, FH models.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Model

Grille

Steel Core Construction	**10**
Aluminum Core Construction	**10A**
Stainless Steel Construction	**10SS**

Application

- Mid to high capacity return with core free area of approximately 50%.
- Perforated core blends unobtrusively with most interior design conditions.
- Ideally suited for ceiling mounted return applications.

Construction

- Available in steel or aluminum core construction (aluminum core recommended for high humidity applications).
- Extruded aluminum borders for clean, crisp detailing.
- Core 3/16 in. [5] holes on 1/4 in. [6] centers staggered 60°.
- Mounting frames available to accent grille border and protect wall surface during grille removal.

For Fire-Rated applications please see D45.

Mounting / Finish Options

Border Style

Surface Sidewall Mount 1 1/4 in. [32] Flat (Standard)	**F(SW)**
T-bar Lay-in 1 in. [25] T	**F (LI)**

Optional Mounting Frame

For **F** Border **(SW)**	**D**

Fastening

Countersunk screwholes c/w oval-head screws	**A**
No screwholes	**Ø**

Finish

White Powder Coat	**B12**

For optional and special finishes see color matrix.

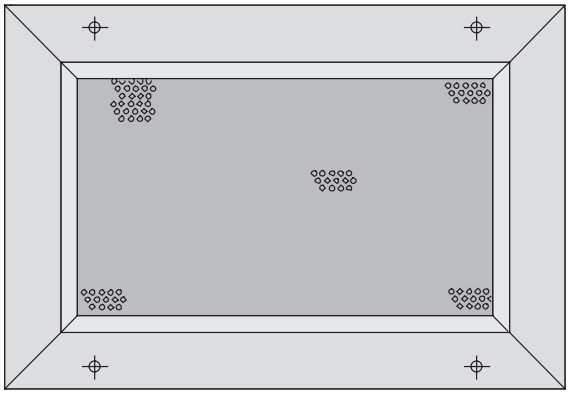
Available Sizes

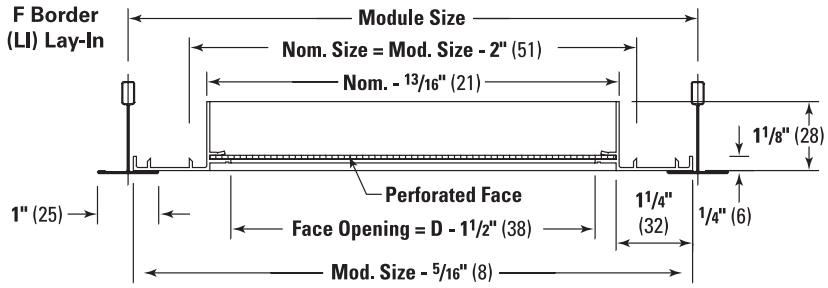
Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**48 in. x 24 in.** [1219 x 610]

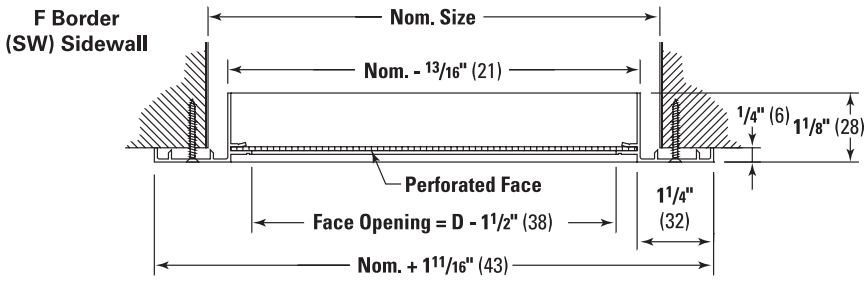
* One-piece

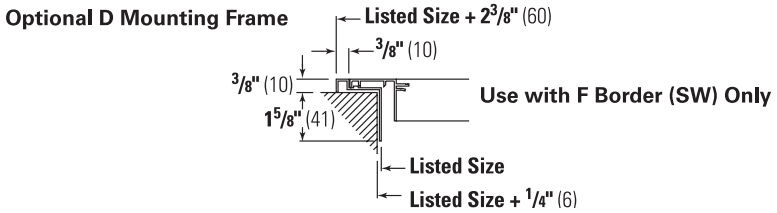
- For oversize grille construction, see pages D118 - D119.

Perforated Face Return









✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style).
3] Select Border Style according to installation requirements (F is standard).
4] Select Module Size if TB border is selected. (Note: maximum duct size = module size-2 in. [50]).
5] Select Mounting Frame if desired.
6] Select Fastening Type (A is standard, n/a with TB Border).
7] Select Finish.

Example: 24 in. x 12 in. / 10 / SW / A / B12
24 in. x 24 in. / 10A /TB /0/ B12

Application Recommendations:
Surface Mount – **F** Border, **A** Fastening.
T-bar Lay-in – **LI** Border, Fastening n/a

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Fire-Rated Perforated Face Return
10-FR Series

Product Information

Three Hour Rating - Lay-in

Grille

Steel Core Construction **10-FR**

Price 10-FR Series return grilles are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory).This design meets time versus temperature test criteria and NFPA 90A requirements.

10-FR Series return grilles are designed for mid to high capacity return with core free area of approximately 50%. The perforated core blends unobtrusively with most interior design conditions.

Features

- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Curtain damper is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Formed steel frames are all-welded construction.
- 10-FR core: 3/16 in. [5] holes on 1/4 in. [6] centers staggered 60°.

Available Module Sizes

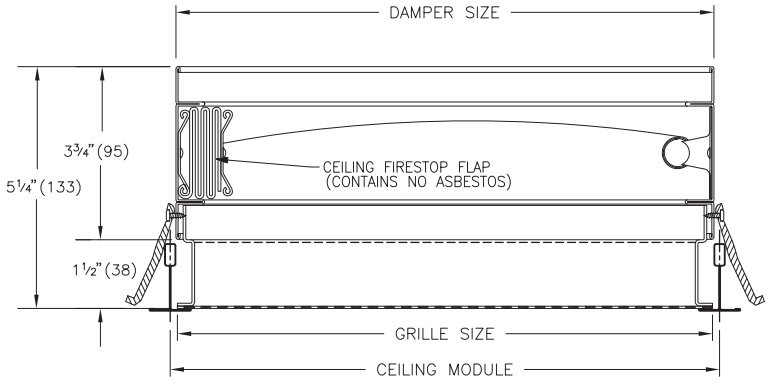
Imperial
24 in. x 24 in.
24 in. x 12 in.
12 in. x 12 in.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Perforated Face Return 10-FR



Dimensional Data - Imperial Units / Metric Units

Nominal Module		
Imperial (in.)	Grille Size	Damper Size
12 x 12 [305 x 305]	11 11/16" x 11 11/16" [297 x 297]	11 3/4" x 11 3/4" [298 x 298]
24 x 12 [610 x 305]	23 11/16" x 11 11/16" [602 x 297]	23 3/4" x 11 3/4" [603 x 298]
24 x 24 [610 x 610]	23 11/16" x 23 11/16" [602 x 602]	23 3/4" x 23 3/4" [603 x 603]

✓ Product Selection Checklist

1] Select Module Size.
2] Select Outlet Type by model number.
3] Select Finish.

Example: 24 in. x 24 in. / 10-FR / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 0.002 0.019	300 0.006 0.043	400 0.010 0.076	500 0.016 0.118	600 0.022 0.171	700 0.031 0.232	800 0.040 0.303	900 0.050 0.384	1000 0.062 0.474
									NC 20		NC 30			
0.15	6 x 5				cfm	30	45	60	75	90	105	120	135	150
	7 x 4				NC	—	—	—	20	25	29	33	36	39
0.18	6 x 6	7 x 5			cfm	36	54	72	90	108	126	144	162	180
	8 x 4				NC	—	—	—	20	25	29	33	36	39
0.22	7 x 6				cfm	44	66	88	110	132	154	176	198	220
	10 x 4				NC	—	—	—	20	25	29	33	36	39
0.26	8 x 6	10 x 5			cfm	52	78	104	130	156	182	208	234	260
	12 x 4				NC	—	—	—	20	25	29	33	36	39
0.30	14 x 4				cfm	60	90	120	150	180	210	240	270	300
					NC	—	—	—	20	25	29	33	36	39
0.34	10 x 6	12 x 5			cfm	68	102	136	170	204	238	272	306	340
	16 x 4				NC	—	—	—	20	25	29	33	36	39
0.39	8 x 8	12 x 6			cfm	78	117	156	195	234	273	312	351	390
	14 x 5	18 x 4			NC	—	—	—	20	25	29	33	36	39
0.46	20 x 4	14 x 6			cfm	92	138	184	230	276	322	368	414	460
	16 x 5	10 x 8			NC	—	—	—	20	25	29	33	36	39
0.52	24 x 4	16 x 6			cfm	104	156	208	260	312	364	416	468	520
	18 x 5				NC	—	—	—	20	25	29	33	36	39
0.60	28 x 4	18 x 6	10 x 10		cfm	120	180	240	300	360	420	480	540	600
	20 x 5	12 x 8			NC	—	—	—	20	25	29	33	36	39
0.69	30 x 4	20 x 6	12 x 10		cfm	138	207	276	345	414	483	552	621	690
	24 x 5	14 x 8			NC	—	—	—	20	25	29	33	36	39
0.81	36 x 4	22 x 6	14 x 10		cfm	162	243	324	405	486	567	648	729	810
	28 x 5	16 x 8			NC	—	—	—	20	25	29	33	36	39
0.90	40 x 4	26 x 6	16 x 10		cfm	180	270	360	450	540	630	720	810	900
	30 x 5	18 x 8	12 x 12		NC	—	—	—	20	25	29	33	36	39
1.07	48 x 4	30 x 6	14 x 12		cfm	214	321	428	535	642	749	856	963	1070
	36 x 5	18 x 10			NC	—	—	—	20	25	29	33	36	39
1.18	34 x 6	20 x 10	14 x 14		cfm	236	354	472	590	708	826	944	1062	1180
	24 x 8	16 x 12			NC	—	—	—	20	25	29	33	36	39
1.34	60 x 4	36 x 6	16 x 14		cfm	268	402	536	670	804	938	1072	1206	1340
	48 x 5	18 x 12			NC	—	—	—	20	25	29	33	36	39
1.6	72 x 4	24 x 10	18 x 14		cfm	320	480	640	800	960	1120	1280	1440	1600
	30 x 8	22 x 12	16 x 16		NC	—	—	—	20	25	29	33	36	39
1.8	60 x 5	36 x 8	24 x 12	18 x 16	cfm	360	540	720	900	1080	1260	1440	1620	1800
	48 x 6	30 x 10	20 x 14		NC	—	—	—	20	25	29	33	36	39
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	416	624	832	1040	1248	1456	1664	1872	2080
	60 x 6	36 x 10	24 x 14	18 x 18	NC	—	—	—	20	25	29	33	36	39
2.45	72 x 6	32 x 12	24 x 16		cfm	490	735	980	1225	1470	1715	1960	2205	2450
	48 x 8	26 x 14	20 x 18		NC	—	—	—	20	25	29	33	36	39
2.78	36 x 12	26 x 16	22 x 20		cfm	556	834	1112	1390	1668	1946	2224	2502	2780
	30 x 14	24 x 18			NC	—	—	—	20	25	29	33	36	39
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	622	933	1244	1555	1866	2177	2488	2799	3110
	48 x 10	36 x 14	26 x 18		NC	—	—	—	20	25	29	33	36	39
3.61	72 x 8	48 x 12	30 x 18		cfm	722	1083	1444	1805	2166	2527	2888	3249	3610
	60 x 10	36 x 16	24 x 24		NC	—	—	—	20	25	29	33	36	39
4.29	48 x 14	32 x 20			cfm	858	1287	1716	2145	2574	3003	3432	3861	4290
	36 x 18	28 x 24			NC	—	—	—	20	25	29	33	36	39
4.65	72 x 10	36 x 20			cfm	930	1395	1860	2325	2790	3255	3720	4185	4650
	48 x 16	30 x 24			NC	—	—	—	20	25	29	33	36	39
5.58	72 x 12	48 x 18			cfm	1116	1674	2232	2790	3348	3906	4468	5022	5580
	60 x 14	36 x 24			NC	—	—	—	20	25	29	33	36	39
6.25	72 x 14	48 x 20			cfm	1250	1875	2500	3125	3750	4375	5000	5625	6250
	60 x 16	30 x 30			NC	—	—	—	20	25	29	33	36	39
									NC 20		NC 30			

Performance Notes

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille. Blanks (—) indicate an NC level below 15.
6. Does not include effects of ceiling radiation damper (10-FR, 10FF-FR).

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

530FF / 535FF – Steel
630FF / 635FF – Aluminum

Models

Steel Construction

3/4 in. [19] Blade Spacing	**530FF**
1/2 in. [13] Blade Spacing	**535FF**

Aluminum Construction

3/4 in. [19] Blade Spacing	**630FF**
1/2 in. [13] Blade Spacing	**635FF**

Application

- Intended to be incorporated into a conveniently serviceable air filtration system.
- Accepts standard 1 in. [25] or 2 in. [51] filter media.
- Designed for recirculating air systems such as fan powered induction terminals, fan coils and heat pumps.
- Constructed to match in detail 500/600 Series grilles (page D15).

Construction

- Formed steel (500FF) or aluminum (600FF) blades, borders and mounting frame with hemmed edge.
- 45° deflection blades.
- Borders and frames are of all-welded construction with reinforced mitered corners.
- Hinge-tab mechanism allows hinging or removal of grille from the filter frame for cleaning (500FF only).
- Hinged one side with 1/4 turn quick-release fasteners. Also avaliable with 1/4 turn fasteners only.

For Fire-Rated applications please see D49.

Mounting / Finish Options

Border Style

Surface Mount	**SM**
Lay-in Inverted 1 in. [25] T	**TB**
Lay-in panel (500FF only)	**3P**
Narrow Member (500FF only)	**17**

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**
Short Dimension	

Finish

White Powder Coat	**B12**

For optional and special finishes see color matrix.

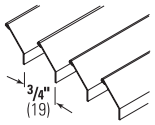
Available Sizes

Minimum	Maximum*
8 in. x 4 in. [203 x 102]	**48 in. x 48 in.** [1219 x 1219]

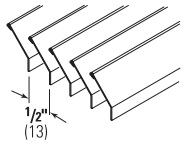
* One-piece

3/4 in. [19] Blade Spacing, 45° Deflection 530FF / 630FF

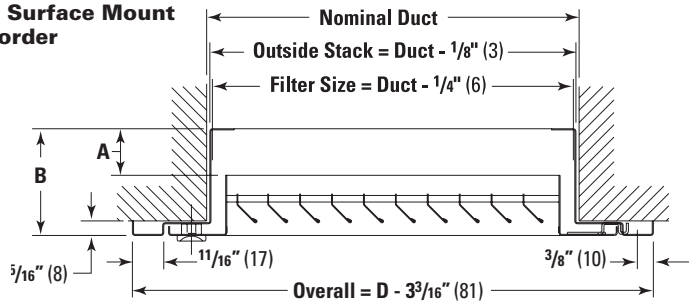
Core Styles
530/L 530/S
630/L 630/S



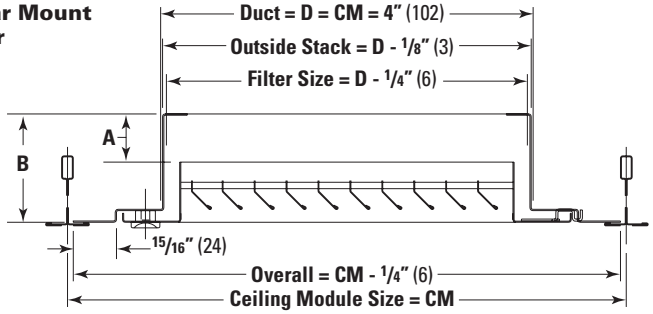
535/L 535/S
635/L 635/S



530FF Surface Mount
SM Border



530FF T-bar Mount
TB Border



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, material).
3] Select Border Style according to installation requirements.
4] Select Blade Orientation.
5] Select Module Size if TB border is selected.
6] Select Finish.

Example: 24 in. x 24 in. / 530FF / SM / L / B12
20 in. x 20 in. / 535FF /TB / L / 24 in. x 24 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

530FF / 535FF – Steel
630FF / 635FF – Aluminum

530FF/535FF available sizes

Surface Mount:

Min Size: 8 in. x 4 in. [203 x 102]
Max Size: 48 in. x 48 in. [1219 x 1219]
Offered in 1 in. increments

T-bar Lay-in Mount and Style 17:

12 in. x 12 in. [305 x 305]
24 in. 12 in. [610 x 305]
24 in. x 24 in. [610 x 610]
48 in. x 24 in. [1219 x 610]

T-bar Panel Mount (3P):

Panel size 24 in. x 24 in. [610x610]:
Min inlet 6 in. x 6 in. [152x152],
Max inlet 18 in. x 18 in. [457 x 457].
Panel Size 48 in. x 24 in. [1219x610]:
Min inlet size 6 in. x 6 in. [152x152],
Max inlet size 42 in. x 18 in. [1067 x 457].

630FF/635FF available sizes

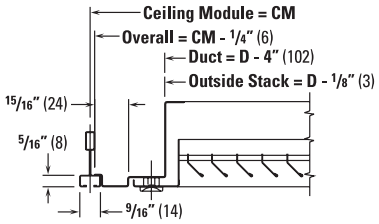
Surface Mount:

Min Size: 8 in. x 4 in. [203 x 102]
Max Size: 48 in. x 48 in. [1219 x 1219]
Offered in 1 in. increments

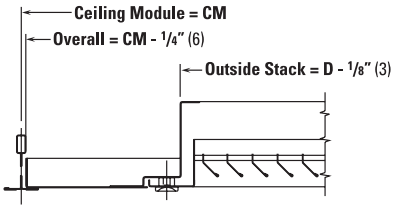
T-bar Lay-in Mount and Style 17:

12 in. x 12 in. [305 x 305]
24 in. 12 in. [610 x 305]
24 in. x 24 in. [610 x 610]
48 in. x 24 in. [1219 x 610]
48 in. 48 in. [1219 x 1219]

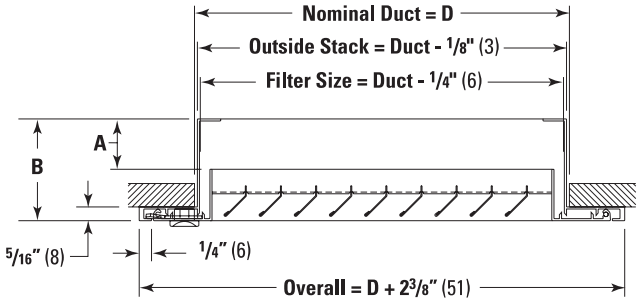
TB Border 17



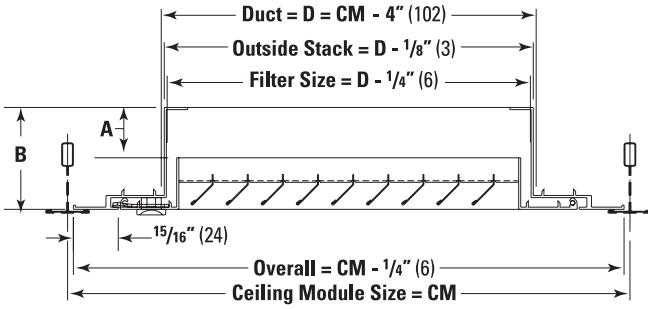
3P



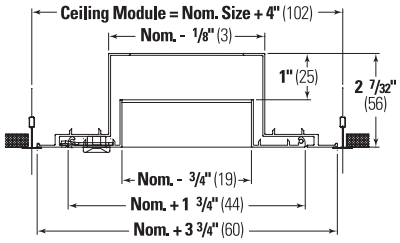
630FF
Surface Mount



TB T-bar



TB Border 630 FF



Dimensioning Schedule

Filter Size	A	B
1 in.	1 in. [25]	2 3/16 in. [56]
2 in.	2 in. [51]	3 3/16 in. [81]

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Fire-Rated Louvered Face Filter Return
500FF-FR Series

Product Information

Three Hour Rating - Lay-in Models

¾ in. [19] Blade Spacing **530FF-FR**
½ in. [10] Blade Spacing **535FF-FR**

Price 500FF-FR Series return grilles and registers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

The **500FF-FR** return grilles and registers are intended to be incorporated into conveniently serviceable filtration systems where an exposed grid suspended ceiling (T-bar Lay-in) with up to a three hour rating or less is used. They are designed for recirculating air systems such as fan powered induction terminals, fan coils and heat pumps. They accept standard 1 in. [25] filter media and match and complement the Price 500 Series supply grilles.

Features

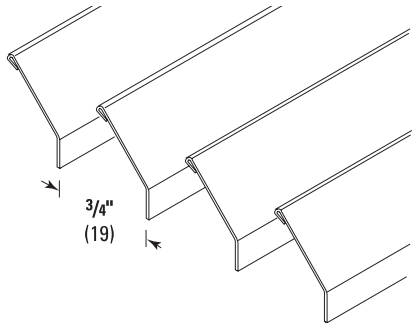
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Formed Steel Construction - blades and frames.
- Frames are all-welded construction.
- Choice of blade orientation.
  Front blades parallel to long dimension. **L**
  Front blades parallel to short dimension. **S**
- Louvered blades are fixed at 45 degree deflection to minimize see-through.
- Two blade spacings are available to suit performance and architectural considerations.
- Finished to Price standards.
- Hinge-tab mechanism allows hinging and removal of grille from the filter frame for easy cleaning.
- ¼ turn quick-release fasteners.
- Removable face and filter allows access for adjustment of Optional Volume Controller (Allen key adjustable).

Finish

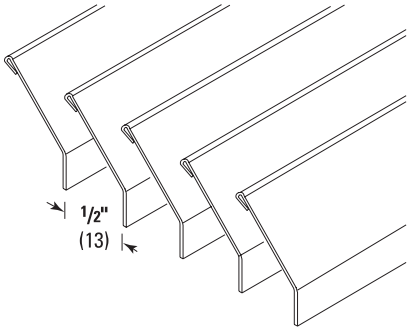
White Powder Coat **B12**

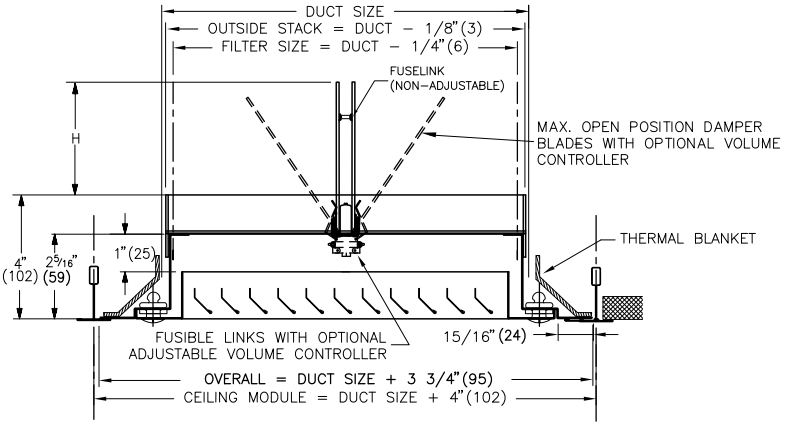
For optional and special finishes see color matrix.

530FF-FR Fixed Louvers, 45° Deflection, ¾ in. [19] Blade Spacing



535FF-FR Fixed Louvers, 45° Deflection, ½ in. [13] Blade Spacing





Available Module Sizes

Imperial	Metric
24 in. x 24 in.	[610 x 610]
24 in. x 12 in.	[610 x 305]
12 in. x 12 in.	[305 x 305]

* No oversized grilles

✓ Product Selection Checklist

1] Select Module Size.
2] Select Blade Orientation.
3] Select Outlet Type by model number.
4] Select Finish.

Example: 24 in. x 24 in. / 535FF-FR / L / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Stainless Steel Louvered Face Filter Return
700FF Series

Product Information

Models

45 Degree Deflection

3/4 in. [19] Blade Spacing	**730FF**
1/2 in. [13] Blade Spacing	**735FF**

Application

- Intended to be incorporated into a conveniently serviceable return air filtration system.
- Designed to accept a standard 1 in. [25] filter media.
- Especially suited to air systems operating in extremely humid or corrosive environments.
- Construction matches and compliments the 700 Series grilles found on page D18.

Construction

- Formed stainless steel blades, borders and mounting frame.
- 45 degree deflection blades, borders and frames are of all-welded construction with reinforced mitered corners.
- 1/4 turn quick-release fasteners.

Mounting / Finish Options

Border Style

Surface Mount	**SM**
Lay-in Inverted 1 in. [25]T	**TB**

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**

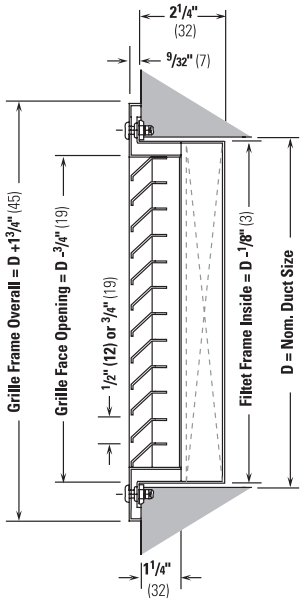
Finish

Border	**#4**
Blades	**2B**

Available Sizes

Minimum	Maximum
6 in. x 4 in. [152 x 102]	**48 in. x 48 in.** [1219 x 1219]

Grille sizes increase in 1 in. [25] increments.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Border Style according to installation requirements.
4] Select Blade Orientation.

Example: 24 x 12 / 730FF / SM / L

GRILLES AND REGISTERS

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

80FF / 10FF Series

Product Information

Models

Eggcrate Face Filter Return	**80FF**
Perforated Face Filter Return	**10FF**
Aluminum Perforated Face Filter Return	**10AFF**

Application

- Intended to be incorporated into a conveniently serviceable air filtration system.
- Accepts standard 1 in. [25] or 2 in. [51] filter media.
- Designed for recirculating air systems such as fan powered induction terminals, fan coils and heat pumps.
- Constructed to match in detail 80 / 10 Series grilles (pages D39 and D42).

Construction

- Formed steel borders and mounting frame (10FF/80FF).
- Extruded aluminum frame and aluminum perf (10AFF).
- 80FF Core: 1/2 in. x 1/2 in. x1/2 in. [13 x 13 x 13] aluminum grid.
  10FF Core: steel with 3/16 in. [5] holes on 1/4 in. [6] centers staggered 60°.
- Borders and frames are of all-welded construction with reinforced mitered corners.
- Hinge-tab mechanism allows hinging or removal of grille from the filter frame for cleaning.
- Hinged one side with 1/4 turn quick-release fasteners. Also avaliable with 1/4 turn fasteners only.

For Fire-Rated applications please see D40.

Mounting / Finish Options

Border Style

Surface Mount	**SM**
Lay-in Inverted 1 in. [25]T	**TB**
Lay-in panel	**3P**
Narrow Member	**17**

Finish

White Powder Coat	**B12**

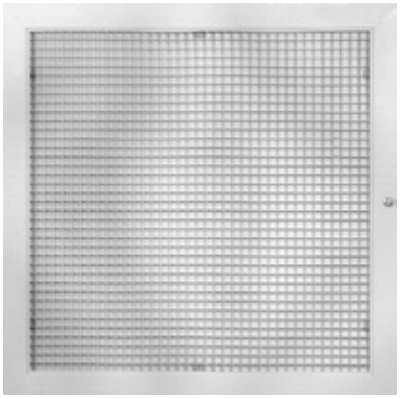
For optional and special finishes see color matrix.

Available Sizes

Minimum	Maximum*
8 in. x 4 in. [203 x 102]	**48 in. x 24 in.** [1219 x 610]

* One-piece

Eggcrate Face 80FF



10FF/10AFF/80FF available sizes

Surface Mount:

Min Size: 8 in. x 4 in. [203 x 102]
Max Size: 48 in. x 24 in. [1219 x 610]
Offered in 1 in. increments

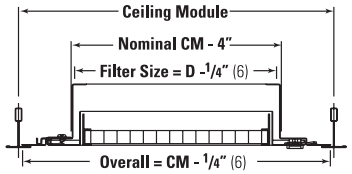
T-bar Lay-in Mount and Style 17:

12 in. x 12 in. [305 x 305]
24 in. 12 in. [610 x 305]
24 in. x 24 in. [610 x 610]
48 in. x 24 in. [1219 x 610]

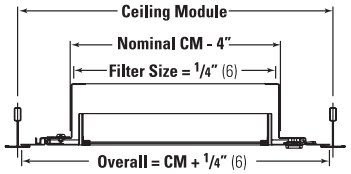
T-bar Panel Mount (3P):

Panel size 24 in. x 24 in. [610x610]:
Min inlet 6 in. x 6 in. [152x152],
Max inlet 18 in. x 18 in. [457 x 45].
Panel Size 48 in. x 24 in. [1219x610]:
Min inlet size 6 in. x 6 in. [152x152],
Max inlet size 42 in. x 18 in. [1067 x 457].

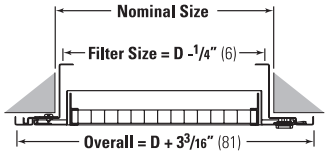
80FF TB Border



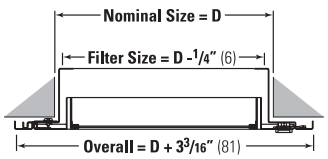
10FF TB Border



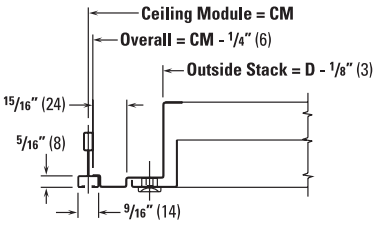
80FF SM Border



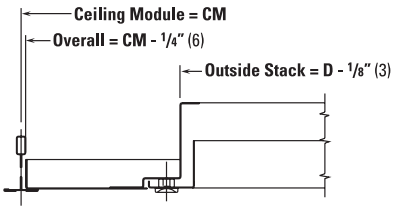
10FF SM Border



80FF 17 Border



80FF 3P Border



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, material).
3] Select Border Style according to installation requirements.
4] Select Module Size if TB border is selected.
5] Select Finish.

Example: 24 in. x 24 in. / 80FF / SM / B12
24 in. x 24 in. / 10FF /TB / / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Fire-Rated Eggcrate / Perforated Face Filter Return
80FF-FR / 10FF-FR Series

Product Information

Three Hour Rating - Lay-in Models

Grille-Eggcrate Face Filter ½ in. x ½ in. x ½ in.	**80FF-FR**
Grille-Eggcrate Face Filter ½ in. x ½ in. x 1 in.	**81FF-FR**
Grille-Eggcrate Face Filter 1 in. x 1 in. x 1 in.	**82FF-FR**
Grille-Perforated Face Filter	**10FF-FR**

Price 80FF-FR / 10FF-FR Series return grilles and registers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory).This design meets time versus temperature test criteria and NFPA 90A requirements.

The **80FF-FR** and **10FF-FR** return grilles and registers are intended to be incorporated into conveniently serviceable filtration systems where an exposed grid suspended ceiling (T-bar Lay-in) with up to a three hour rating or less is used. They are designed for recirculating air systems such as fan powered induction terminals, fan coils and heat pumps. They accept standard 1 in. [25] filter media and match and complement the Price 80 Series and 10 Series grilles and registers.

Features

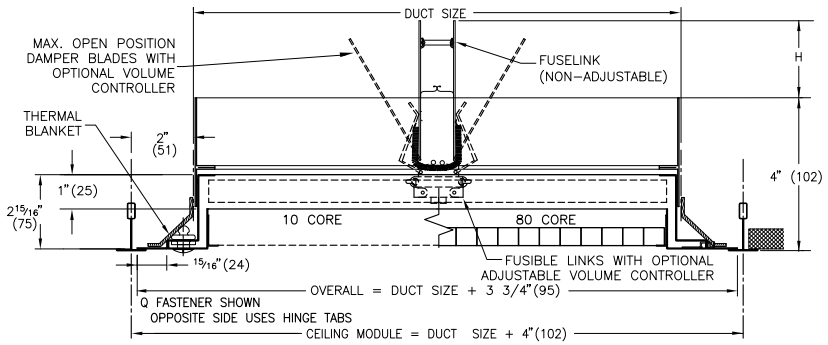
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Frame is of steel construction.
- 80FF-FR Core: ½ in. x ½ in. x ½ in. [13 x 13 x 13] aluminum grid.
- 81FF-FR Core: ½ in. x ½ in. x 1 in. [13 x 13 x 25] stacked aluminum grid.
- 82FF-FR Core: 1 in. x 1 in. x 1 in. [25 x 25 x 25] aluminum grid.
- 10FF-FR Core: steel with 3/16 in. [5] holes on ¼ in. [6] centers staggered 60°.
- Frames are of all-welded construction.
- Hinge-tab mechanism allows hinging or removal of grille from the filter frame for cleaning.
- ¼ turn quick-release fasteners.
- Removable face and filter allow access for adjustment of Optional Volume Controller (Allen key adjustable).
- Available in 81FF-FR ½ in. stacked core to make up 1 in. core 82FF-FR 1 in. core.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

TB Border



Note: H = 4 in., assuming 1 in. filter thickness and non-adjustable damper. Add 1 in. for adjustable damper.

Available Module Sizes

Imperial	Metric
24 in. x 24 in.	[610 x 610]
24 in. x 12 in.	[610 x 305]
12 in. x 12 in.	[305 x 305]

* No oversized grilles

✓ Product Selection Checklist

1] Select Module Size. (Note: maximum duct size = module size-4 in. [102].
2] Select Outlet Type by model number.
3] Select Finish.

Example: 24 in. x 24 in. / 10FF-FR / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Heavy Gauge Steel Models

3/8 in. [10] Blade Spacing
0° Deflection **90**
45° Deflection **91**

1/2 in. [13] Blade Spacing
45° Deflection **93**

3/4 in. [19] Blade Spacing
0° Deflection **95**
45° Deflection **96**

Application

- Specifically designed for severe applications such as gymnasiums, factories, warehouses, public washrooms, heavy traffic corridors and any general public area.

Construction

- Four Core styles of heavy 14 gauge steel available.
- Heavy gauge 1 1/4 in. [32] flat steel border. Smooth contours reduce the possibility of injury to athletes when used in a gymnasium.
- Optional opposed blade damper in coated steel construction.

Mounting / Finish Options

Blade Orientation
Blades parallel to Long Dimension **L**
Blades parallel to Short Dimension **S**

Optional Mounting Frame **D**

Fastening
Countersunk screwholes c/w oval-head screws **A**
Concealed (n/a on Model 91) **C**

Finish
White Powder Coat **B12**

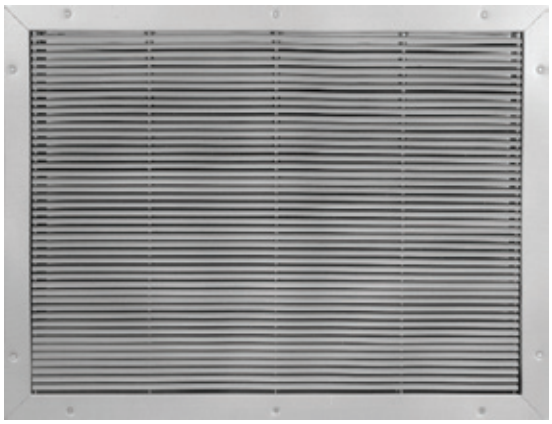
For optional and special finishes see color matrix.

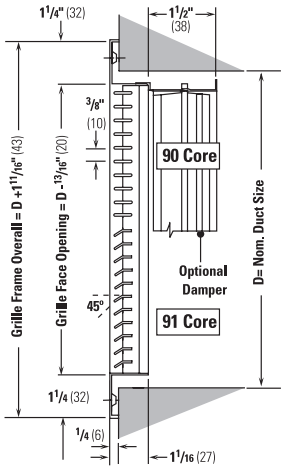
Available Sizes

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**48 in. x 48 in.** [1219 x 1219]

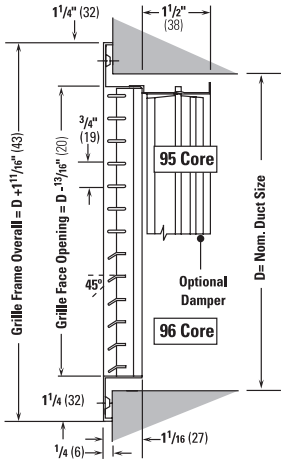
* One-piece

Model 91





Model 96



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Blade Orientation.
4] Select Mounting Frame if desired.
5] Select Fastening Type (A is standard).
6] Select Finish.

Example: 24 in. x 24 in. / 95D / L / A / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Heavy Gauge Steel Models

3/8 in. [10] Blade Spacing, 0° Deflection Grille	**90FH**
3/8 in. [10] Blade Spacing, 45° Deflection Grille	**91FH**
3/4 in. [19] Blade Spacing, 0° Deflection Grille	**95FH**
3/4 in. [19] Blade Spacing, 45° Deflection Grille	**96FH**

Application

- Specifically designed to be incorporated into a conveniently serviceable return air filtration system for severe applications such as gymnasiums, factories, warehouses, public washrooms,heavy traffic corridors and any general public area.
- Accepts standard 1 in. [25] and 2 in. [50] filter media.
- Wall mount only

Construction

- Four Core styles of heavy 14 gauge steel available.
- Heavy gauge 1 1/4 in. [32] flat steel border. Smooth contours reduce the possibility of injury to athletes when used in a gymnasium.

Mounting / Finish Options

Blade Orientation

Blades parallel to Long Dimension	**L**
Blades parallel to Short Dimension	**S**
Optional Mounting Frame	**D**

Finish

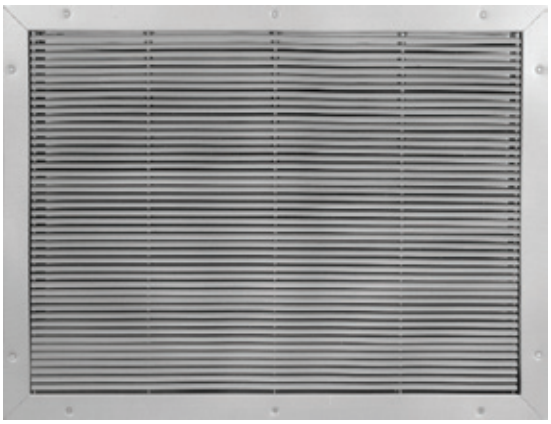
White Powder Coat	**B12**

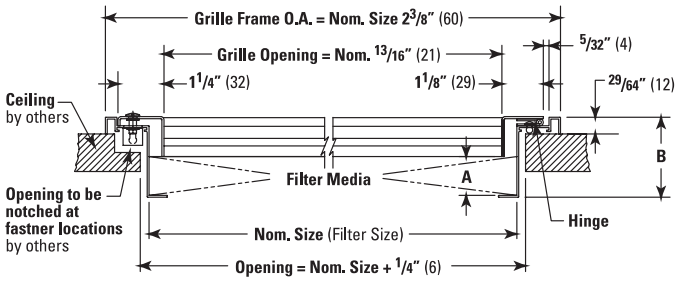
For optional and special finishes see color matrix.

Available Sizes

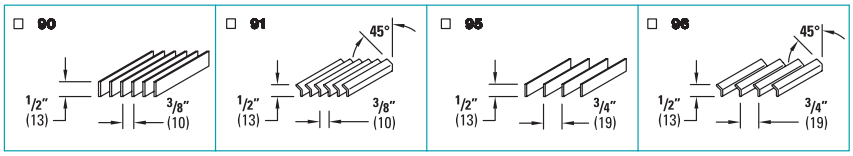
Minimum	Maximum	Maximum
6 in. x 4 in. [152 x 102]	**36 in. x 24 in.** [914 x 610] with hinge * One-piece	**48 in. x 48 in.** [1219 x 1219] w/fasteners on all four sides * One-piece

Model 91FH



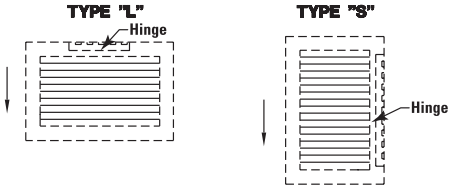


Core Styles



Hinge Orientaion - Front View

(For 91 & 96 Grilles, Blade Deflection Shown by Arrow)



Dimensional Schedule

Filter Size	A	B
1 in.	1 in. [25]	211/64 in. [55]
1 in.	1 in. [25]	211/64 in. [55]

Filter Size

1 in. Filter Frame Accepts 1 in. Filter
2 in. Filter Frame Accepts 2 in. Filter

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Blade Orientation.
4] Select Finish.

Example: 24 in. x 24 in. / 95D / L / A / B12.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 3/8 in. blade spacing, 0° deflection steel

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	400 .010 .024	500 .016 .038	600 .022 .052	700 .031 .074	800 .040 .095	900 .050 .119	1000 .062 .147	1100 .075 .178	1200 .090 .213	1400 .122 .289
						NC 20				30			40		
0.15	7 x 4				cfm	60	75	90	105	120	135	150	165	180	210
	6 x 5				NC	—	—	20	25	29	33	37	40	43	48
0.18	8 x 4	6 x 6			cfm	72	90	108	126	144	162	180	198	216	252
	7 x 5				NC	—	—	20	25	29	33	37	40	43	48
0.22	10 x 4	7 x 6			cfm	88	110	132	154	176	198	220	242	264	308
	8 x 5				NC	—	15	21	26	30	34	38	41	44	49
0.26	12 x 4	8 x 6			cfm	104	130	156	182	208	234	260	286	312	364
	10 x 5				NC	—	15	21	26	31	35	38	41	44	50
0.30	14 x 4				cfm	120	150	180	210	240	270	300	330	360	420
					NC	—	15	21	27	31	35	39	42	45	50
0.34	16 x 4	10 x 6			cfm	136	170	204	238	272	306	340	374	408	476
	12 x 5				NC	—	15	22	27	31	35	39	42	45	50
0.39	18 x 4	12 x 6			cfm	156	195	234	273	312	351	390	429	468	546
	14 x 5	8 x 8			NC	—	16	22	27	31	35	39	42	45	50
0.46	20 x 4	14 x 6			cfm	184	230	276	322	368	414	460	506	552	644
	16 x 5	10 x 8			NC	—	17	23	28	32	36	40	43	46	51
0.52	24 x 4	16 x 6			cfm	208	260	312	364	416	468	520	572	624	728
	18 x 5				NC	—	17	23	28	32	36	40	43	46	51
0.60	28 x 4	18 x 6	10 x 10		cfm	240	300	360	420	480	540	600	660	720	840
	20 x 5	12 x 8			NC	—	18	24	29	33	37	41	44	47	52
0.69	30 x 4	20 x 6	12 x 10		cfm	276	345	414	483	552	621	690	759	828	966
	24 x 5	14 x 8			NC	—	18	24	29	33	37	41	44	47	52
0.81	36 x 4	22 x 6	14 x 10		cfm	324	405	486	567	648	729	810	891	972	1134
	28 x 5	16 x 8			NC	—	18	24	29	33	37	41	44	47	52
0.90	40 x 4	26 x 6	16 x 10		cfm	360	450	540	630	720	810	900	990	1080	1260
	30 x 5	18 x 8	12 x 12		NC	—	19	25	30	34	38	42	45	48	53
1.07	48 x 4	30 x 6	14 x 12		cfm	428	535	642	749	856	963	1070	1177	1284	1498
	36 x 5	18 x 10			NC	—	19	25	30	34	38	42	45	48	53
1.18	34 x 6	20 x 10	14 x 14		cfm	472	590	708	826	944	1062	1180	1298	1416	1652
	24 x 8	16 x 12			NC	—	19	25	30	34	38	42	45	48	53
1.34	60 x 4	36 x 6	16 x 14		cfm	536	670	804	938	1072	1206	1340	1474	1608	1876
	48 x 5	18 x 12			NC	—	20	26	31	35	39	43	46	49	54
1.60	72 x 4	24 x 10	18 x 14		cfm	640	800	960	1120	1280	1440	1600	1760	1920	2240
	30 x 8	22 x 12	16 x 16		NC	—	20	26	31	35	39	43	46	49	54
1.80	60 x 5	36 x 8	24 x 12	18 x 16	cfm	720	900	1080	1260	1440	1620	1800	1980	2160	2520
	48 x 6	30 x 10	20 x 14		NC	—	21	27	32	36	40	44	47	50	55
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	832	1040	1248	1456	1664	1872	2080	2288	2496	2912
	60 x 6	36 x 10	24 x 14	18 x 18	NC	—	21	27	32	36	40	44	47	50	55
2.45	72 x 6	32 x 12	24 x 16		cfm	980	1225	1470	1715	1960	2205	2450	2695	2940	3430
	48 x 8	26 x 14	20 x 18		NC	—	22	28	33	37	41	45	48	51	56
2.78	36 x 12	26 x 16	22 x 20		cfm	1112	1390	1668	1946	2224	2502	2780	3058	3336	3892
	30 x 14	24 x 18			NC	—	22	28	33	37	41	45	48	51	56
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	1244	1555	1866	2177	2488	2799	3110	3421	3732	4354
	48 x 10	36 x 14	26 x 18		NC	—	22	28	33	37	41	45	48	51	56
3.61	72 x 8	48 x 12	30 x 18		cfm	1444	1805	2166	2527	2888	3249	3610	3971	4332	5054
	60 x 10	36 x 16	24 x 24		NC	15	23	29	34	38	42	46	49	52	57
4.29	48 x 14	32 x 20			cfm	1716	2145	2574	3003	3432	3861	4290	4719	5148	6006
	36 x 18	28 x 24			NC	15	23	29	34	38	42	46	49	52	57
4.65	72 x 10	36 x 20			cfm	1860	2325	2790	3255	3720	4185	4650	5115	5580	6510
	48 x 16	30 x 24			NC	15	23	29	34	38	42	46	49	52	57
5.58	72 x 12	48 x 18			cfm	2232	2790	3348	3906	4464	5022	5580	6138	6696	7812
	60 x 14	36 x 24			NC	16	24	30	35	39	43	47	50	53	58
6.25	72 x 14	48 x 20			cfm	2500	3125	3750	4375	5000	5625	6250	6875	7500	8750
	60 x 16	30 x 30			NC	16	24	30	35	39	43	47	50	53	58
						NC 20		30		40			50		

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.83.
   — Subtract 4 from listed NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 3/8 in. blade spacing, 45° deflection steel

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 .002 .017	250 .004 .026	300 .006 .038	350 .008 .051	400 .010 .067	500 .016 .104	600 .022 .150	700 .030 .205	800 .040 .267	900 .050 .338
						NC 20				30		40			
.15	7 x 4				cfm	30	37	45	52	60	75	90	105	120	135
	6 x 5				NC	—	17	21	25	28	33	37	41	44	47
.18	8 x 4	6 x 6			cfm	36	45	54	63	72	90	108	126	144	162
	7 x 5				NC	—	18	22	26	29	34	38	42	45	48
.22	10 x 4	7 x 6			cfm	44	55	66	77	88	110	132	154	176	198
	8 x 5				NC	—	18	22	26	29	34	38	42	45	48
.26	12 x 4	8 x 6			cfm	50	65	78	91	104	130	156	182	208	234
	10 x 5				NC	—	19	23	27	30	35	39	43	46	49
.30	14 x 4				cfm	60	75	90	105	120	150	180	210	240	270
					NC	—	19	23	27	30	35	39	43	46	49
.34	16 x 4	10 x 6			cfm	68	85	102	119	136	170	204	238	272	306
	12 x 5				NC	—	19	23	27	30	35	39	43	46	49
.39	18 x 4	12 x 6			cfm	78	98	117	137	156	195	234	273	312	351
	14 x 5	8 x 8			NC	15	20	24	28	31	36	40	44	47	50
.46	20 x 4	14 x 6			cfm	92	115	138	161	184	230	276	322	368	414
	16 x 5	10 x 8			NC	15	20	24	28	31	36	40	44	47	50
.52	24 x 4	16 x 6			cfm	104	130	156	182	208	260	312	364	416	468
	18 x 5				NC	15	20	24	28	31	36	40	44	47	50
.60	28 x 4	18 x 6	10 x 10		cfm	120	150	180	210	240	300	360	420	480	540
	20 x 5	12 x 8			NC	16	21	25	29	32	37	41	45	48	51
.69	30 x 4	20 x 6	12 x 10		cfm	138	173	207	242	276	345	414	483	552	621
	24 x 5	14 x 8			NC	16	21	25	29	32	37	41	45	48	51
.81	36 x 4	22 x 6	14 x 10		cfm	162	202	242	283	324	405	486	567	648	729
	28 x 5	16 x 8			NC	16	21	25	29	32	37	41	45	48	51
.90	40 x 4	26 x 6	16 x 10		cfm	180	225	270	315	360	450	540	630	720	810
	30 x 5	18 x 8	12 x 12		NC	17	22	26	30	33	38	42	46	49	52
1.07	48 x 4	30 x 6	14 x 12		cfm	214	267	321	374	428	535	642	749	856	963
	36 x 5	18 x 10			NC	17	22	26	30	33	38	42	46	49	52
1.18	34 x 6	20 x 10	14 x 14		cfm	236	295	354	413	472	590	708	826	944	1062
	24 x 8	16 x 12			NC	17	22	26	30	33	38	42	46	49	52
1.34	60 x 4	36 x 6	16 x 14		cfm	268	335	402	469	536	670	804	938	1072	1206
	48 x 5	18 x 12			NC	18	23	27	31	34	39	43	47	50	53
1.60	72 x 4	24 x 10	18 x 14		cfm	320	400	480	560	640	800	960	1120	1280	1440
	30 x 8	22 x 12	16 x 16		NC	18	23	27	31	34	39	43	47	50	53
1.80	60 x 5	36 x 8	24 x 12	18 x 16	cfm	360	450	540	630	720	900	1080	1260	1440	1620
	48 x 6	30 x 10	20 x 14		NC	18	23	27	31	34	39	43	47	50	53
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	416	520	624	728	832	1040	1248	1456	1664	1872
	60 x 6	36 x 10	24 x 14	18 x 18	NC	19	24	28	32	35	40	44	48	51	54
2.45	72 x 6	32 x 12	24 x 16		cfm	490	612	735	857	980	1225	1470	1715	1960	2205
	48 x 8	26 x 14	20 x 18		NC	19	24	28	32	35	40	44	48	51	54
2.78	36 x 12	26 x 16	22 x 20		cfm	556	695	834	973	1112	1390	1668	1946	2224	2502
	30 x 14	24 x 18			NC	20	25	29	33	36	41	45	49	52	55
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	622	777	933	1088	1244	1555	1866	2177	2488	2799
	48 x 10	36 x 14	26 x 18		NC	20	25	29	33	36	41	45	49	52	55
3.61	72 x 8	48 x 12	30 x 18		cfm	722	902	1083	1263	1444	1805	2166	2527	2888	3249
	60 x 10	36 x 16	24 x 24		NC	20	25	29	33	36	41	45	49	52	55
4.29	48 x 14	32 x 20			cfm	858	1072	1287	1501	1716	2145	2574	3003	3432	3861
	36 x 18	28 x 24			NC	21	26	30	34	37	42	46	50	53	56
4.65	72 x 10	36 x 20			cfm	930	1162	1395	1627	1860	2325	2790	3255	3720	4185
	48 x 16	30 x 24			NC	21	26	30	34	37	42	46	50	53	56
5.58	72 x 12	48 x 18			cfm	1116	1395	1674	1953	2232	2790	3348	3906	4464	5022
	60 x 14	36 x 24			NC	21	26	30	34	37	42	46	50	53	56
6.25	72 x 14	48 x 20			cfm	1250	1562	1875	2187	2500	3125	3750	4375	5000	5625
	60 x 16	30 x 30			NC	22	27	31	35	38	43	47	51	54	57
						NC 20		30		40		50			

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.93.
   — Subtract 2 from listed NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 1/2 in. blade spacing, 45° deflection steel

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 .002 .011	250 .004 .017	300 .006 .024	350 .008 .033	400 .010 .043	500 .016 .067	600 .022 .096	700 .030 .131	800 .040 .171	900 .050 .216
.15	7 x 4				cfm	30	38	45	53	60	75	90	105	120	135
	6 x 5				NC	—	—	—	—	—	—	—	17	21	24
.18	8 x 4	6 x 6			cfm	36	45	54	63	72	90	108	126	144	162
	7 x 5				NC	—	—	—	—	—	—	—	18	22	25
.22	10 x 4	7 x 6			cfm	44	55	66	77	88	110	132	154	176	198
	8 x 5				NC	—	—	—	—	—	—	—	19	23	26
.26	12 x 4	8 x 6			cfm	52	65	78	91	104	130	156	182	208	234
	10 x 5				NC	—	—	—	—	—	—	—	16	20	24	27
.30	14 x 4				cfm	60	75	90	105	120	150	180	210	240	270
					NC	—	—	—	—	—	—	—	17	21	25	28
.34	16 x 4	10 x 6			cfm	68	85	102	119	136	170	204	238	272	306
	12 x 5				NC	—	—	—	—	—	—	—	17	22	25	29
.39	18 x 4	12 x 6			cfm	78	98	117	137	156	195	234	273	312	351
	14 x 5	8 x 8			NC	—	—	—	—	—	—	—	18	22	26	30
.40	20 x 4	14 x 6			cfm	80	100	120	140	160	200	240	280	320	360
	16 x 5	10 x 8			NC	—	—	—	—	—	—	—	18	23	26	30
.52	24 x 4	16 x 6			cfm	104	130	156	182	208	260	312	364	416	468
	18 x 5				NC	—	—	—	—	—	—	—	20	24	28	31
.60	28 x 4	18 x 6	10 x 10		cfm	120	150	180	210	240	300	360	420	480	540
	20 x 5	12 x 8			NC	—	—	—	—	—	15	20	25	29	32
.69	30 x 4	20 x 6	12 x 10		cfm	138	173	207	242	276	345	414	483	552	621
	24 x 5	14 x 8			NC	—	—	—	—	—	16	21	26	29	33
.81	36 x 4	22 x 6	14 x 10		cfm	162	203	243	284	324	405	486	567	648	729
	28 x 5	16 x 8			NC	—	—	—	—	—	17	22	27	30	34
.90	40 x 4	26 x 6	16 x 10		cfm	180	225	270	315	360	450	540	630	720	810
	30 x 5	18 x 8	12 x 12		NC	—	—	—	—	—	18	23	27	31	34
1.07	48 x 4	30 x 6	14 x 12		cfm	214	268	321	375	428	535	642	749	856	963
	36 x 5	18 x 10			NC	—	—	—	—	—	19	24	28	32	35
1.18	34 x 6	20 x 10	14 x 14		cfm	236	295	354	413	472	590	708	826	944	1062
	24 x 8	16 x 12			NC	—	—	—	—	—	19	24	29	33	36
1.34	60 x 4	36 x 6	16 x 14		cfm	268	335	402	469	536	670	804	938	1072	1206
	48 x 5	18 x 12			NC	—	—	—	—	—	20	25	29	33	37
1.60	72 x 4	24 x 10	18 x 14		cfm	320	400	480	560	640	800	960	1120	1280	1440
	30 x 8	22 x 12	16 x 16		NC	—	—	—	—	—	21	26	30	34	38
1.80	60 x 5	36 x 8	24 x 12	18 x 16	cfm	360	450	540	630	720	900	1080	1260	1440	1620
	48 x 6	30 x 10	20 x 14		NC	—	—	—	—	15	22	27	31	35	38
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	416	520	624	728	832	1040	1248	1456	1664	1872
	60 x 6	36 x 10	24 x 14	18 x 18	NC	—	—	—	—	16	22	28	32	36	39
2.45	72 x 6	32 x 12	24 x 16		cfm	490	613	735	858	980	1225	1470	1715	1960	2205
	48 x 8	26 x 14	20 x 18		NC	—	—	—	—	17	23	29	33	37	40
2.78	36 x 12	26 x 16	22 x 20		cfm	556	695	834	973	1112	1390	1668	1946	2224	2502
	30 x 14	24 x 18			NC	—	—	—	—	18	24	29	34	37	41
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	622	778	933	1089	1244	1555	1866	2177	2488	2799
	48 x 10	36 x 14	26 x 18		NC	—	—	—	—	18	25	30	34	38	41
3.61	72 x 8	48 x 12	30 x 18		cfm	722	903	1083	1264	1444	1805	2166	2527	2888	3249
	60 x 10	36 x 16	24 x 24		NC	—	—	—	15	19	26	31	35	39	42
4.29	48 x 14	32 x 20			cfm	858	1073	1287	1502	1716	2145	2574	3003	3432	3861
	36 x 18	28 x 24			NC	—	—	—	16	20	27	32	36	40	43
4.65	72 x 10	36 x 20			cfm	930	1163	1395	1628	1860	2325	2790	3255	3720	4185
	48 x 16	30 x 24			NC	—	—	—	17	21	27	32	37	40	44
5.58	72 x 12	48 x 18			cfm	1116	1395	1674	1953	2232	2790	3348	3906	4464	5022
	60 x 14	36 x 24			NC	—	—	—	18	22	28	33	38	41	45
6.25	72 x 14	48 x 20			cfm	1250	1563	1875	2188	2500	3125	3750	4375	5000	5625
	60 x 16	30 x 30			NC	—	—	—	18	22	29	34	38	42	45

NC 20 — 30 — 40

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.93.
   — Subtract 2 from listed NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 3/4 in. blade spacing, 0° deflection steel

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	400 .010 .018	500 .016 .029	600 .022 .041	700 .031 .056	800 .040 .073	900 .051 .092	1000 .062 .114	1100 .075 .138	1200 .090 .164	1400 .122 .224
						NC 20						30		40	
.15	7 x 4				cfm	60	75	90	105	120	135	150	165	180	210
	6 x 5				NC	—	—	—	18	23	27	30	34	37	42
.18	8 x 4	6 x 6			cfm	72	90	108	126	144	162	180	198	216	252
	7 x 5				NC	—	—	—	19	23	27	31	34	37	43
.22	10 x 4	7 x 6			cfm	88	110	132	154	176	198	220	242	264	308
	8 x 5				NC	—	—	—	19	24	28	31	35	38	43
.26	12 x 4	8 x 6			cfm	104	130	156	182	208	234	260	286	312	364
	10 x 5				NC	—	—	—	19	24	28	32	35	38	44
.30	14 x 4				cfm	120	150	180	210	240	270	300	330	360	420
					NC	—	—	15	20	25	29	32	36	39	44
.34	16 x 4	10 x 6			cfm	136	170	204	238	272	306	340	374	408	476
	12 x 5				NC	—	—	15	20	25	29	33	36	39	44
.39	18 x 4	12 x 6			cfm	156	195	234	273	312	351	390	429	468	546
	14 x 5	8 x 8			NC	—	—	15	21	25	29	33	36	39	45
.46	20 x 4	14 x 6			cfm	184	230	276	322	368	414	460	506	552	644
	16 x 5	10 x 8			NC	—	—	16	21	26	30	33	37	40	45
.53	24 x 4	16 x 6			cfm	208	260	312	364	416	468	520	572	624	728
	18 x 5				NC	—	—	16	21	26	30	34	37	40	45
.60	28 x 4	18 x 6	10 x 10		cfm	240	300	360	420	480	540	600	660	720	840
	20 x 5	12 x 8			NC	—	—	16	22	26	30	34	37	40	46
.69	30 x 4	20 x 6	12 x 10		cfm	276	345	414	483	552	621	690	759	828	966
	24 x 5	14 x 8			NC	—	—	17	22	27	31	34	38	41	46
.81	36 x 4	24 x 6	14 x 10		cfm	324	405	486	567	648	729	810	891	972	1134
	28 x 5	16 x 8			NC	—	—	17	22	27	31	35	38	41	47
.90	40 x 4	26 x 6	16 x 10		cfm	360	450	540	630	720	810	900	990	1080	1260
	30 x 5	18 x 8	12 x 12		NC	—	—	17	23	27	31	35	38	41	47
1.07	48 x 4	30 x 6	14 x 12		cfm	428	535	642	749	856	963	1070	1177	1284	1498
	36 x 5	18 x 10			NC	—	—	18	23	28	32	36	39	42	47
1.18	34 x 6	20 x 10	14 x 14		cfm	472	590	708	826	944	1062	1180	1298	1416	1652
	24 x 8	16 x 12			NC	—	—	18	23	28	32	36	39	42	48
1.34	60 x 4	36 x 6	16 x 14		cfm	536	670	804	938	1072	1206	1340	1474	1608	1876
	48 x 5	18 x 12			NC	—	—	18	24	28	33	36	39	42	48
1.60	72 x 4	24 x 10	18 x 14		cfm	640	800	960	1120	1280	1440	1600	1760	1920	2240
	30 x 8	22 x 12	16 x 16		NC	—	—	19	24	29	33	37	40	43	48
1.80	60 x 5	36 x 8	24 x 12	18 x 16	cfm	720	900	1080	1260	1440	1620	1800	1980	2160	2520
	48 x 6	30 x 10	20 x 14		NC	—	—	19	25	29	33	37	40	43	49
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	832	1040	1248	1456	1664	1872	2080	2288	2496	2912
	60 x 6	36 x 10	24 x 14	18 x 18	NC	—	—	20	25	30	34	37	41	44	49
2.45	72 x 6	32 x 12	24 x 16		cfm	980	1225	1470	1715	1960	2205	2450	2695	2940	3430
	48 x 8	26 x 14	20 x 18		NC	—	—	20	25	30	34	38	41	44	49
2.78	36 x 12	26 x 16	22 x 20		cfm	1112	1390	1668	1946	2224	2502	2780	3058	3336	3892
	30 x 14	24 x 18			NC	—	—	20	26	30	34	38	41	44	50
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	1244	1555	1866	2177	2488	2799	3110	3421	3732	4354
	48 x 10	36 x 14	26 x 18		NC	—	—	21	26	31	35	38	42	45	50
3.61	72 x 8	48 x 12	30 x 18		cfm	1444	1805	2166	2527	2888	3249	3610	3971	4332	5054
	60 x 10	36 x 16	24 x 24		NC	—	15	21	26	31	35	39	42	45	50
4.29	48 x 14	32 x 20			cfm	1716	2145	2574	3003	3432	3861	4290	4719	5148	6006
	36 x 18	28 x 24			NC	—	15	21	27	31	36	39	43	46	51
4.65	72 x 10	36 x 20			cfm	1860	2325	2790	3255	3720	4185	4650	5115	5580	6510
	48 x 16	30 x 24			NC	—	15	22	27	32	36	39	43	46	51
5.58	72 x 12	48 x 18			cfm	2232	2790	3348	3906	4464	5022	5580	6138	6696	7812
	60 x 14	36 x 24			NC	—	16	22	27	32	36	40	43	46	52
6.25	72 x 14	48 x 20			cfm	2500	3125	3750	4375	5000	5625	6250	6875	7500	8750
	60 x 16	30 x 30			NC	—	16	22	23	32	37	40	43	47	52
							NC 20		30			40		50	

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.87.
   — Subtract 4 from listed NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 3/4 in. blade spacing, 45° deflection steel

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 .003 .006	250 .004 .010	300 .006 .014	350 .008 .019	400 .010 .025	500 .016 .040	600 .022 .057	700 .031 .077	800 .040 .101	900 .051 .129
													NC 20		
.15	7 x 4				cfm	30	37	45	52	60	75	90	105	120	135
	6 x 5				NC	—	—	—	—	—	—	15	20	24	27
.18	8 x 4	6 x 6			cfm	36	45	54	63	72	90	108	126	144	162
	7 x 5				NC	—	—	—	—	—	—	16	20	24	28
.22	7 x 6				cfm	44	55	66	77	88	110	132	154	176	198
	8 x 5				NC	—	—	—	—	—	—	17	21	25	29
.26	12 x 4	8 x 6			cfm	52	65	78	91	104	130	156	182	208	234
	10 x 5				NC	—	—	—	—	—	—	17	22	26	29
.30	14 x 4				cfm	60	75	90	105	120	150	180	210	240	270
					NC	—	—	—	—	—	—	18	23	26	30
.34	16 x 4	10 x 6			cfm	68	85	102	119	136	170	204	238	272	306
	12 x 5				NC	—	—	—	—	—	—	18	23	27	30
.39	18 x 4	12 x 6			cfm	78	98	117	137	156	195	234	273	312	351
	14 x 5	8 x 8			NC	—	—	—	—	—	—	19	24	28	31
.46	20 x 4	14 x 6			cfm	92	115	138	161	184	230	276	322	368	414
	16 x 5	10 x 8			NC	—	—	—	—	—	—	20	24	28	32
.52	24 x 4	16 x 6			cfm	104	130	156	182	208	260	312	364	416	468
	18 x 5				NC	—	—	—	—	—	15	20	25	29	32
.60	28 x 4	18 x 6	10 x 10		cfm	120	150	180	210	240	300	360	420	480	540
	20 x 5	12 x 8			NC	—	—	—	—	—	15	21	25	29	33
.69	30 x 4	20 x 6	12 x 10		cfm	138	173	207	242	276	345	414	483	552	621
	24 x 5	14 x 8			NC	—	—	—	—	—	15	21	25	29	33
.81	36 x 4	22 x 6	14 x 10		cfm	162	202	243	283	324	405	486	567	648	729
	28 x 5	16 x 8			NC	—	—	—	—	—	17	22	27	31	34
.90	40 x 4	26 x 6	16 x 10		cfm	180	225	270	315	360	450	540	630	720	810
	30 x 5	18 x 8	12 x 12		NC	—	—	—	—	—	17	22	27	31	34
1.07	48 x 4	30 x 6	14 x 12		cfm	214	267	321	374	428	535	642	749	856	963
	36 x 5	18 x 10			NC	—	—	—	—	—	18	23	28	32	35
1.18	34 x 6	20 x 10	14 x 14		cfm	236	295	354	413	472	590	708	826	944	1062
	24 x 8	16 x 12			NC	—	—	—	—	—	19	24	28	32	36
1.34	60 x 4	36 x 6	16 x 14		cfm	268	335	402	469	536	670	804	938	1072	1206
	48 x 5	18 x 12			NC	—	—	—	—	—	19	24	29	33	36
1.60	72 x 4	24 x 10	18 x 14		cfm	320	400	480	560	640	800	960	1120	1280	1440
	30 x 8	22 x 12	16 x 16		NC	—	—	—	—	—	19	25	29	33	37
1.80	60 x 5	36 x 8	24 x 12	18 x 16	cfm	360	450	540	630	720	900	1080	1260	1440	1620
	48 x 6	30 x 10	20 x 14		NC	—	—	—	—	—	20	25	30	34	37
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	416	520	624	728	832	1040	1248	1456	1664	1872
	60 x 6	36 x 10	24 x 14	18 x 18	NC	—	—	—	—	—	21	26	31	34	38
2.45	72 x 6	32 x 12	24 x 16		cfm	490	612	735	857	980	1225	1470	1715	1916	2205
	48 x 8	26 x 14	20 x 18		NC	—	—	—	—	15	21	27	31	35	39
2.78	36 x 12	26 x 16	22 x 20		cfm	556	695	834	973	1112	1390	1668	1946	2224	2502
	30 x 14	24 x 18			NC	—	—	—	—	15	22	27	32	36	39
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	622	777	933	1088	1244	1555	1866	2177	2488	2799
	48 x 10	36 x 14	26 x 18		NC	—	—	—	—	16	22	28	32	36	40
3.61	72 x 8	48 x 12	30 x 18		cfm	722	902	1083	1263	1444	1805	2166	2527	2888	3249
	60 x 10	36 x 16	24 x 24		NC	—	—	—	—	16	23	28	33	37	40
4.29	48 x 14	32 x 20			cfm	858	1072	1287	1501	1716	2145	2574	3003	3432	3861
	36 x 18	28 x 24			NC	—	—	—	—	17	24	29	34	37	41
4.65	72 x 10	36 x 20			cfm	930	1162	1395	1627	1860	2325	2790	3255	3720	4185
	48 x 16	30 x 24			NC	—	—	—	—	17	24	29	34	38	41
5.58	72 x 12	48 x 18			cfm	1116	1395	1674	1953	2232	2790	3348	3906	4464	5022
	60 x 14	36 x 24			NC	—	—	—	14	18	25	20	35	38	42
6.25	72 x 14	48 x 20			cfm	1250	1562	1875	2187	2500	3125	3750	4375	5000	5625
	60 x 16	30 x 30			NC	—	—	—	15	18	25	30	35	39	42
											NC 20	30		40	

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.90.
   — Subtract 5 from listed NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

EXTRUDED ALUMINUM

Product Information

Extruded Aluminum Models

½ in. [13] Blade Spacing

0° Deflection	**97**
45° Deflection	**98**
30° Deflection	**99**

Application

- Specifically designed for gymnasiums, factories, warehouses, shower areas, public washrooms, heavy traffic corridors and any general public area where humidity and abuse are a major concern.

Construction

- Three Core styles available of heavy duty extruded aluminum.
- Core blades held by mandrel tubes not to exceed 12 in. on center.
- Continuously welded border.
- Optional opposed blade damper: VCS3 = steel damper (black finish) VCS3AL = aluminum damper (mill finish)

Mounting / Finish Options

Blade Orientation

Blades parallel to Long Dimension	**L**
Blades parallel to Short Dimension	**S**

Fastening

Countersunk screwholes c/w oval-head screws	**A**
Concealed (n/a on Models 98, 99)	**C**

Finish

White Powder Coat	**B12**

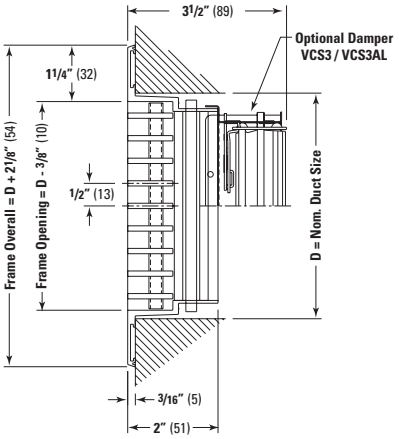
For optional and special finishes see color matrix.

Available Sizes

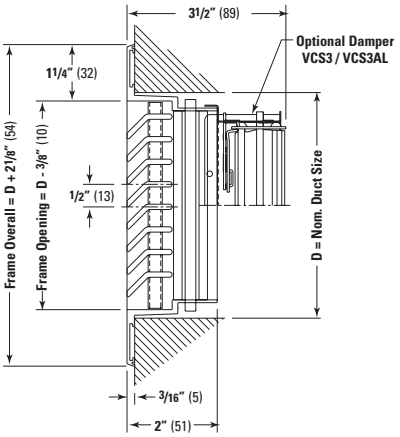
Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**48 in. x 96 in.** [1219 x 2438]

* One-piece

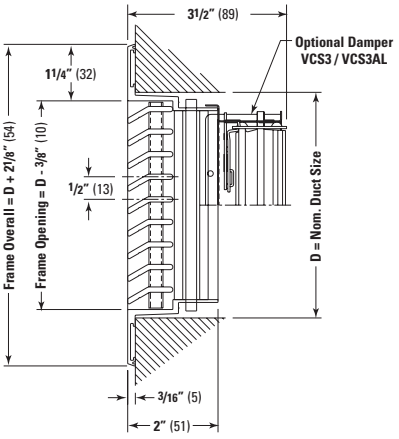
Model 97



Model 98



Model 99



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Blade Orientation.
4] Select Mounting Frame if desired.
5] Select Fastening Type (A is standard).
6] Select Finish.

Example: 24 in. x 24 in. / 97D / L / A / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 1/2 in. blade spacing, 0° deflection, ext. alum.

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 .003 .006	250 .004 .010	300 .006 .014	350 .008 .018	400 .010 .024	500 .016 .038	600 .022 .054	700 .031 .074	800 .040 .097	900 .051 .122
0.15	7 x 4				cfm	30	38	45	53	60	75	90	105	120	135
	6 x 5				NC	—	—	—	—	—	—	—	16	20	24
0.18	8 x 4	6 x 6			cfm	36	45	54	63	72	90	108	126	144	162
	7 x 5				NC	—	—	—	—	—	—	—	18	22	25
0.22	7 x 6				cfm	44	55	66	77	88	110	132	154	176	198
	8 x 5				NC	—	—	—	—	—	—	—	19	23	26
0.26	12 x 4	8 x 6			cfm	52	65	78	91	104	130	156	182	208	234
	10 x 5				NC	—	—	—	—	—	—	15	20	24	27
0.30	14 x 4				cfm	60	75	90	105	120	150	180	210	240	270
					NC	—	—	—	—	—	—	16	20	24	28
0.34	16 x 4	10 x 6			cfm	68	85	102	119	136	170	204	238	272	306
	12 x 5				NC	—	—	—	—	—	—	16	21	25	29
0.39	18 x 4	12 x 6			cfm	78	98	117	137	156	195	234	273	312	351
	14 x 5	8 x 8			NC	—	—	—	—	—	—	17	22	26	29
0.46	20 x 4	14 x 6			cfm	92	115	138	161	184	230	276	322	368	414
	16 x 5	10 x 8			NC	—	—	—	—	—	—	18	23	27	30
0.52	24 x 4	16 x 6			cfm	104	130	156	182	208	260	312	364	416	468
	18 x 5				NC	—	—	—	—	—	—	19	24	28	31
0.60	28 x 4	18 x 6	10 x 10		cfm	120	150	180	210	240	300	360	420	480	540
	20 x 5	12 x 8			NC	—	—	—	—	—	—	20	24	28	32
0.69	30 x 4	20 x 6	12 x 10		cfm	138	173	207	242	276	345	414	483	552	621
	24 x 5	14 x 8			NC	—	—	—	—	—	15	20	25	29	33
0.81	36 x 4	22 x 6	14 x 10		cfm	162	203	243	243	324	405	486	567	648	729
	28 x 5	16 x 8			NC	—	—	—	—	—	16	21	26	30	34
0.90	40 x 4	26 x 6	16 x 10		cfm	180	225	270	315	360	450	540	630	720	810
	30 x 5	18 x 8	12 x 12		NC	—	—	—	—	—	16	22	27	31	34
1.07	48 x 4	30 x 6	14 x 12		cfm	214	268	321	375	428	535	642	749	856	963
	36 x 5	18 x 10			NC	—	—	—	—	—	17	23	28	32	35
1.18	34 x 6	20 x 10	14 x 14		cfm	236	295	354	413	472	590	708	826	944	1062
	24 x 8	16 x 12			NC	—	—	—	—	—	18	23	28	32	36
1.34	60 x 4	36 x 6	16 x 14		cfm	268	335	402	469	536	670	804	938	1072	1206
	48 x 5	18 x 12			NC	—	—	—	—	—	19	24	29	33	36
1.60	72 x 4	24 x 10	18 x 14		cfm	320	400	480	560	640	800	960	1120	1280	1440
	30 x 8	22 x 12	16 x 16		NC	—	—	—	—	—	20	25	30	34	37
1.82	60 x 5	36 x 8	24 x 12	18 x 16	cfm	360	450	540	630	720	900	1080	1260	1440	1620
	48 x 6	30 x 10	20 x 14		NC	—	—	—	—	—	20	26	31	35	38
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	416	520	624	728	832	1040	1248	1456	1664	1872
	60 x 6	36 x 10	24 x 14	18 x 18	NC	—	—	—	—	—	21	27	31	35	39
2.45	72 x 6	32 x 12	24 x 16		cfm	490	613	735	858	980	1225	1470	1715	1916	2205
	48 x 8	26 x 14	20 x 18		NC	—	—	—	—	15	22	28	32	36	40
2.78	36 x 12	26 x 16	22 x 20		cfm	556	695	834	973	1112	1390	1668	1946	2224	2502
	30 x 14	24 x 18			NC	—	—	—	—	16	23	28	33	37	41
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	622	778	933	1089	1244	1555	1866	2177	2488	2799
	48 x 10	36 x 14	26 x 18		NC	—	—	—	—	17	23	29	34	38	41
3.61	72 x 8	48 x 12	30 x 18		cfm	722	903	1083	1264	1444	1805	2166	2527	2888	3249
	60 x 10	36 x 16	24 x 24		NC	—	—	—	—	17	24	30	34	38	42
4.29	48 x 14	32 x 20			cfm	858	1073	1287	1502	1716	2145	2574	3003	3432	3861
	36 x 18	28 x 24			NC	—	—	—	—	18	25	31	35	39	43
4.65	72 x 10	36 x 20			cfm	930	1163	1395	1628	1860	2325	2790	3255	3720	4185
	48 x 16	30 x 24			NC	—	—	—	15	19	26	31	36	40	43
5.58	72 x 12	48 x 18			cfm	1116	1395	1674	1953	2232	2790	3348	3906	4464	5022
	60 x 14	36 x 24			NC	—	—	—	16	20	27	32	37	41	44
6.25	72 x 14	48 x 20			cfm	1250	1563	1875	2188	2500	3125	3750	4375	5000	5625
	60 x 16	30 x 30			NC	—	—	—	16	20	27	33	38	42	45

NC 20 — 30 — 40

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.87.
   — Subtract 7 from listed NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 1/2 in. blade spacing, 45° deflection, ext. alum.

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 .002 .021	250 .004 .033	300 .006 .047	350 .008 .064	400 .010 .083	450 .013 .102
0.15	7 x 4				cfm	30	37	45	52	60	70
	6 x 5				NC	—	—	—	18	21	24
0.18	8 x 4	6 x 6			cfm	36	45	54	63	72	81
	7 x 5				NC	—	—	—	18	21	24
0.22	10 x 4	7 x 6			cfm	44	55	66	77	88	100
	8 x 5				NC	—	—	15	19	22	25
0.26	12 x 4	8 x 6			cfm	52	65	78	91	104	117
	10 x 5				NC	—	—	15	19	22	25
0.30	14 x 4				cfm	60	75	90	105	120	135
					NC	—	—	16	20	23	26
0.34	16 x 4	10 x 6			cfm	68	85	102	119	136	153
	12 x 5				NC	—	—	16	20	23	26
0.39	18 x 4	12 x 6			cfm	78	98	117	137	156	176
	14 x 5	8 x 8			NC	—	—	17	21	24	27
0.40	20 x 4	14 x 6			cfm	92	115	138	161	184	207
	16 x 5	10 x 8			NC	—	—	17	21	24	27
0.52	24 x 4	16 x 6			cfm	104	130	156	182	208	234
	18 x 5				NC	—	—	17	21	24	27
0.60	28 x 4	18 x 6	10 x 10		cfm	120	150	180	210	240	270
	20 x 5	12 x 8			NC	—	—	18	22	25	28
0.69	30 x 4	20 x 6	12 x 10		cfm	138	173	207	242	276	311
	24 x 5	14 x 8			NC	—	—	18	22	25	28
0.81	36 x 4	22 x 6	14 x 10		cfm	162	202	243	283	324	365
	28 x 5	16 x 8			NC	—	—	18	22	25	28
0.90	40 x 4	26 x 6	16 x 10		cfm	180	225	270	315	360	405
	30 x 5	18 x 8	12 x 12		NC	—	—	19	23	26	29
1.07	48 x 4	30 x 6	14 x 12		cfm	214	267	321	374	428	482
	36 x 5	18 x 10			NC	—	—	19	23	26	29
1.18	34 x 6	20 x 10	14 x 14		cfm	236	295	354	413	472	531
	24 x 8	16 x 12			NC	—	—	19	23	26	29
1.34	60 x 4	36 x 6	16 x 14		cfm	268	335	402	469	536	603
	48 x 5	18 x 12			NC	—	15	20	24	27	30
1.60	72 x 4	24 x 10	18 x 14		cfm	320	400	480	560	640	720
	30 x 8	22 x 12	16 x 16		NC	—	15	20	24	27	30
1.80	60 x 5	36 x 8	24 x 12	18 x 16	cfm	360	450	540	630	720	810
	48 x 6	30 x 10	20 x 14		NC	—	16	21	25	28	31
2.08	72 x 5	40 x 8	30 x 12	20 x 16	cfm	416	520	624	728	832	936
	60 x 6	36 x 10	24 x 14	18 x 18	NC	—	16	21	25	28	31
2.45	72 x 6	32 x 12	24 x 16		cfm	490	612	735	857	980	1103
	48 x 8	26 x 14	20 x 18		NC	—	16	21	25	28	31
2.78	36 x 12	26 x 16	22 x 20		cfm	556	695	834	973	1112	1251
	30 x 14	24 x 18			NC	—	17	22	26	29	32
3.11	60 x 8	40 x 12	30 x 16	24 x 20	cfm	622	777	933	1088	1244	1400
	48 x 10	36 x 14	26 x 18		NC	—	17	22	26	29	32
3.61	72 x 8	48 x 12	30 x 18		cfm	722	902	1083	1263	1444	1625
	60 x 10	36 x 16	24 x 24		NC	—	17	22	26	29	32
4.29	48 x 14	32 x 20			cfm	858	1072	1287	1501	1716	1930
	36 x 18	28 x 24			NC	—	18	23	27	30	33
4.65	72 x 10	36 x 20			cfm	930	1162	1395	1627	1860	2093
	48 x 16	30 x 24			NC	—	18	23	27	30	33
5.58	72 x 12	48 x 18			cfm	1116	1395	1674	1953	2232	2511
	60 x 14	36 x 24			NC	—	18	23	27	30	33
6.25	72 x 14	48 x 20			cfm	1250	1562	1875	2187	2500	2813
	60 x 16	30 x 30			NC	—	19	24	28	31	34

NC 20 (boundary) — 30 (boundary)

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure.
4. Core style 98 is not recommended for core velocities in excess of 450 fpm.
5. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
6. Blanks (—) indicate an NC level below 15.
7. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.96.
   — Subtract 2 from listed NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 1/2 in. blade spacing, 30˚ deflection, ext. alum.

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 .002 .012	250 .004 .019	300 .006 .028	350 .008 .038	400 .010 .050	450 .013 .063	NC 20 500 .016 .078	550 .019 .094	600 .022 .112	650 .026 .131	30 700 .031 .152	750 .035 .175	800 .040 .199	850 .045 .225	900 .050 .252	40 950 .056 .281	1000 .062 .311
0.15	7x4				cfm	30	38	45	53	60	68	75	83	90	98	105	113	120	128	135	143	150
	6x5				NC	—	—	—	—	—	17	21	24	27	29	32	34	36	38	40	42	44
0.18	8x4	6x6			cfm	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180
	7x5				NC	—	—	—	—	—	17	21	24	27	30	32	34	36	38	40	42	44
0.22	10x4	7x6			cfm	44	55	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220
	8x5				NC	—	—	—	—	—	18	21	24	27	30	32	34	37	39	40	42	44
0.26	12x4	8x6			cfm	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247	260
	10x5				NC	—	—	—	—	—	18	21	24	27	30	32	35	37	39	41	42	44
0.30	14x4				cfm	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
					NC	—	—	—	—	—	18	21	24	27	30	32	35	37	39	41	42	44
0.34	16x4	10x6			cfm	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340
	12x5				NC	—	—	—	—	—	18	21	25	27	30	32	35	37	39	41	43	44
0.39	18x4	12x6			cfm	78	98	117	137	156	176	195	215	234	254	273	293	312	332	351	371	390
	14x5	8x8			NC	—	—	—	—	—	18	21	25	27	30	33	35	37	39	41	43	44
0.40	20x4	14x6			cfm	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
	16x5	10x8			NC	—	—	—	—	—	18	22	25	28	30	33	35	37	39	41	43	44
0.52	24x4	16x6			cfm	104	130	156	182	208	234	260	286	312	338	364	390	416	442	468	494	520
	18x5				NC	—	—	—	—	—	18	22	25	28	30	33	35	37	39	41	43	45
0.60	28x4	18x6	10x10		cfm	120	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600
	20x5	12x8			NC	—	—	—	—	—	18	22	25	28	30	33	35	37	39	41	43	45
0.69	30x4	20x6	12x10		cfm	138	173	207	242	276	311	345	380	414	449	483	518	552	587	621	656	690
	24x5	14x8			NC	—	—	—	—	—	18	22	25	28	31	33	35	37	39	41	43	45
0.81	36x4	22x6	14x10		cfm	162	203	243	284	324	365	405	446	486	527	567	608	648	689	729	770	810
	28x5	16x8			NC	—	—	—	—	—	19	22	25	28	31	33	35	38	40	41	43	45
0.90	40x4	26x6	16x10		cfm	180	225	270	315	360	405	450	495	540	585	630	675	720	765	810	855	900
	30x5	18x8	12x12		NC	—	—	—	—	—	19	22	25	28	31	33	35	38	40	41	43	45
1.07	48x4	30x6	14x12		cfm	214	268	321	375	428	482	535	589	642	696	749	803	856	910	963	1017	1070
	36x5	18x10			NC	—	—	—	—	—	19	22	25	28	31	33	36	38	40	42	43	45
1.18	34x6	20x10	14x14		cfm	236	295	354	413	472	531	590	649	708	767	826	885	944	1003	1062	1121	1180
	24x8	16x12			NC	—	—	—	—	—	19	22	25	28	31	33	36	38	40	42	43	45
1.34	60x4	36x6	16x14		cfm	268	335	402	469	536	603	670	737	804	871	938	1005	1072	1139	1206	1273	1340
	48x5	18x12			NC	—	—	—	—	15	19	22	26	28	31	33	36	38	40	42	44	45
1.60	72x4	24x10	18x14		cfm	320	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360	1440	1520	1600
	30x8	22x12	16x16		NC	—	—	—	—	15	19	23	26	29	31	34	36	38	40	42	44	45
1.80	60x5	36x8	24x12	18x16	cfm	360	450	540	630	720	810	900	990	1080	1170	1260	1350	1440	1530	1620	1710	1800
	48x6	30x10	20x14		NC	—	—	—	—	15	19	23	26	29	31	34	36	38	40	42	44	45
2.08	75x5	40x8	30x12	20x16	cfm	416	520	624	728	832	936	1040	1144	1248	1352	1456	1560	1664	1768	1872	1976	2080
	60x6	36x10	24x14	18x18	NC	—	—	—	—	15	19	23	26	29	31	34	36	38	40	42	44	46
2.45	72x6	32x12	24x16		cfm	490	613	735	858	980	1103	1225	1348	1470	1593	1715	1838	1960	2083	2205	2328	2450
	48x8	26x14	20x18		NC	—	—	—	—	16	19	23	26	29	31	34	36	38	40	42	44	46
2.78	36x12	26x16	22x20		cfm	556	695	834	973	1112	1251	1390	1529	1668	1807	1946	2085	2224	2363	2502	2641	2780
	30x14	24x18			NC	—	—	—	—	16	19	23	26	29	32	34	36	38	40	42	44	46
3.11	60x8	40x12	30x16	24x20	Cfm	622	778	933	1089	1244	1400	1555	1711	1866	2022	2177	2333	2488	2644	2799	2955	3110
	48x10	36x14	26x18		NC	—	—	—	—	16	20	23	26	29	32	34	36	39	41	42	44	46
3.61	72x8	48x12	30x18		cfm	722	903	1083	1264	1444	1625	1805	1986	2166	2347	2527	2708	2888	3069	3249	3430	3610
	60x10	36x16	24x24		NC	—	—	—	—	16	20	23	26	29	32	34	37	39	41	43	44	46
4.29	48x14	32x20			cfm	858	1073	1287	1502	1716	1931	2145	2360	2574	2789	3003	3218	3432	3647	3861	4076	4290
	36x18	28x24			NC	—	—	—	—	16	20	23	26	29	32	34	37	39	41	43	44	46
4.65	72x10	36x20			cfm	930	1163	1395	1628	1860	2093	2325	2558	2790	3023	3255	3488	3720	3953	4185	4418	4650
	48x16	30x24			NC	—	—	—	—	16	20	23	26	29	32	34	37	39	41	43	44	46
5.58	72x12	48x14			cfm	1116	1395	1674	1953	2232	2511	2790	3069	3348	3627	3906	4185	4464	4743	5022	5301	5580
	60x14	36x24			NC	—	—	—	—	16	20	23	27	29	32	35	37	39	41	43	45	46
6.25	72x14	48x20			cfm	1250	1563	1875	2188	2500	2813	3125	3438	3750	4063	4375	4688	5000	5313	5625	5938	6250
	60x16	30x30			NC	—	—	—	—	16	20	24	27	30	32	35	37	39	41	43	45	46
												NC 20			30				40			

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. s.p. = Static Pressure.
5. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
6. Blanks (—) indicate an NC level below 15.
7. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.87.
   — Subtract 7 from listed NC.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

910 / 920 Series

Product Information

Heavy Gauge Steel Models

Single Deflection

1/2 in. [13] Spacing Individually adjustable blades, 45 to -45° deflection

Grille **910**

Double Deflection

1/2 in. [13] Front Blade Spacing with 3/4 in. [19] Rear Blade Spacing. Individually adjustable front blades, 45 to -45° deflection Individually adjustable rear blades.

Grille **920**

Application

Specifically designed for severe applications such as gymnasiums,factories, warehouses, public washrooms, heavy traffic corridors and any general public area where abuse is a major concern. Coated steel opposed blade damper is optional.

Construction

Heavy gauge 1 1/4 in. [32] flat steel border. Smooth contours on blades reduce the possibility of injury to athletes when used in gymnasiums.

- 16 Gauge steel frame.
- 14 Gauge steel front blades.
- 14 Gauge steel mullions.
- Steel rear deflection blades (model 920 only).
- One blade fixed at 0° deflection approximately every 12 in. (305).

Mounting / Finish Options

Blade Orientation

Blades parallel to Long Dimension **L**
Blades parallel to Short Dimension **S**

Optional Mounting Frame **D**

Fastening

Countersunk screwholes for neat appearance **A**

Finish

White Powder Coat **B12**

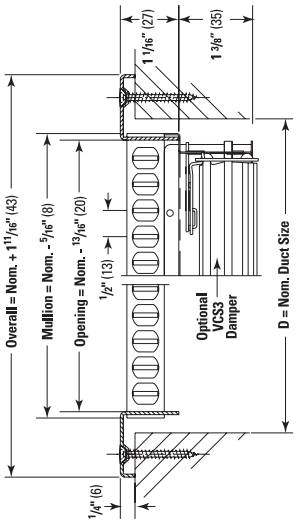
For optional and special finishes see color matrix.

Available Sizes

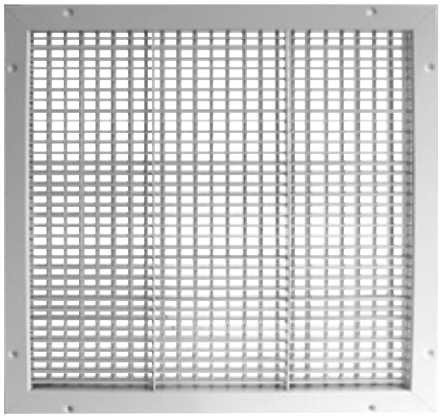
Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**48 in. x 48 in.** [1219 x 1219]

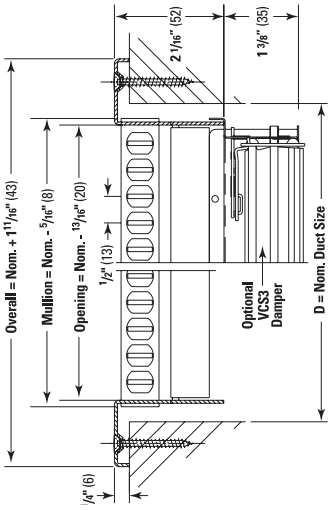
* One-piece

Model 910

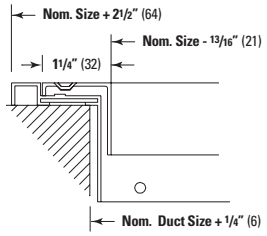


Model 920





D Mounting Frame



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Blade Orientation.
4] Select Mounting Frame if desired.
5] Select Fastening Type (A is standard).
6] Select Finish.

Example: 24 in. x 24 in. / 910D / L / A / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Reversible Core Grille - Architectural Quality
RCG Series

EXTRUDED ALUMINUM

Product Information

Models

Grille **RCG**

Application

- Sidewall supply grille with linear appearance for demanding architectural conditions.
- Adjustable air pattern for heating or cooling applications without changing appearance.

Construction

- All-extruded aluminum.
- Core is removable and can provide four vertical deflections.
- Optional steel or aluminum rear mounted deflecting vanes to control horizontal spread.
- Optional opposed blade damper available in steel with black finish or aluminum with mill finish.

Mounting / Finish Options

Border Style

Surface Mount
1 in. [25] Flat (Standard) **N**
1 in. [25] Curved **C**

Blade Orientation

Blades parallel to long dimension **L**
Blades parallel to short dimension **S**

Directional Vanes

Rear mounted 1 in. [25] on center
(Steel) **DVS**
(Aluminum) **DVAL**

Finish

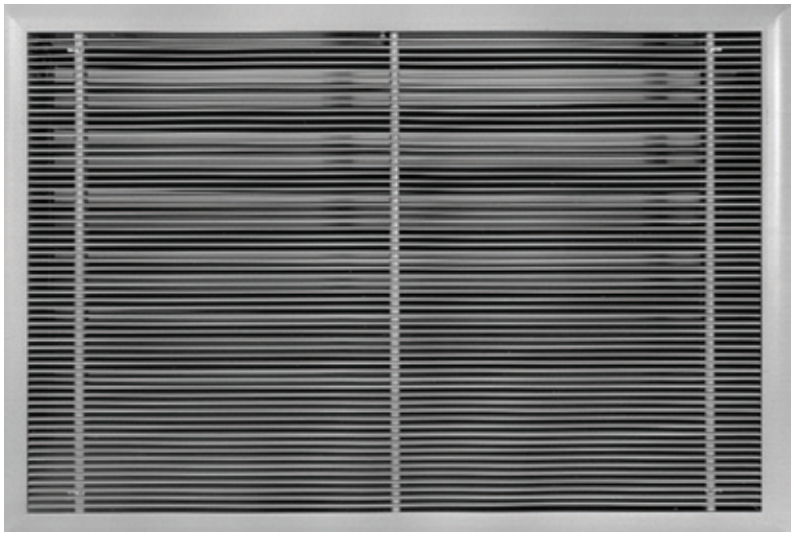
White Powder Coat **B12**

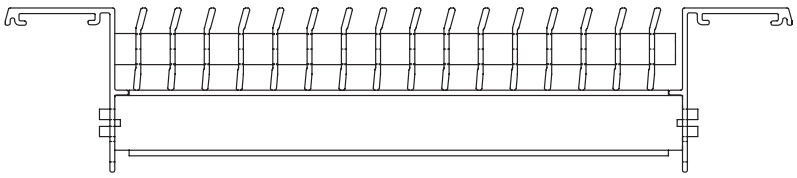
For optional and special finishes see color matrix.

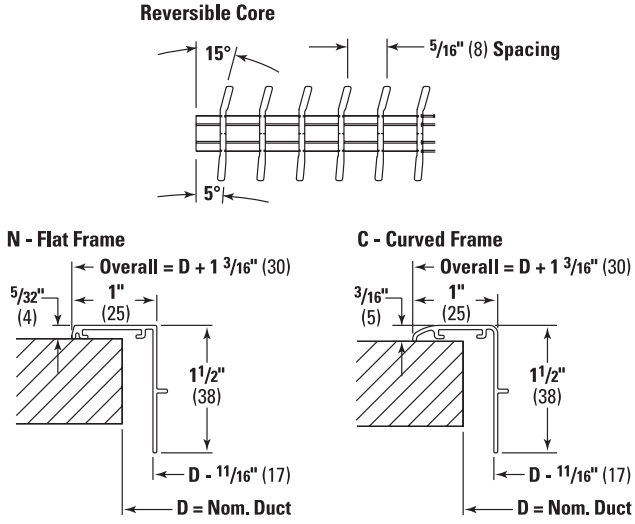
Available Sizes

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**72 in. x 36 in.** [1829 x 914]

- For oversize grille construction, see page D119-D120.







✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Border Style.
4] Select Deflecting Vanes if desired.
5] Select Finish.

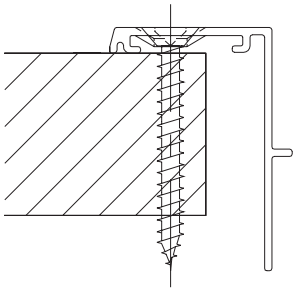
Example: 24 in. x 24 in. / RCG / C / B12
24 in. x 12 in. / RCG / N / DV1 / B15

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

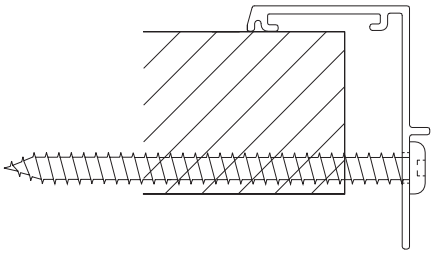
Product Details

Fastening Options

A Countersunk Screws

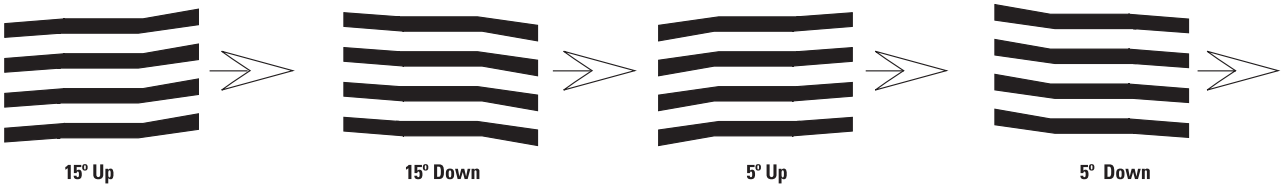


G Concealed Screws



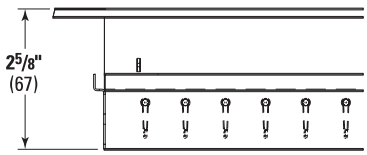
Directional vanes spaced 1 in. [25]

Reversible core - provides four different vertical deflections.

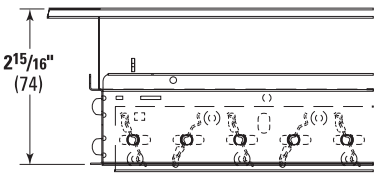


Accessories

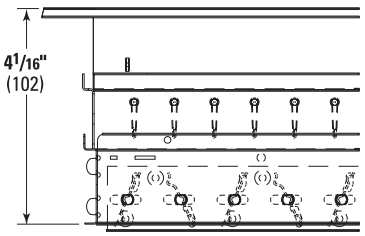
DV - Directional Vanes



VCS3 Opposed Blade Damper



DV Directional Vanes & VCS3 Damper



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size								NC 20		30		
	Core Velocity fpm		**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**
	Velocity Pressure		**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**
	Total	**0°**	.017	.028	.045	.062	.084	.112	.174	.252	.341
	Pressure	**22½°**	.019	.031	.050	.068	.093	.124	.192	.279	.378
		45°	.020	.034	.054	.075	.102	.136	.211	.306	.415
Ac = **.18** ft² 8 X 4, 7 X 5, 6 X 6	**cfm**		**55**	**70**	**90**	**110**	**125**	**145**	**180**	**215**	**250**
	NC		—	—	—	—	**17**	**21**	**27**	**33**	**38**
		0°	4-7-13	6-8-15	7-12-17	10-14-19	11-15-20	12-16-22	14-17-24	15-19-26	17-21-29
	Throw	**22½°**	3-6-10	5-6-12	6-10-14	7-11-15	8-12-16	10-13-18	11-14-19	12-15-21	14-17-23
	ft	**45°**	2-3-7	3-4-8	4-5-9	4-7-10	5-7-10	6-8-11	7-9-12	8-10-13	8-10-14
Ac = **.26** ft² **12 X 4, 10 X 5, 8 X 6**	**cfm**		**80**	**105**	**130**	**155**	**180**	**210**	**260**	**310**	**365**
	NC		—	—	—	—	**18**	**22**	**28**	**34**	**39**
		0°	5-8-16	7-12-19	10-14-21	11-17-23	13-17-24	15-19-26	17-21-29	19-23-32	20-25-35
	Throw	**22½°**	4-6-13	6-10-15	7-11-17	8-14-18	11-14-19	12-15-21	14-17-23	15-18-26	16-20-23
	ft	**45°**	3-4-8	4-5-9	4-7-10	5-8-11	6-9-12	7-9-13	8-11-15	9-12-16	10-13-17
Ac = **.34** ft² 16 X 4, 12 X 5, 10 X 6	**cfm**		**100**	**135**	**170**	**205**	**240**	**270**	**340**	**410**	**475**
	NC		—	—	—	—	**19**	**23**	**29**	**35**	**40**
		0°	5-10-18	8-13-21	11-16-24	13-20-26	15-20-28	17-22-30	20-24-33	22-26-37	23-28-40
	Throw	**22½°**	4-7-14	6-11-17	8-13-19	11-16-22	12-16-22	14-18-24	16-19-26	18-21-30	18-22-32
	ft	**45°**	3-4-9	4-6-11	5-8-12	6-10-13	7-10-14	8-11-15	10-12-17	11-13-18	12-14-20
Ac = **.39** ft² 18 X 4, 14 X 5, 12 X 6, 8 X 8	**cfm**		**115**	**155**	**195**	**235**	**275**	**310**	**390**	**470**	**545**
	NC		—	—	—	**15**	**20**	**24**	**30**	**36**	**41**
		0°	6-10-19	10-14-23	12-17-25	14-20-28	16-22-30	18-23-32	21-26-36	23-27-40	25-30-42
	Throw	**22½°**	5-7-15	7-11-18	10-14-20	11-16-22	13-18-24	15-18-26	17-21-29	18-22-32	20-24-34
	ft	**45°**	3-5-10	4-6-11	5-8-13	7-11-14	8-11-15	10-12-16	11-13-18	12-14-20	12-15-21
Ac = **.52** ft² 24 X 4, 18 X 5, 16 X 6	**cfm**		**155**	**210**	**260**	**310**	**365**	**415**	**520**	**625**	**730**
	NC		—	—	—	**16**	**21**	**25**	**31**	**37**	**42**
		0°	7-12-23	11-16-26	14-20-29	16-23-32	19-25-35	21-26-37	24-30-41	27-33-45	29-35-49
	Throw	**22½°**	6-10-18	8-13-21	11-16-23	13-19-26	15-20-28	17-21-30	19-24-33	22-26-36	23-28-39
	ft	**45°**	3-5-11	5-7-13	6-10-15	8-12-16	10-12-17	11-13-18	12-15-21	13-16-23	14-18-24
Ac = **.60** ft² 28 X 4, 20 X 5, 18 X 6, 12 X 8, 10 X 10	**cfm**		**180**	**240**	**300**	**360**	**420**	**480**	**600**	**720**	**840**
	NC		—	—	—	**17**	**22**	**26**	**32**	**38**	**43**
		0°	7-13-24	12-17-28	15-21-31	17-25-34	20-27-37	23-29-40	26-32-45	29-35-48	31-38-52
	Throw	**22½°**	6-11-19	10-14-22	12-17-25	14-20-27	16-22-30	19-23-32	21-26-36	23-28-38	25-30-42
	ft	**45°**	4-6-12	5-8-14	7-11-16	8-13-17	11-13-19	12-14-20	13-16-22	14-17-24	15-19-26
Ac = **.69** ft² 30 X 4, 24 X 5, 20 X 6, 14 X 8, 12 X 10	**cfm**		**205**	**275**	**345**	**415**	**485**	**550**	**690**	**830**	**965**
	NC		—	—	—	**17**	**22**	**26**	**32**	**38**	**43**
		0°	8-14-26	13-18-30	16-23-34	19-27-37	22-29-40	25-31-43	28-34-47	30-38-52	33-40-56
	Throw	**22½°**	6-11-21	11-15-24	13-19-27	15-22-30	18-23-32	20-25-34	22-27-38	24-30-42	26-32-45
	ft	**45°**	4-6-13	6-10-15	7-12-17	10-14-18	11-14-20	13-15-21	14-17-24	15-19-26	16-20-28
							NC 20		**30**		**40**

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on a room absorption of 10 dB re 10^{-12} watts, with a single register operating at 0° horizontal deflection setting. For deflection settings of 22½° and 45°, increase the stated sound levels by 1 and 4 NC respectively.
7. Blanks (—) indicate an NC level below 15.
8. The stated deflection settings refer to horizontal deflections. Horizontal deflection is adjusted by means of the optional individually adjustable rear blades.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size							NC 20		30		40	
	Core Velocity fpm		**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**
	Velocity Pressure		**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**
	Total	**0°**	**.017**	**.028**	**.045**	**.062**	**.084**	**.112**	**.174**	**.252**	**.341**
	Pressure	**22½°**	**.019**	**.031**	**.050**	**.068**	**.093**	**.124**	**.192**	**.279**	**.378**
		45°	**.020**	**.034**	**.054**	**.075**	**.102**	**.136**	**.211**	**.306**	**.415**
Ac = **.81** ft²	**cfm**		**245**	**325**	**405**	**485**	**565**	**650**	**810**	**970**	**1130**
36 x 4 16 x 8	**NC**		—	—	—	**18**	**23**	**27**	**33**	**39**	**44**
28 x 5 14 x 10		**0°**	8-15-28	14-20-33	17-24-37	20-29-40	24-31-43	27-33-46	30-37-51	33-41-56	36-44-60
22 x 6	**Throw**	**22½°**	6-12-22	11-16-26	14-19-30	16-23-32	19-25-34	22-26-37	24-30-41	26-33-45	29-35-48
	ft	**45°**	4-7-14	6-10-16	8-13-18	11-15-20	12-15-22	14-17-23	15-19-26	17-20-28	18-22-30
Ac = **.90** ft²	**cfm**		**270**	**360**	**450**	**540**	**630**	**720**	**900**	**1080**	**1260**
40 x 4 18 x 8	**NC**		—	—	—	**19**	**24**	**28**	**34**	**40**	**45**
30 x 5 16 x 10		**0°**	10-16-30	15-21-34	18-26-39	22-31-42	25-33-45	28-35-48	32-39-55	35-43-59	37-46-63
26 x 6 12 x 12	**Throw**	**22½°**	7-13-24	12-17-27	15-21-31	18-25-34	20-26-36	23-28-38	26-31-44	28-34-47	30-37-50
	ft	**45°**	5-8-15	7-11-17	10-14-19	11-16-21	13-16-23	15-17-24	16-20-27	17-21-29	19-23-32
Ac = **1.07** ft²	**cfm**		**320**	**430**	**535**	**640**	**750**	**855**	**1070**	**1280**	**1500**
48 x 4 18 x 10	**NC**		—	—	**14**	**19**	**24**	**28**	**34**	**40**	**45**
36 x 5 14 x 12		**0°**	11-17-32	16-23-38	19-30-42	23-35-46	28-36-49	31-38-53	35-43-59	38-46-64	41-50-69
30 x 6	**Throw**	**22½°**	8-14-26	13-19-30	15-23-34	19-28-37	22-29-39	24-30-42	28-34-47	30-37-51	33-40-55
	ft	**45°**	5-8-16	7-12-19	10-15-21	12-18-23	14-18-25	15-19-26	17-21-29	19-23-32	20-25-35
Ac = **1.18** ft²	**cfm**		**355**	**470**	**590**	**710**	**825**	**945**	**1180**	**1420**	**1650**
34 x 6 16 x 12	**NC**		—	—	—	**19**	**24**	**28**	**34**	**40**	**45**
24 x 8 14 x 14		**0°**	11-18-34	16-24-40	20-30-44	24-37-48	29-38-52	33-40-56	36-45-62	40-48-67	43-52-73
20 x 10	**Throw**	**22½°**	8-15-27	13-19-32	16-23-35	19-30-38	23-30-42	27-32-45	29-36-50	32-38-54	34-42-58
	ft	**45°**	5-8-17	8-12-20	11-15-22	13-18-24	14-19-26	16-20-28	18-22-31	20-24-34	21-26-36
Ac = **1.34** ft²	**cfm**		**400**	**535**	**670**	**805**	**940**	**1070**	**1340**	**1610**	**1880**
60 x 4 18 x 12	**NC**		—	—	**15**	**20**	**25**	**29**	**35**	**41**	**46**
48 x 5 16 x 14		**0°**	12-19-36	17-25-42	21-32-47	25-39-51	30-40-56	34-43-59	39-47-65	42-52-72	45-56-78
36 x 6	**Throw**	**22½°**	10-15-29	14-20-34	17-25-38	20-32-41	23-32-45	28-34-47	31-38-52	34-42-58	36-45-62
	ft	**45°**	6-10-18	8-13-21	11-16-23	13-19-26	15-20-28	17-21-29	19-23-33	21-26-36	23-28-39
Ac = **1.60** ft²	**cfm**		**480**	**640**	**800**	**960**	**1120**	**1280**	**1600**	**1920**	**2240**
72 x 4 22 x 12	**NC**		—	—	**16**	**21**	**26**	**30**	**36**	**42**	**47**
30 x 8 18 x 14		**0°**	14-21-40	19-28-46	22-34-51	29-41-56	33-43-60	37-46-64	42-51-72	46-56-79	49-61-85
24 x 10 16 x 16	**Throw**	**22½°**	11-17-32	15-22-37	19-28-41	23-33-45	27-34-48	30-37-51	34-41-58	37-45-63	39-49-68
	ft	**45°**	6-11-20	10-14-23	12-17-25	14-21-28	16-22-30	18-23-32	21-26-36	23-28-39	25-30-43
Ac = **1.80** ft²	**cfm**		**540**	**720**	**900**	**1080**	**1260**	**1440**	**1800**	**2160**	**2520**
60 x 5 24 x 12	**NC**		—	—	**17**	**22**	**27**	**31**	**37**	**43**	**48**
48 x 6 20 x 14		**0°**	14-22-42	20-30-48	25-37-55	31-45-59	34-46-63	39-49-68	45-55-76	48-60-84	52-65-90
36 x 8 18 x 16	**Throw**	**22½°**	11-18-34	16-23-38	20-30-44	24-36-47	28-37-50	32-39-54	36-44-61	38-48-67	42-52-72
30 x 10	**ft**	**45°**	7-12-21	10-15-24	13-18-27	15-22-29	17-23-32	20-24-34	22-27-38	24-30-42	26-32-45
						NC 20		**30**		**40**	

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on a room absorption of 10 dB re 10^{-12} watts, with a single register operating at 0° horizontal deflection setting. For deflection settings of 22½° and 45°, increase the stated sound levels by 1 and 4 NC respectively.
7. Blanks (—) indicate an NC level below 15.
8. The stated deflection settings refer to horizontal deflections. Horizontal deflection is adjusted by means of the optional individually adjustable rear blades.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size						NC 20		30		40		
	Core Velocity fpm		**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**
	Velocity Pressure		**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**
	Total	**0°**	.017	.028	.045	.062	.084	.112	.174	.252	.341
	Pressure	**22½°**	.019	.031	.050	.068	.093	.124	.192	.279	.378
		45°	.020	.034	.054	.075	.102	.136	.211	.306	.415
Ac = **2.08** ft²	**cfm**		**625**	**830**	**1040**	**1250**	**1460**	**1660**	**2080**	**2500**	**2910**
72 x 5 20 x 16	**NC**		—	—	**17**	**22**	**27**	**31**	**37**	**43**	**48**
60 x 6 18 x 18		**0°**	15-24-45	21-32-52	28-40-58	32-47-63	37-49-68	42-53-73	48-59-82	52-64-90	56-69-97
40 x 8 36 x 10	**Throw**	**22½°**	12-19-36	17-25-42	22-32-46	25-37-50	30-39-54	34-42-58	38-47-66	42-51-72	45-55-78
30 x 12 24 x 14	**ft**	**45°**	7-12-23	11-16-26	14-20-29	16-23-32	18-25-34	22-26-37	24-29-41	26-32-45	28-35-48
Ac = **2.45** ft²	**cfm**		**735**	**980**	**1220**	**1470**	**1720**	**1960**	**2450**	**2940**	**3430**
72 x 6 48 x 8	**NC**		—	—	**18**	**23**	**28**	**32**	**38**	**44**	**49**
32 x12 26 x14		**0°**	16-27-49	23-35-57	29-42-62	34-51-68	40-54-74	46-57-80	52-64-89	57-70-97	61-76-106
24 x16 20 x18	**Throw**	**22½°**	13-21-39	19-28-46	23-34-50	28-40-54	32-43-59	36-46-64	42-51-71	46-56-78	49-61-85
20 x20	**ft**	**45°**	7-13-24	12-17-28	15-21-31	17-25-34	20-27-37	23-28-40	26-32-45	28-35-49	32-38-53
Ac = **2.78** ft²	**cfm**		**835**	**1110**	**1390**	**1670**	**1950**	**2220**	**2780**	**3340**	**3890**
36 x 12 30 x 14	**NC**		—	—	**18**	**23**	**28**	**32**	**38**	**44**	**49**
26 x 16 24 x 18		**0°**	17-28-52	24-36-60	31-45-67	37-53-73	42-57-79	48-57-79	55-68-95	60-75-104	65-81-112
22 x 20	**Throw**	**22½°**	14-22-42	19-29-48	24-36-54	30-42-58	34-46-63	38-49-68	44-54-76	48-60-83	52-65-90
	ft	**45°**	8-14-26	13-18-30	15-22-33	18-27-37	21-28-40	24-30-42	28-34-47	30-37-52	33-40-56
Ac = **3.11** ft²	**cfm**		**935**	**1240**	**1560**	**1870**	**2180**	**2490**	**3110**	**3730**	**4350**
60 x 8 26 x 18	**NC**		—	—	**19**	**24**	**29**	**33**	**39**	**45**	**50**
48 x10 24 x20		**0°**	18-29-55	25-38-63	36-48-71	43-56-78	50-60-84	51-64-90	58-72-100	64-79-110	69-86-118
40 x12 36 x14	**Throw**	**22½°**	15-23-44	11-31-50	29-38-57	35-45-62	40-48-67	40-51-72	46-58-80	51-63-88	55-69-94
30 x16	**ft**	**45°**	8-15-28	13-19-31	18-23-35	21-28-39	23-30-42	26-32-45	29-36-50	32-40-55	35-43-59
Ac = **3.61** ft²	**cfm**		**1080**	**1440**	**1800**	**2170**	**2530**	**2890**	**3610**	**4330**	**5050**
60 x 10 30 x 18	**NC**		—	—	**20**	**25**	**30**	**34**	**40**	**46**	**51**
48 x 12 36 x 20		**0°**	19-31-59	28-40-68	34-50-76	40-59-84	47-35-90	54-69-97	63-78-108	69-86-118	75-93-128
36 x 16	**Throw**	**22½°**	15-24-47	22-32-54	28-40-61	32-48-67	37-52-72	43-55-78	50-62-86	55-69-94	60-74-102
	ft	**45°**	10-15-29	14-20-34	17-24-38	20-30-42	23-32-45	27-35-48	31-39-54	35-43-59	38-46-64
Ac = **4.65** ft²	**cfm**		**1400**	**1860**	**2320**	**2790**	**3260**	**3720**	**4650**	**5580**	**6510**
72 x 10 30 x 24	**NC**		—	—	**21**	**26**	**31**	**35**	**41**	**47**	**52**
48 x 16 36 x 20		**0°**	21-35-67	31-46-78	38-57-87	47-69-95	54-74-103	61- 79-110	72-89-123	79-97-135	86-105-146
	Throw	**22½°**	17-28-54	24-36-62	31-46-70	37-55-76	43-59-82	49-63-88	58-71-98	63-78-108	69-84-117
	ft	**45°**	11-17-33	16-23-39	19-29-43	24-34-48	27-37-52	31-40-55	36-44-61	39-49-67	43-52-73
Ac = **5.58** ft²	**cfm**		**1670**	**2230**	**2790**	**3350**	**3910**	**4460**	**5580**	**6700**	**7810**
72 x 12 36 x 24	**NC**		—	**15**	**22**	**27**	**32**	**36**	**42**	**48**	**53**
60 x 14 48 x 18		**0°**	23-38-73	33-50-85	42-63-95	50-76-104	58-81-113	67-87-122	79-97-135	87-107-148	93-116-160
	Throw	**22½°**	19-31-58	27-40-68	34-50-76	40-61-83	47-65-90	53-70-98	63-78-108	70-86-118	74-93-130
	ft	**45°**	12-19-37	17-24-43	21-32-48	24-38-52	30-41-57	33-44-61	39-49-67	45-53-74	47-58-80
					NC 20		**30**		**40**		

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7. Blanks (—) indicate an NC level below 15.
8. The stated deflection settings refer to horizontal deflections. Horizontal deflection is adjusted by means of the optional individually adjustable rear blades.

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Product Information

Models

Grilles

1/2 in. [13] Square Mesh	**LG50**
3/4 in. [19] Square Mesh	**LG75**
1 in. [25] Square Mesh	**LG100**
2 in. x 1/2 in. [63 x 13] Rectangular Mesh	**LG250**

Register

3/4 in. [19] Square Mesh c/w Opposed Blade Damper	**LG75D**

Price LG Series lattice faced grilles are available for air distribution, architectural application and security covers. These can be fabricated in a choice of materials to suit your desired application.

Features

- Choice of material construction:

14 GA Steel	**STL**
14 GA Aluminum	**AL**
20 GA Stainless Steel	**SS**

- Optional gauge material available on request.

Fastening

Straight Holes c/w oval-head screws	**H**
Countersunk screwholes c/w oval-head screws (N/A with stainless steel construction)	**CS**

Finish

White Powder Coat Stl/Al #4 Stainless Steel	**B12**

For optional and special finishes see color matrix.

Available Sizes

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**96 in. x 24 in.** [2438 x 610]

LG75D

Minimum	Maximum*
5 in. x 3 in. [127 x 76]	**30 in. x 12 in.** [762 x 305]

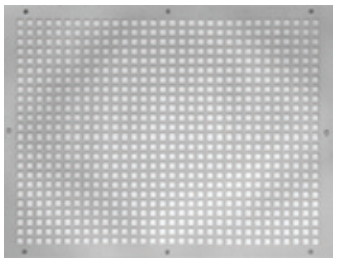
* Overall

- Heights over 24 in. [610] are supplied in sections for field assembly.
- Daylight opening dimensions must be in increments of specified hole pattern.

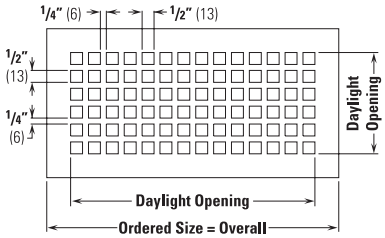
✓ Product Selection Checklist

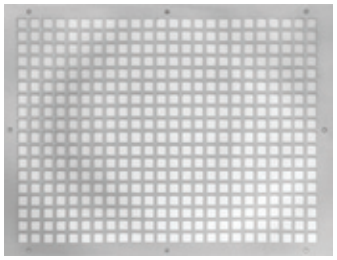
1] Select Daylight Opening based on desired application characteristics.
2] Select Outlet Type by model number (mesh size).
3] Select Unit Overall Size L x W.
4] Select Fastening Type (A is standard).
5] Select Material Construction desired.
6] Select Finish.

Example:
48 3/4 in. x 10 3/4 in. / LG75 / A / STL / B12

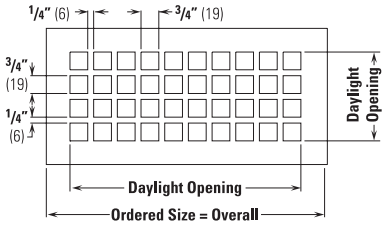


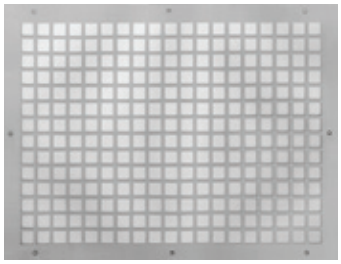
MODEL LG50





MODEL LG75





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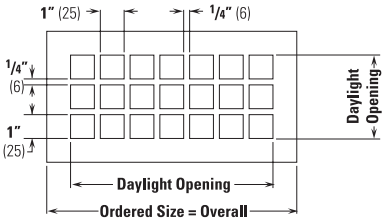
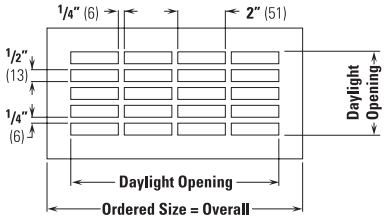
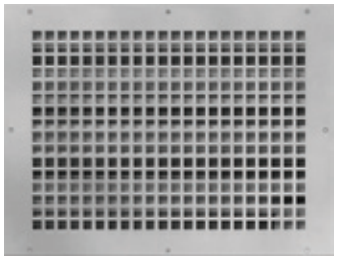
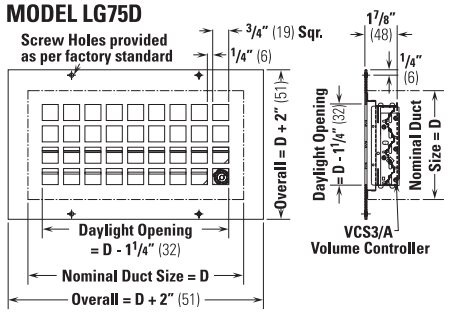


MODEL LG250





MODEL LG75D



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Daylight Opening Schedule

LG75 – 3/4 in. square mesh

No. of Holes	LG75 3/4 in. Sq. Mesh (Imperial)	LG75 19 mm Sq. Mesh (Metric)	No. of Holes	LG75 3/4 in. Sq. Mesh (Imperial)	LG75 19 mm Sq. Mesh (Metric)	No. of Holes	LG75 3/4 in. Sq. Mesh (Imperial)	LG75 19 mm Sq. Mesh (Metric)
1	3/4 in.	19	33	32 3/4 in.	832	65	64 3/4 in.	1645
2	1 3/4 in.	44	34	33 3/4 in.	857	66	65 3/4 in.	1670
3	2 3/4 in.	70	35	34 3/4 in.	883	67	66 3/4 in.	1695
4	3 3/4 in.	95	36	35 3/4 in.	908	68	67 3/4 in.	1721
5	4 3/4 in.	121	37	36 3/4 in.	933	69	68 3/4 in.	1746
6	5 3/4 in.	146	38	37 3/4 in.	959	70	69 3/4 in.	1772
7	6 3/4 in.	171	39	38 3/4 in.	984	71	70 3/4 in.	1797
8	7 3/4 in.	197	40	39 3/4 in.	1010	72	71 3/4 in.	1822
9	8 3/4 in.	222	41	40 3/4 in.	1035	73	72 3/4 in.	1848
10	9 3/4 in.	248	42	41 3/4 in.	1060	74	73 3/4 in.	1873
11	10 3/4 in.	273	43	42 3/4 in.	1086	75	74 3/4 in.	1899
12	11 3/4 in.	298	44	43 3/4 in.	1111	76	75 3/4 in.	1924
13	12 3/4 in.	324	45	44 3/4 in.	1137	77	76 3/4 in.	1949
14	13 3/4 in.	349	46	45 3/4 in.	1162	78	77 3/4 in.	1975
15	14 3/4 in.	375	47	46 3/4 in.	1187	79	78 3/4 in.	2000
16	15 3/4 in.	400	48	47 3/4 in.	1213	80	79 3/4 in.	2026
17	16 3/4 in.	425	49	48 3/4 in.	1238	81	80 3/4 in.	2051
18	17 3/4 in.	451	50	49 3/4 in.	1264	82	81 3/4 in.	2076
19	18 3/4 in.	476	51	50 3/4 in.	1289	83	82 3/4 in.	2102
20	19 3/4 in.	502	52	51 3/4 in.	1314	84	83 3/4 in.	2127
21	20 3/4 in.	527	53	52 3/4 in.	1340	85	84 3/4 in.	2153
22	21 3/4 in.	552	54	53 3/4 in.	1365	86	85 3/4 in.	2178
23	22 3/4 in.	578	55	54 3/4 in.	1391	87	86 3/4 in.	2203
24	23 3/4 in.	603	56	55 3/4 in.	1416	88	87 3/4 in.	2229
25	24 3/4 in.	629	57	56 3/4 in.	1441	89	88 3/4 in.	2254
26	25 3/4 in.	654	58	57 3/4 in.	1467	90	89 3/4 in.	2280
27	26 3/4 in.	679	59	58 3/4 in.	1492	91	90 3/4 in.	2305
28	27 3/4 in.	705	60	59 3/4 in.	1518	92	91 3/4 in.	2330
29	28 3/4 in.	730	61	60 3/4 in.	1543	93	92 3/4 in.	2356
30	29 3/4 in.	756	62	61 3/4 in.	1568	94	93 3/4 in.	2381
31	30 3/4 in.	781	63	62 3/4 in.	1594	—	—	—
32	31 3/4 in.	806	64	63 3/4 in.	1619	—	—	—

LG250 – 2 x 1/2 in. rectangular mesh

No. of Holes	Width (inch)	Width [mm]	Height (inch)	Height [mm]	No. of Holes	Width (inch)	Width [mm]	Height (inch)	Height [mm]	No. of Holes	Width (inch)	Width [mm]	Height (inch)	Height [mm]
1	2 in.	51	1/2 in.	13	19	42 1/2 in.	1079	14 in.	356	37	83 in.	2108	—	—
2	4 1/4 in.	108	1 1/4 in.	32	20	44 3/4 in.	1136	14 3/4 in.	375	38	85 1/4 in.	2165	—	—
3	6 1/2 in.	165	2 in.	51	21	47 in.	1194	15 1/2 in.	394	39	87 1/2 in.	2222	—	—
4	8 3/4 in.	222	2 3/4 in.	70	22	49 1/4 in.	1250	16 1/4 in.	412	40	89 3/4 in.	2280	—	—
5	11 in.	279	3 1/2 in.	89	23	51 1/2 in.	1308	17 in.	432	41	92 in.	2337	—	—
6	13 1/4 in.	337	4 1/4 in.	108	24	53 3/4 in.	1365	17 3/4 in.	451	—	—	—	—	—
7	15 1/2 in.	394	5 in.	127	25	56 in.	1422	18 1/2 in.	470	—	—	—	—	—
8	17 3/4 in.	451	5 3/4 in.	146	26	58 1/4 in.	1480	19 1/4 in.	489	—	—	—	—	—
9	20 in.	508	6 1/2 in.	165	27	60 1/2 in.	1537	20 in.	508	—	—	—	—	—
10	22 1/4 in.	565	7 1/4 in.	184	28	62 3/4 in.	1594	20 3/4 in.	527	—	—	—	—	—
11	24 1/2 in.	622	8 in.	203	29	65 in.	1651	21 1/2 in.	546	—	—	—	—	—
12	26 3/4 in.	679	8 3/4 in.	222	30	67 1/4 in.	1708	22 1/4 in.	565	—	—	—	—	—
13	29 in.	737	9 1/2 in.	241	31	69 1/2 in.	1765	—	—	—	—	—	—	—
14	31 1/4 in.	794	10 1/4 in.	260	32	71 3/4 in.	1822	—	—	—	—	—	—	—
15	33 1/2 in.	851	11 in.	279	33	74 in.	1880	—	—	—	—	—	—	—
16	35 3/4 in.	908	11 3/4 in.	298	34	76 1/4 in.	1937	—	—	—	—	—	—	—
17	38 in.	965	12 1/2 in.	317	35	78 1/2 in.	1994	—	—	—	—	—	—	—
18	40 1/4 in.	1022	13 1/4 in.	336	36	80 3/4 in.	2051	—	—	—	—	—	—	—

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Daylight Opening Schedule

LG100 – 1 in. square mesh

No. of Holes	LG100 1 in. Sq. Mesh (Imperial)	LG100 25 mm Sq. Mesh (Metric)	No. of Holes	LG100 1 in. Sq. Mesh (Imperial)	LG100 25 mm Sq. Mesh (Metric)	No. of Holes	LG100 1 in. Sq. Mesh (Imperial)	LG100 25 mm Sq. Mesh (Metric)
1	1 in.	25	27	33 1/2 in.	851	53	66 in.	1676
2	2 1/4 in.	57	28	34 3/4 in.	883	54	67 1/4 in.	1708
3	3 1/2 in.	89	29	36 in.	914	55	68 1/2 in.	1740
4	4 3/4 in.	121	30	37 1/4 in.	946	56	69 3/4 in.	1772
5	6 in.	152	31	38 1/2 in.	978	57	71 in.	1803
6	7 1/4 in.	184	32	39 3/4 in.	1010	58	72 1/4 in.	1835
7	8 1/2 in.	216	33	41 in.	1041	59	73 1/2 in.	1867
8	9 3/4 in.	248	34	42 1/4 in.	1073	60	74 3/4 in.	1899
9	11 in.	279	35	43 1/2 in.	1105	61	76 in.	1930
10	12 1/4 in.	311	36	44 3/4 in.	1137	62	77 1/4 in.	1962
11	13 1/2 in.	343	37	46 in.	1168	63	78 1/2 in.	1994
12	14 3/4 in.	375	38	47 1/4 in.	1200	64	79 3/4 in.	2026
13	16 in.	406	39	48 1/2 in.	1232	65	81 in.	2057
14	17 1/4 in.	438	40	49 3/4 in.	1264	66	82 1/4 in.	2089
15	18 1/2 in.	470	41	51 in.	1295	67	83 1/2 in.	2121
16	19 3/4 in.	502	42	52 1/4 in.	1327	68	84 3/4 in.	2153
17	21 in.	533	43	53 1/2 in.	1359	69	86 in.	2184
18	22 1/4 in.	540	44	54 3/4 in.	1391	70	87 1/4 in.	2216
19	23 1/2 in.	597	45	56 in.	1422	71	88 1/2 in.	2248
20	24 3/4 in.	629	46	57 1/4 in.	1454	72	89 3/4 in.	2280
21	26 in.	660	47	58 1/2 in.	1486	73	91 in.	2311
22	27 1/4 in.	692	48	59 3/4 in.	1518	74	92 1/4 in.	2343
23	28 1/2 in.	724	49	61 in.	1549	75	93 1/2 in.	2375
24	29 3/4 in.	756	50	62 1/4 in.	1581	—	—	—
25	31 in.	787	51	63 1/2 in.	1613	—	—	—
26	32 1/4 in.	819	52	64 3/4 in.	1645	—	—	—

LG50 – 1/2 in. square mesh

No. of Holes	LG50 1/2 in. Sq. Mesh (Imperial)	LG50 13 mm Sq. Mesh (Metric)	No. of Holes	LG50 1/2 in. Sq. Mesh (Imperial)	LG50 13 mm Sq. Mesh (Metric)	No. of Holes	LG50 1/2 in. Sq. Mesh (Imperial)	LG50 13 mm Sq. Mesh (Metric)	No. of Holes	LG50 1/2 in. Sq. Mesh (Imperial)	LG50 13 mm Sq. Mesh (Metric)
1	1/2 in.	13	31	23 in.	584	61	45 1/2 in.	1156	91	68 in.	1727
2	1 1/4 in.	32	32	23 3/4 in.	603	62	46 1/4 in.	1175	92	68 3/4 in.	1746
3	2 in.	51	33	24 1/2 in.	622	63	47 in.	1194	93	69 1/2 in.	1765
4	2 3/4 in.	70	34	25 1/4 in.	641	64	47 3/4 in.	1213	94	70 1/4 in.	1784
5	3 1/2 in.	89	35	26 in.	660	65	48 1/2 in.	1232	95	71 in.	1803
6	4 1/4 in.	108	36	26 3/4 in.	679	66	49 1/4 in.	1251	96	71 3/4 in.	1822
7	5 in.	127	37	27 1/2 in.	698	67	50 in.	1270	97	72 1/2 in.	1841
8	5 3/4 in.	146	38	28 1/4 in.	718	68	50 1/4 in.	1289	98	73 3/4 in.	1860
9	6 1/2 in.	165	39	29 in.	737	69	51 1/2 in.	1308	99	74 in.	1880
10	7 1/4 in.	184	40	29 3/4 in.	756	70	52 1/4 in.	1327	100	74 3/4 in.	1899
11	8 in.	203	41	30 1/2 in.	775	71	53 in.	1346	101	75 1/2 in.	1918
12	8 3/4 in.	222	42	31 1/4 in.	794	72	53 3/4 in.	1365	102	76 1/4 in.	1937
13	9 1/2 in.	241	43	32 in.	813	73	54 1/2 in.	1384	103	77 in.	1956
14	10 1/4 in.	260	44	32 3/4 in.	832	74	55 1/4 in.	1403	104	77 3/4 in.	1975
15	11 in.	279	45	33 1/2 in.	851	75	56 in.	1422	105	78 1/2 in.	1994
16	11 3/4 in.	298	46	34 1/4 in.	870	76	56 3/4 in.	1441	106	79 1/4 in.	2013
17	12 1/2 in.	317	47	35 in.	889	77	57 1/2 in.	1460	107	80 in.	2032
18	13 1/4 in.	337	48	35 3/4 in.	908	78	58 1/4 in.	1480	108	80 3/4 in.	2051
19	14 in.	356	49	36 1/2 in.	927	79	59 in.	1499	109	81 1/2 in.	2070
20	14 3/4 in.	375	50	37 1/2 in.	952	80	59 3/4 in.	1518	110	82 1/4 in.	2089
21	15 1/2 in.	394	51	38 in.	965	81	60 1/2 in.	1537	111	83 in.	2108
22	16 1/4 in.	413	52	38 3/4 in.	984	82	61 1/4 in.	1556	112	83 3/4 in.	2127
23	17 in.	432	53	39 1/2 in.	1003	83	62 in.	1575	113	84 1/2 in.	2146
24	17 3/4 in.	451	54	40 1/4 in.	1022	84	62 3/4 in.	1594	114	85 1/4 in.	2165
25	18 1/2 in.	470	55	41 in.	1041	85	63 1/2 in.	1613	115	86 in.	2184
26	19 1/4 in.	489	56	41 3/4 in.	1060	86	64 1/4 in.	1632	116	86 3/4 in.	2203
27	20 in.	508	57	42 1/2 in.	1079	87	65 in.	1651	117	87 1/2 in.	2222
28	20 3/4 in.	527	58	43 1/4 in.	1099	88	65 3/4 in.	1670	118	88 1/4 in.	2242
29	21 1/2 in.	546	59	44 in.	1118	89	66 1/2 in.	1689	119	89 in.	2261
30	22 1/4 in.	565	60	44 3/4 in.	1137	90	67 1/4 in.	1708	120	89 3/4 in.	2280

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Return Air Application

Sound

NC = 14 LOG A + 84 LOG V - 218

A = Free Area, ft^2

V = $\frac{\text{Air Flow, cfm}}{\text{Free Area, } ft^2}$

NC based on 10dB room absorption.

Negative Static Pressure

S.P. = $1.36 \left(\frac{V}{4005}\right)^2$

V = $\frac{\text{Air Flow, cfm}}{\text{Free Area, } ft^2}$

S.P. = Static Pressure Drop, in. w.g.

Free Area

F.A. = No. of Holes x .0017 (LG50)
.0039 (LG75)
.0069 (LG100)
.0069 (LG250)

Number of holes are determined from Daylight Opening Schedules on pages D67 and D68.

Example

Determine performance of an LG100 grille with a daylight opening of 6 in. x 16 in. at 400 cfm.

No. of Holes: 6 in. = 5
16 in. = 13
5 x 13 = 65

F.A. = 65 x .0069 = .449 ft^2

V = 400/.449 = 891 fpm

S.P. = $1.36 \left(\frac{891}{4005}\right)^2$ = .067 in. w.g.

NC = 14 LOG (.449) + 84 LOG (891) - 218 = 25

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

STG Series

Product Information

Models

Sightproof

Heavy Duty Steel Construction **STG1**

Price STG Series offer the largest free area possible with a completely sightproof core. They are used in doors and partitions to allow air flow to a space that is not directly served by a ducted source of supply air or a ducted outlet for return or exhaust air.

Features

Heavy duty steel construction.

Border Styles

A – Channel border, on-site framing by others.

B – 1 5/16 in. [33] flat border, one side only. Countersunk screwhole fastening.

BF – 1 5/16 in. [33] flat border, both sides. Countersunk screwhole fastening.

Finish

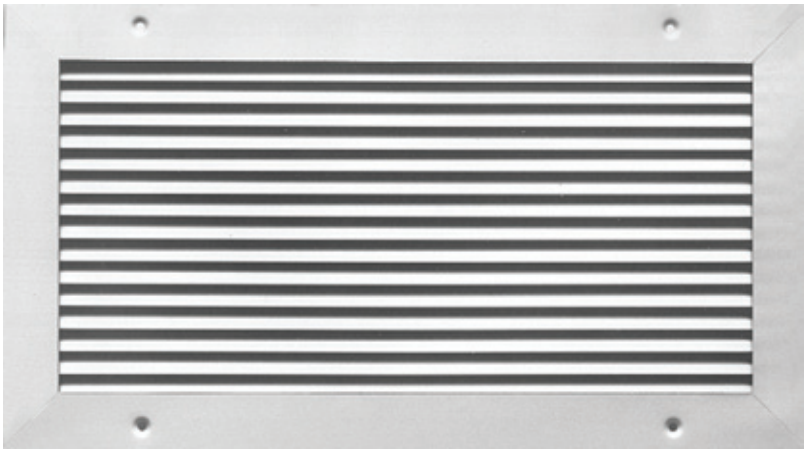
Aluminum Powder Coat **B15**

For optional and special finishes see color matrix.

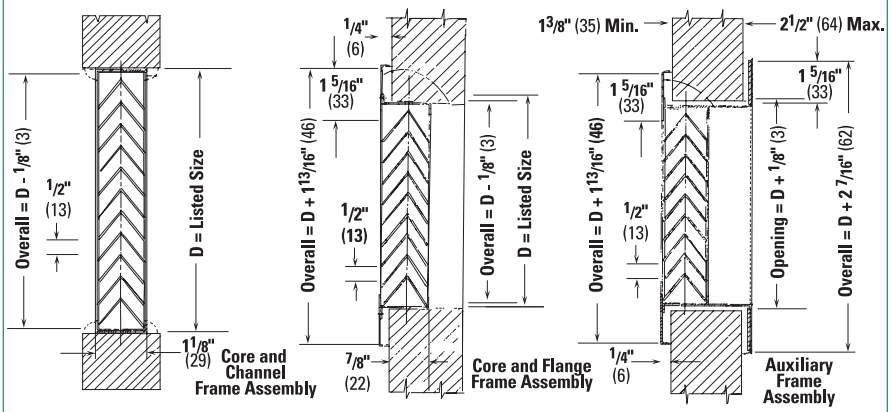
Available Sizes

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**48 in. x 36 in.** [1219 x 914]

* One-piece



Available Mounting Styles



A – Channel border

B – 1 1/4 in. [32] flat border, one side only.

BF – 1 1/4 in. [32] flat border, both sides.

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Border Style (BF is standard).
4] Select Finish.

Example: 24 in. x 24 in. / STG1 / BF / B15

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Core Area Sq. ft	Nominal Size			Core Velocity / Velocity Pressure / Negative s.p.	100 .0006 .011	150 .001 .026	200 .002 .046	250 .004 .073	300 .006 .104	350 .008 .141	400 .010 .186
0.25	10 x 4	7 x 6		**cfm**	25	38	50	63	75	88	100
	8 x 5			**NC**	—	—	—	—	16	20	24
0.50	24 x 4	16 x 6		**cfm**	50	75	100	125	150	175	200
	18 x 5			**NC**	—	—	—	20	26	29	32
0.75	32 x 4	20 x 6	12 x 10	**cfm**	75	113	150	188	225	263	300
	26 x 5	16 x 8		**NC**	—	—	19	25	30	34	37
1.0	28 x 6	16 x 10		**cfm**	100	150	200	250	300	350	400
	20 x 8	14 x 12		**NC**	—	15	23	29	33	37	41
1.5	30 x 8	20 x 12		**cfm**	150	225	300	375	450	525	600
	24 x 10	16 x 14		**NC**	—	20	28	33	38	42	45
2.0	40 x 8	26 x 12	20 x 16	**cfm**	200	300	400	500	600	700	800
	32 x 10	22 x 14		**NC**	—	24	31	37	42	46	49
2.5	40 x 10	28 x 14	22 x 18	**cfm**	250	375	500	625	750	875	1000
	32 x 12	24 x 16		**NC**	16	27	34	40	44	48	52
3.0	40 x 12	30 x 16	24 x 20	**cfm**	300	450	600	750	900	1050	1200
	34 x 14	26 x 18		**NC**	18	29	36	42	47	50	54
3.5	38 x 14	30 x 18	24 x 22	**cfm**	350	525	700	875	1050	1225	1400
	34 x 16	28 x 20		**NC**	20	31	38	44	48	52	56
4.0	38 x 16	32 x 20	26 x 24	**cfm**	400	600	800	1000	1200	1400	1600
	34 x 18	28 x 22		**NC**	22	32	40	45	50	54	57
4.5	38 x 18	32 x 22	26 x 26	**cfm**	450	675	900	1125	1350	1575	1800
	34 x 20	28 x 24		**NC**	23	34	41	47	51	55	59
5.0	38 x 20	32 x 24	28 x 28	**cfm**	500	750	1000	1250	1500	1750	2000
	34 x 22	30 x 26		**NC**	25	35	42	48	53	57	60

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure
4. NC values are based on room absorption of 10 dB, re 10^{-12} watts.
5. Blanks (—) indicate an NC level below 15.

ATG Series

EXTRUDED ALUMINUM

Product Information

Models

Sightproof

Aluminum Construction	**ATG1**
Heavy Duty Aluminum	**ATGH**

Lightproof Heavy Duty

Aluminum Construction	**ATG2**

Price ATG Series offer the largest free area possible with a completely sightproof or lightproof core. They are used in doors and partitions to allow air flow to a space that is not directly served by a ducted source of supply air or a ducted outlet for return or exhaust air.

ATG1 grilles have finely spaced blades for an attractive sightproof appearance and are designed for applications in doors or partitions with sections as thin as 1 3/8 in. [35].

ATG2 grilles have been designed for use in rooms that must be kept lightproof, such as a darkroom. Finished in flat black.

ATGH grilles feature rugged mandrel tube construction of heavy gauge extruded aluminum and have been designed for severe use applications.

Border Styles

A – Channel border, on-site framing by others.
B – Border, one side only. Countersunk screwhole fastening.
C – Border both sides. Concealed fastening (ATG1 only).
BF – Border both sides. Countersunk screwhole fastening.

Finish

Aluminum Powder Coat (ATG1, ATGH) **B15**
Black (ATG2) **B17**

For optional and special finishes see color matrix.

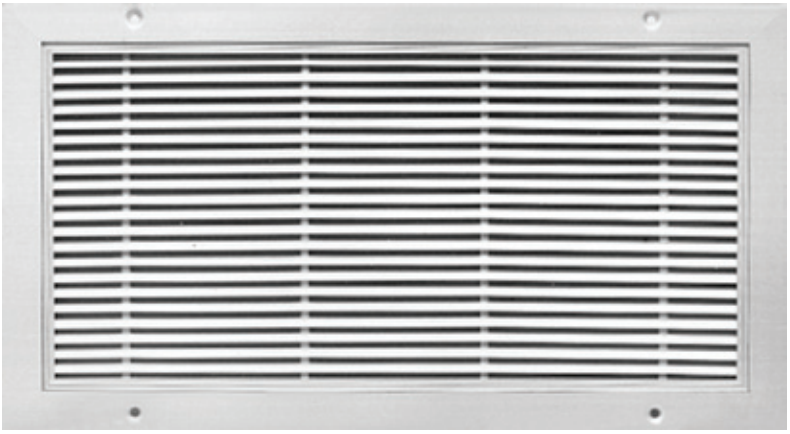
Available Sizes

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**32 in. x 36 in.** [813 x 914]

* One-piece

- **ATGH** available up to maximum size of 48 in. x 30 in. [1219 x 762].

Model ATG 1



Model ATGH

✓ Product Selection Checklist

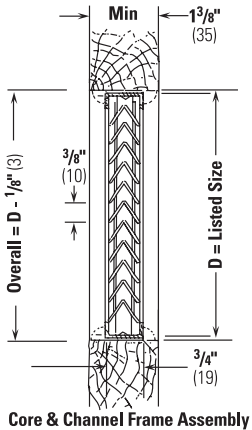
1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Border Style (BF is standard).
4] Select Finish.

Example: 24 in. x 24 in. / ATG1 / BF / B15

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

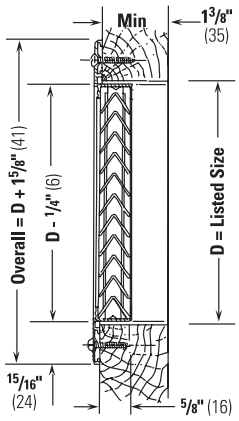
Mounting Styles

ATG 1 **A** – Channel border



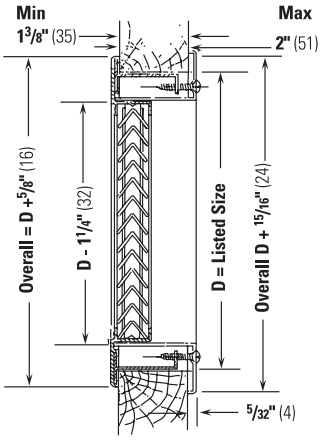
Core & Channel Frame Assembly
Wood Trim by Others

B – 15/16 in. [24] flat border, one side only.



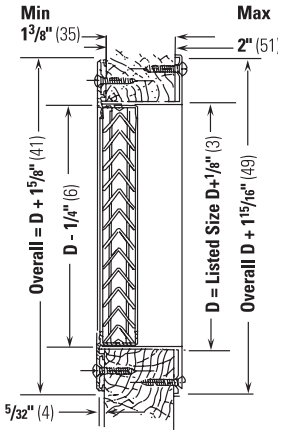
Core & Flange Frame Assembly

C – 15/16 in. [24] flat border, both sides, concealed fastening.



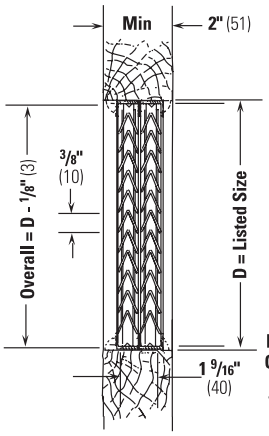
Concealed Mounting of Flange Frame

BF – 15/16 in. [24] flat border, both sides.



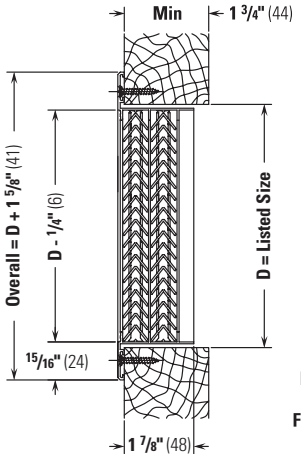
Auxiliary Frame Assembly

ATG2 **A** – Channel border



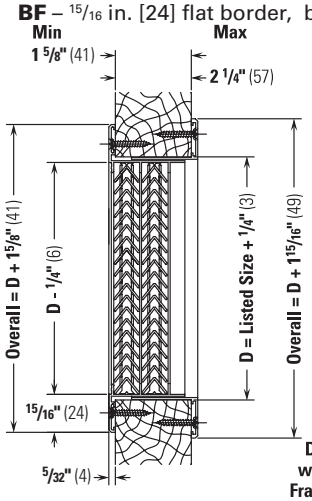
Double Core & Channel Frame Assembly. Wood Trim by Others

B – 15/16 in. [24] flat border, one side only.



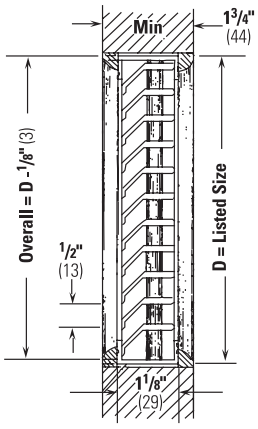
Double Core & Flange Type Frame Assembly

BF – 15/16 in. [24] flat border, both sides.



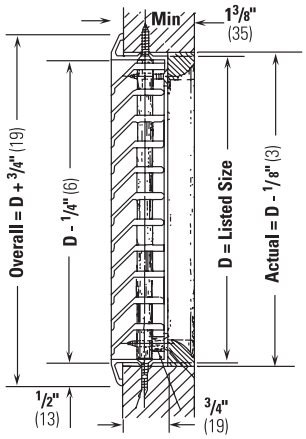
Double Core with Auxiliary Frame Assembly

ATGH **A** – Channel border



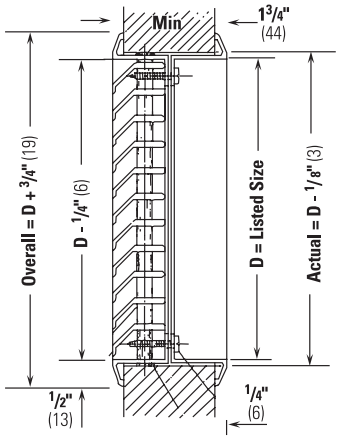
Core and Channel Frame Assembly
Wood Trim by Others

B – 1/2 in. [13] border, one side only.



Core and Flange Type Frame Assembly
Wood Trim by Others

BF – 1/2 in. [13] border, both sides.



Core and Double Flange
Auxiliary Frame Assembly

GRILLES AND REGISTERS

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Core Area	Nominal			Core Velocity / Velocity Pressure	100 .0006	150 .001	200 .002	250 .004	300 .006	350 .008	400 .010
Sq. ft	Size			Negative s.p.	.012	.019	.048	.075	.108	.147	.193
0.25	10 x 4	7 x 6		**cfm**	25	38	50	63	75	88	100
	8 x 5			**NC**	—	17	23	28	32	35	38
0.50	24 x 4	16 x 6		**cfm**	50	75	100	125	150	175	200
	18 x 5			**NC**	—	20	27	32	36	39	42
0.75	32 x 4	20 x 6	12 x 10	**cfm**	75	113	150	188	225	263	300
	26 x 5	16 x 8		**NC**	—	23	29	34	38	41	44
1.0	28 x 6	16 x 10		**cfm**	100	150	200	250	300	350	400
	20 x 8	14 x 12		**NC**	15	24	30	35	39	43	46
1.5	30 x 8	20 x 12		**cfm**	150	225	300	375	450	525	600
	24 x 10	16 x 14		**NC**	17	26	32	37	41	45	48
2.0	40 x 8	26 x 12	20 x 16	**cfm**	200	300	400	500	600	700	800
	32 x 10	22 x 14		**NC**	19	28	34	39	43	46	49
2.5	40 x 10	28 x 14	22 x 18	**cfm**	250	375	500	625	750	875	1000
	32 x 12	24 x 16		**NC**	20	29	35	40	44	47	50
3.0	40 x 12	30 x 16	24 x 20	**cfm**	300	450	600	750	900	1050	1200
	34 x 14	26 x 18		**NC**	21	30	36	41	45	48	51
3.5	38 x 14	30 x 18	24 x 22	**cfm**	350	525	700	875	1050	1225	1400
	34 x 16	28 x 20		**NC**	22	31	37	42	46	49	52
4.0	38 x 16	32 x 20	26 x 24	**cfm**	400	600	800	1000	1200	1400	1600
	34 x 18	28 x 22		**NC**	22	31	38	43	47	50	53
4.5	38 x 18	32 x 22	26 x 26	**cfm**	450	675	900	1125	1350	1575	1800
	34 x 20	28 x 24		**NC**	23	32	38	43	47	51	54
5.0	38 x 20	32 x 24	28 x 28	**cfm**	500	750	1000	1250	1500	1750	2000
	34 x 22	30 x 26		**NC**	23	32	39	44	48	51	54

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = Static Pressure
4. NC values are based on room absorption of 10 dB, re 10^{-12} watts.
5. Blanks (—) indicate an NC level below 15.
6. *Negative s.p. for Series ATG2 is two times the value shown above for Series ATG 1.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Core Area Sq. ft	Nominal Size			Core Velocity Velocity Pressure Negative s.p.	100 .0006 .010	150 .001 .022	200 .002 .039	250 .004 .060	300 .006 .087	350 .008 .118	400 .010 .155
0.25	10 x 4	7 x 6		**cfm**	25	38	50	63	75	88	100
	8 x 5			**NC**	—	—	—	17	22	25	29
0.50	20 x 4	14 x 6		**cfm**	50	75	100	125	150	175	200
	16 x 5			**NC**	—	—	—	19	23	27	31
0.75	30 x 4	20 x 6	12 x 10	**cfm**	75	113	150	188	225	263	300
	24 x 5	14 x 8		**NC**	—	—	—	20	24	29	32
1.0	26 x 6	16 x 10		**cfm**	100	150	200	250	300	350	400
	20 x 8	16 x 14		**NC**	—	—	15	21	25	29	33
1.5	28 x 8	20 x 12		**cfm**	150	225	300	375	450	525	600
	22 x 10	16 x 14		**NC**	—	—	16	22	26	30	34
2.0	30 x 10	20 x 14	20 x 16	**cfm**	200	300	400	500	600	700	800
	26 x 12	18 x 16		**NC**	—	—	17	23	28	31	34
2.5	30 x 12	24 x 16	22 x 18	**cfm**	250	375	500	625	750	875	1000
	26 x 14	20 x 18		**NC**	—	—	17	22	27	31	35
3.0	38 x 12	28 x 16	22 x 20	**cfm**	300	450	600	750	900	1050	1200
	32 x 14	26 x 18		**NC**	—	—	18	23	28	32	35
3.5	38 x 14	30 x 18	24 x 22	**cfm**	350	525	700	875	1050	1225	1400
	34 x 16	26 x 20		**NC**	—	—	18	24	28	32	36
4.0	38 x 16	30 x 20	26 x 24	**cfm**	400	600	800	1000	1200	1400	1600
	34 x 18	28 x 22		**NC**	—	—	18	24	29	33	36
4.5	38 x 18	30 x 22	26 x 26	**cfm**	450	675	900	1125	1350	1575	1800
	34 x 20	28 x 24		**NC**	—	—	19	24	29	33	36
5.0	38 x 20	32 x 24	28 x 28	**cfm**	500	750	1000	1250	1500	1750	2000
	34 x 22	30 x 26		**NC**	—	—	19	25	29	33	37

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
   s.p. = Static Pressure
4. NC values are based on room absorption of 10 dB, re 10^{-12} watts.
5. Blanks (—) indicate an NC level below 15.
6. *Negative s.p. for Series ATG2 is two times the value shown above for Series ATG 1.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Louvered Face Supply and Return
20 / 30 and 60 / 70 Airfoil Series

EXTRUDED ALUMINUM

Product Overview

Price 20 / 30 Series Supply grilles and registers feature premium quality extruded aluminum construction. From smooth, solid corners to precise airfoil louvers, the 20 / 30 series makes no compromise on quality. Extruded aluminum construction ensures the precise profile required for the airfoil blade, with crisp leading and trailing edges for non-turbulent air flow. The net result is an air outlet with superior sound and pressure drop performance to complement its pleasing architectural appearance.

Features

- Extruded aluminum blades and border.
- Individually adjustable airfoil blades frictionized by a stainless steel tensioning device.
- Two single and two double deflection cores available.
- Four border styles are available for surface mounted applications.
- Precision mitered corners.
- Optional mounting frames accent grille border and protect wall surfaces during grille removal.
- Finished to Price standards.
- Optional opposed blade damper available in coated steel **(D)** or aluminum **(DAL)** with Mill finish.

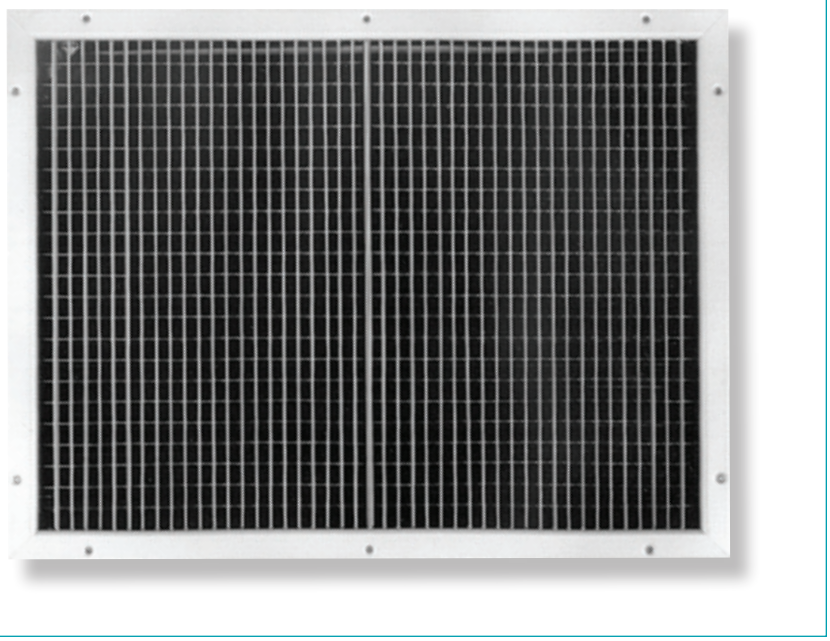
Price 60 / 70 Series Return grilles and registers feature premium quality extruded aluminum construction, resulting in clean, crisp detailing to blend with almost any architectural surrounding. Heavy extruded aluminum blades are fixed at 45° to minimize see-through. Price 60 / 70 series returns match in detail and complement the 20 / 30 series supply grilles.

Features

- Extruded aluminum blades and border.
- Two core styles available.
- Five border styles, with precision mitered corners, are available for surface mounted or T-bar Lay-in applications.
- Optional mounting frames accent grille border and protect wall surfaces during grille removal.
- Finished to Price standards.
- Optional opposed blade damper available in coated steel **(D)** or aluminum with Mill finish **(DAL)**.

Models

Louvered Supply	
Single Deflection	
3/4 in. [19] Blade Spacing	**21**
1/2 in. [13] Blade Spacing	**31**
Double Deflection	
3/4 in. [19] Blade Spacing	**22**
1/2 in. [13] Blade Spacing	**32**
Louvered Return	
Fixed Louvers, 45° Deflection	
3/4 in. [19] Louver Spacing	**60**
1/2 in. [13] Louver Spacing	**70**



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

EXTRUDED ALUMINUM

Product Information

Double Deflection Models 22, 32

3/4 in. [19] Blade Spacing Grilles	**22**
Registers w/ Steel Damper	**22D**
w/ Aluminum Damper	**22DAL**
1/2 in. [13] Blade Spacing Grilles	**32**
Registers w/ Steel Damper	**32D**
w/ Aluminum Damper	**32DAL**

Single Deflection Models 21, 31

3/4 in. [19] Blade Spacing Grilles	**21**
Registers w/ Steel Damper	**21D**
w/ Aluminum Damper	**21DAL**
1/2 in. [13] Blade Spacing Grilles	**31**
Registers w/ Steel Damper	**31D**
w/ Aluminum Damper	**31DAL**

Mounting / Finish Options

Border Style

Surface Mount	
1 1/4 in. [32] Curved (Standard)	**C**
1 1/4 in. [32] Flat	**F**
1 in. [25] Narrow	**N**
Exposed Duct 13/16 in. [24]	**ED***
1 1/4 in. [32] Steel Flat	**SF**

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**

Optional Mounting Frame

For **F** Border	**D**

Fastening

Countersunk screwholes c/w oval-head screws	**A**
No screwholes	**Ø**
Concealed Fastening	**C**
Straight screwholes (ED border only)	**H**

Finish

White Powder Coat	**B12**

For optional and special finishes see color matrix.

Available Sizes

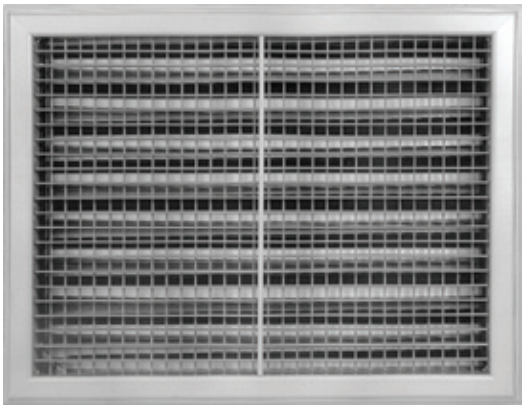
Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**36 in. x 96 in.** [914 x 2438]

* One-piece

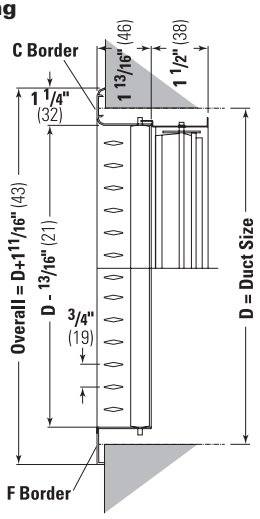
- For oversize grille construction, see pages D124.

* Note the reduced core area of ED Border per dimensioned details (page D94). Corrections for performance data are included in the performance notes.

Double Deflection 3/4 in. [19], 1/2 in. [13] Blade Spacing

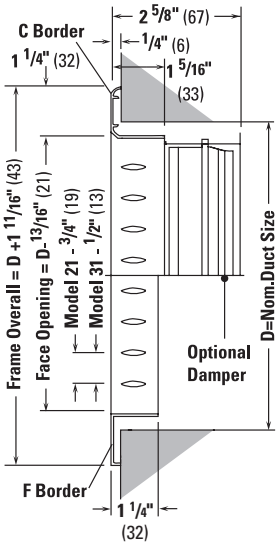


Model 22D



Single Deflection 3/4 in. [19], 1/2 in. [13] Blade Spacing

Model 31D



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Border Style according to installation requirements (C is standard).
4] Select Blade Orientation.
5] Select Mounting Frame if desired.
6] Select Fastening Type (A is standard).
7] Select Finish.

Example: 24 in. x 24 in. / 22D / C / L / A / B12

Application Recommendations:
Surface Mount – **C** Border, **A** Fastening.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size										NC 20		30		40	
	Core Velocity fpm		**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**	**1600**	**1800**
	Velocity Pressure		**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**	**.159**	**.202**
	Total	**0°**	.010	.017	.028	.038	.052	.069	.107	.156	.211	.275	.349
	Pressure	**22½°**	.011	.019	.031	.043	.058	.078	.120	.175	.237	.308	.392
		45°	.016	.029	.047	.064	.088	.117	.181	.263	.356	.464	.590
Ac = **.15** ft²	**cfm**		**45**	**60**	**75**	**90**	**105**	**120**	**150**	**180**	**210**	**240**	**270**
7 x 4 6 x 5	**NC**		—	—	—	—	—	**17**	**23**	**29**	**34**	**38**	**41**
		0°	4-6-12	5-8-14	7-10-16	8-12-17	9-13-19	11-14-20	13-16-22	14-17-24	15-19-26	16-20-28	17-22-30
	Throw	**22½°**	3-5-10	4-6-11	6-8-13	6-10-14	7-10-15	9-11-16	10-13-18	11-14-19	12-15-21	13-16-22	14-18-24
	ft	**45°**	2-3-6	3-4-7	3-5-8	4-6-9	5-7-9	5-7-10	6-8-11	7-9-12	8-9-13	8-10-14	9-11-15
Ac = **.18** ft²	**cfm**		**55**	**70**	**90**	**110**	**125**	**145**	**180**	**215**	**250**	**290**	**325**
8 x 4 7 x 5 6 x 6	**NC**		—	—	—	—	**15**	**19**	**25**	**31**	**36**	**40**	**43**
		0°	4-7-13	6-8-15	7-11-17	9-13-19	10-15-20	11-16-22	14-17-24	15-19-26	17-21-29	18-22-31	19-24-33
	Throw	**22½°**	3-6-10	5-6-12	6-9-14	7-10-15	8-12-16	9-13-18	11-14-19	12-15-21	14-17-23	14-18-25	15-19-26
	ft	**45°**	2-3-7	3-4-8	4-5-9	4-7-10	5-7-10	6-8-11	7-9-12	8-10-13	8-10-14	9-11-15	10-12-16
Ac = **. 22** ft²	**cfm**		**65**	**90**	**110**	**130**	**155**	**175**	**220**	**265**	**310**	**350**	**395**
10 x 4 8 x 5 7 x 6	**NC**		—	—	—	—	**15**	**19**	**25**	**31**	**36**	**40**	**43**
		0°	4-7-14	7-10-17	8-12-19	9-15-21	11-16-23	13-17-24	16-19-27	17-21-29	19-23-32	20-25-34	21-26-36
	Throw	**22½°**	3-611	6-8-14	6-10-15	7-12-17	9-13-18	10-14-19	13-15-22	14-17-23	15-18-26	16-20-27	17-21-29
	ft	**45°**	2-4-7	3-5-9	4-6-10	5-7-10	6-6-11	6-9-12	8-10-13	9-11-15	9-12-16	10-12-17	11-13-18
Ac = **. 26** ft²	**cfm**		**80**	**105**	**130**	**155**	**180**	**210**	**260**	**310**	**365**	**415**	**470**
12 x 4 10 x 5 8 x 6	**NC**		—	—	—	—	**16**	**20**	**26**	**32**	**37**	**41**	**44**
		0°	5-8-16	7-11-19	9-13-21	10-16-23	12-17-24	14-19-26	17-21-29	19-23-32	20-25-35	22-26-37	23-27-40
	Throw	**22½°**	4-6-13	6-9-15	7-10-17	8-13-18	10-14-19	11-15-21	14-17-23	15-18-26	16-20-28	18-21-30	18-22-32
	ft	**45°**	3-4-8	4-5-9	4-7-10	5-8-11	6-9-12	7-9-13	8-11-15	9-12-16	10-13-17	11-13-18	12-14-20
Ac = **.30** ft²	**cfm**		**90**	**120**	**150**	**180**	**210**	**240**	**300**	**360**	**420**	**480**	**540**
14 x 4	**NC**		—	—	—	—	**16**	**20**	**26**	**32**	**37**	**41**	**44**
		0°	5-9-17	8-11-20	9-14-22	11-17-24	13-19-26	15-20-28	18-23-31	20-25-34	22-27-37	24-29-40	25-30-42
	Throw	**22½°**	4-714	6-9-16	7-11-18	9-14-19	10-15-21	12-16-22	14-18-25	16-20-27	18-22-30	19-23-32	20-24-34
	ft	**45°**	3-4-8	4-6-10	5-7-11	6-8-12	7-9-13	8-10-14	9-11-16	10-12-17	11-13-19	12-14-20	12-15-21
Ac = **.34** ft²	**cfm**		**100**	**135**	**170**	**205**	**240**	**270**	**340**	**410**	**475**	**545**	**610**
16 x 4 12 x 5 10 x 6	**NC**		—	—	—	—	**17**	**21**	**27**	**33**	**38**	**42**	**45**
		0°	5-9-18	8-12-21	10-15-24	12-19-26	14-20-28	16-22-30	20-24-33	22-26-37	23-28-40	25-30-42	26-32-45
	Throw	**22½°**	4-714	6-10-17	8-12-19	10-15-21	11-16-22	13-18-24	16-19-26	18-21-30	18-22-32	20-24-34	21-26-36
	ft	**45°**	3-4-9	4-6-11	5-8-12	6-9-13	7-10-14	8-11-15	10-12-17	11-13-18	12-14-20	12-15-21	13-16-22
Ac = **.39** ft²	**cfm**		**115**	**155**	**195**	**235**	**275**	**310**	**390**	**470**	**545**	**625**	**700**
18 x 4 14 x 5 12 x 6 8 x 8	**NC**		—	—	—	—	**18**	**22**	**28**	**34**	**39**	**43**	**46**
		0°	6-9-19	9-13-23	11-16-25	13-19-28	15-22-30	17-23-32	21-26-36	23-27-40	25-30-42	27-33-45	28-35-48
	Throw	**22½°**	5-7-15	7-10-18	9-13-20	10-15-22	12-18-24	14-18-26	17-21-29	18-22-32	20-24-34	22-26-36	22-28-38
	ft	**45°**	3-5-10	4-6-11	5-8-13	7-10-14	8-11-15	9-12-16	11-13-18	12-14-20	12-15-21	13-16-23	14-17-24
								NC 20		**30**		**40**	

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. **Deflection** - The listed deflection settings refer to horizontal deflection. For a 20° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 22 ½° horizontal setting.

   The performance tables are based on registers with core style 22 with an opposed blade damper. The performance of other core styles, with or without dampers, can be obtained by the application of correction factors to the tabulated performance data. The table of correction factors is included on page D80.
7. The performance tables are based on registers with F border. For ED border, the following correction factors must be applied due to the reduced core area for this border.

Listed Core Area	Multiply Throw	Multiply Total Pressure	Add NC
.15 - .30	1.30	2.6	+15
.34 - .90	1.14	1.7	+10
1.07 - 1.80	1.08	1.5	+5
2.08 - 6.25	1.04	1.2	+2

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size			NC 20					30			40		
Core Velocity fpm			**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**	**1600**	**1800**
Velocity Pressure			**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**	**.159**	**.202**
	Total	**0°**	.010	.017	.028	.038	.052	.069	.107	.156	.211	.275	.349
	Pressure	**22½°**	.011	.019	.031	.043	.058	.078	.120	.175	.237	.308	.392
		45°	.016	.029	.047	.064	.088	.117	.181	.263	.356	.464	.590
Ac = **.46** ft²	**cfm**		**140**	**185**	**230**	**275**	**320**	**370**	**460**	**550**	**645**	**735**	**830**
20 x 4 16 x 5	**NC**		—	—	—	—	**18**	**22**	**28**	**34**	**39**	**43**	**46**
14 x 6 10 x 8		**0°**	7-10-22	9-14-25	12-17-27	14-22-30	16-23-32	19-25-35	23-27-39	25-31-43	27-33-46	29-35-49	31-38-52
	Throw	**22½°**	6-8-18	7-11-20	10-14-22	11-18-24	13-18-26	15-20-28	18-22-31	20-25-34	22-26-37	23-28-39	25-30-42
	ft	**45°**	3-5-11	5-7-12	6-9-11	7-11-15	8-11-16	10-13-17	11-14-20	12-15-21	14-17-23	14-18-24	15-19-26
Ac = **.52** ft²	**cfm**		**155**	**210**	**260**	**310**	**365**	**415**	**520**	**625**	**730**	**830**	**935**
24 x 4 18 x 5	**NC**		—	—	—	—	**19**	**23**	**29**	**35**	**40**	**44**	**47**
16 x 6		**0°**	7-11-23	10-15-26	13-19-29	15-22-32	18-25-35	20-26-37	24-30-41	27-33-45	29-35-49	31-38-52	32-40-55
	Throw	**22½°**	6-9-18	8-12-21	10-15-23	12-18-26	14-20-28	16-21-30	19-24-33	22-26-36	23-28-39	25-30-42	26-32-44
	ft	**45°**	3-5-11	5-7-13	6-9-15	8-11-16	9-12-17	10-13-18	12-15-21	13-16-23	14-18-24	15-19-26	16-20-28
Ac = **.60** ft²	**cfm**		**180**	**240**	**300**	**360**	**420**	**480**	**600**	**720**	**840**	**960**	**1080**
28 x 4 20 x 5	**NC**		—	—	—	**15**	**20**	**24**	**30**	**36**	**41**	**45**	**48**
18 x 6 12 x 8		**0°**	7-12-24	11-16-28	14-20-31	16-24-34	19-27-37	22-29-40	26-32-45	29-35-48	31-38-52	23-40-56	35-43-59
10 x 10	**Throw**	**22½°**	6-10-19	9-13-22	11-16-25	13-19-27	15-22-30	18-23-32	21-26-36	23-26-38	25-30-42	26-32-45	28-34-47
	ft	**45°**	4-6-12	5-8-14	7-10-16	8-12-17	10-13-19	11-14-20	13-16-22	14-17-24	15-19-26	16-20-28	17-21-29
Ac = **.69** ft²	**cfm**		**205**	**275**	**345**	**415**	**485**	**550**	**690**	**830**	**965**	**1100**	**1240**
30 x 4 24 x 5	**NC**		—	—	—	**15**	**20**	**24**	**30**	**36**	**41**	**45**	**48**
20 x 6 14 x 8		**0°**	8-13-26	12-17-30	15-22-34	18-26-37	21-29-40	24-31-43	28-34-47	30-38-52	33-40-56	35-43-60	37-45-63
12 x 10	**Throw**	**22½°**	6-10-21	10-14-24	12-18-27	14-21-30	17-23-32	19-25-34	22-27-38	24-30-42	26-32-45	28-34-48	30-36-50
	ft	**45°**	4-6-13	6-9-15	7-11-17	9-13-18	10-14-20	12-15-21	14-17-24	15-19-26	16-20-28	18-22-30	19-23-31
Ac = **.81** ft²	**cfm**		**245**	**325**	**405**	**485**	**565**	**650**	**810**	**970**	**1130**	**1300**	**1460**
36 x 4 28 x 5	**NC**		—	—	—	**16**	**21**	**25**	**31**	**37**	**42**	**46**	**49**
22 x 6 16 x 8		**0°**	8-14-28	13-19-33	16-23-37	19-28-40	23-31-43	26-33-46	30-37-51	33-41-56	36-44-60	38-45-64	40-49-68
14 x 10	**Throw**	**22½°**	6-11-22	10-15-26	13-18-30	15-22-32	18-25-34	21-26-37	24-30-41	26-33-45	29-35-48	30-37-51	32-39-54
	ft	**45°**	4-7-14	6-9-16	8-12-18	10-14-20	11-15-22	13-17-23	15-19-26	17-20-28	18-22-30	19-23-32	20-25-34
Ac = **.90** ft²	**cfm**		**270**	**360**	**450**	**540**	**630**	**720**	**900**	**1080**	**1260**	**1440**	**1620**
40 x 4 30 x 5	**NC**		—	—	—	**16**	**21**	**25**	**31**	**37**	**42**	**46**	**49**
26 x 6 18 x 8		**0°**	9-15-30	14-20-34	17-25-39	21-30-42	24-33-45	27-35-48	32-39-55	35-43-59	37-46-63	40-49-68	42-52-72
16 x 10 12 x 12	**Throw**	**22½°**	7-12-24	11-16-27	14-20-31	17-24-34	19-26-36	22-28-38	26-31-44	28-34-47	30-37-50	32-39-54	34-42-58
	ft	**45°**	5-8-15	7-10-17	9-13-19	10-15-21	12-16-23	14-17-24	16-20-27	17-21-29	19-23-32	20-24-34	21-26-36
Ac = **1.07** ft²	**cfm**		**320**	**430**	**535**	**640**	**750**	**855**	**1070**	**1280**	**1500**	**1710**	**1930**
48 x 4 36 x 5	**NC**		—	—	—	**16**	**21**	**25**	**31**	**37**	**42**	**46**	**49**
30 x 6 18 x 10		**0°**	10-16-32	15-22-38	18-28-42	22-33-46	26-36-49	29-38-53	35-43-59	38-46-64	41-50-69	43-53-74	46-57-79
14 x 12	**Throw**	**22½°**	8-13-26	12-18-30	14-22-34	18-26-37	21-29-39	23-30-42	28-34-47	30-37-51	33-40-55	34-42-59	37-46-63
	ft	**45°**	5-8-16	7-11-19	9-14-21	11-17-23	13-18-25	14-19-26	17-21-29	19-23-32	20-25-35	22-27-37	23-28-40

NC 20 **30** **40**

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. **Deflection -** The listed deflection settings refer to horizontal deflection. For a 20° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 22 ½° horizontal setting.

The performance tables are based on registers with core style 22 with an opposed blade damper. The performance of other core styles, with or without dampers, can be obtained by the application of correction factors to the tabulated performance data. The table of correction factors is included on this page.

7. The performance tables are based on registers with F border. For ED border, the following correction factors must be applied due to the reduced core area for this border.

Corrections for Various Core Styles

Core Style		Ak/Ac	Multiply Throw	Multiply Total Pressure	Add NC
21 & 22	With Damper	0.78	1.0	1.0	0
	No Damper	0.83	0.97	0.88	-4
31 & 32	With Damper	0.68	1.07	1.32	0
	No Damper	0.72	1.04	1.17	-2

Listed Core Area	Multiply Throw	Multiply Total Pressure	Add NC
.15 - .30	1.30	2.6	+15
.34 - .90	1.14	1.7	+10
1.07 - 1.80	1.08	1.5	+5
2.08 - 6.25	1.04	1.2	+2

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size			NC 20				30			40			50
Core Velocity fpm			**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**	**1600**	**1800**
Velocity Pressure			**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**	**.159**	**.202**
	Total Pressure	**0°**	.010	.017	.028	.038	.052	.069	.107	.156	.211	.275	.349
		22½°	.011	.019	.031	.043	.058	.078	.129	.175	.237	.308	.392
		45°	.016	.029	.047	.064	.088	.117	.181	.263	.356	.464	.590
Ac = **1.18** ft² 34 x 6 24 x 8 20 x 10 16 x 12 14 x 14	**cfm**		**355**	**470**	**590**	**710**	**825**	**945**	**1180**	**1420**	**1650**	**1890**	**2120**
	NC		—	—	—	**17**	**22**	**26**	**32**	**38**	**43**	**47**	**50**
	Throw ft	**0°**	10-17-34	15-23-40	19-28-44	23-35-48	27-38-52	31-40-56	36-45-62	40-48-67	43-52-73	45-56-78	48-59-83
		22½°	8-14-27	12-18-32	15-22-35	18-28-38	22-30-42	25-32-45	29-36-50	32-38-54	34-42-58	36-45-62	38-47-66
		45°	5-8-17	8-11-20	10-14-22	12-17-24	13-19-26	15-20-28	18-22-31	20-24-34	21-26-36	22-28-39	24-30-41
Ac = **1.34** ft² 60 x 4 48 x 5 36 x 6 18 x 12 16 x 14	**cfm**		**400**	**535**	**570**	**805**	**940**	**1070**	**1340**	**1610**	**1880**	**2140**	**2410**
	NC		—	—	—	**18**	**23**	**27**	**33**	**39**	**44**	**48**	**51**
	Throw ft	**0°**	11-18-36	16-24-42	20-30-47	24-37-51	28-40-56	32-43-59	39-47-65	42-52-72	45-56-78	48-60-83	51-63-89
		22½°	9-14-29	13-19-34	16-24-38	19-30-41	22-32-45	26-34-47	31-38-52	34-42-58	36-45-62	38-48-66	41-50-71
		45°	6-9-18	8-12-21	10-15-23	12-18-25	14-20-28	16-21-29	19-23-33	21-26-36	23-28-39	24-30-42	26-32-44
Ac = **1.60** ft² 72 x 4 30 x 8 24 x 10 22 x 12 18 x 14 16 x 16	**cfm**		**480**	**640**	**800**	**960**	**1120**	**1280**	**1600**	**1920**	**2240**	**2560**	**2880**
	NC		—	—	—	**18**	**23**	**27**	**33**	**39**	**44**	**48**	**51**
	Throw ft	**0°**	13-20-40	18-26-46	22-32-51	27-39-56	31-43-60	35-46-64	42-51-72	46-56-79	49-61-85	53-65-91	56-69-97
		22½°	10-16-32	14-21-37	18-26-41	22-31-45	25-34-48	28-37-51	34-41-58	37-45-63	39-49-68	42-52-73	45-55-78
		45°	6-10-20	9-13-23	11-16-25	13-20-28	15-22-30	17-23-32	21-26-36	23-28-39	25-30-43	26-32-46	28-35-48
Ac = **1.80** ft² 60 x 5 48 x 6 36 x 8 30 x 10 24 x 12 20 x 14 18 x 16	**cfm**		**540**	**720**	**900**	**1080**	**1260**	**1440**	**1800**	**2160**	**2520**	**2880**	**3240**
	NC		—	—	—	**19**	**24**	**28**	**34**	**40**	**45**	**49**	**52**
	Throw ft	**0°**	13-21-42	19-28-48	24-35-55	29-43-59	32-46-63	37-49-68	45-55-76	48-60-84	52-65-90	56-69-97	60-73-103
		22½°	10-17-34	15-22-38	19-28-44	23-34-47	26-37-50	30-39-54	36-44-61	38-48-67	42-52-72	45-55-78	48-58-82
		45°	7-11-21	9-14-24	12-17-27	14-21-29	16-23-32	19-24-34	22-27-38	24-30-42	26-32-45	28-35-48	30-37-51
Ac = **2.08** ft² 72 x 5 60 x 6 40 x 8 36 x 10 30 x 12 24 x 14 20 x 16 18 x 18	**cfm**		**625**	**830**	**1040**	**1250**	**1460**	**1660**	**2080**	**2500**	**2910**	**3330**	**3740**
	NC		—	—	—	**19**	**24**	**28**	**34**	**40**	**45**	**49**	**52**
	Throw ft	**0°**	14-23-45	20-30-52	26-38-58	30-44-63	35-49-68	40-53-73	48-59-82	52-64-90	56-69-97	60-75-104	64-79-110
		22½°	11-18-36	16-24-42	21-30-46	24-35-50	28-39-54	32-42-58	38-47-66	42-51-72	45-55-78	48-60-83	51-63-88
		45°	7-11-23	10-15-26	13-19-29	15-22-32	17-25-34	20-36-37	24-29-41	26-32-45	28-35-48	30-37-52	32-40-55
Ac = **2.45** ft² 72 x 6 48 x 8 32 x 12 26 x 14 24 x 16 20 x 18 20 x 20	**cfm**		**735**	**980**	**1220**	**1470**	**1720**	**1960**	**2450**	**2940**	**3430**	**3920**	**4410**
	NC		—	—	**15**	**20**	**25**	**29**	**35**	**41**	**46**	**50**	**53**
	Throw ft	**0°**	15-25-49	22-35-57	27-40-62	32-48-68	38-54-74	48-57-80	52-64-89	57-70-97	61-76-106	65-81-113	70-87-120
		22½°	12-20-39	18-26-46	22-32-50	26-38-54	30-43-59	34-46-64	42-51-71	46-56-78	49-61-85	52-65-90	56-70-96
		45°	7-12-24	11-16-28	14-20-31	16-24-34	19-27-37	22-28-40	26-32-45	28-35-49	32-38-53	33-42-55	34-43-60
Ac = **2.78** ft² 36 x 12 30 x 14 26 x 16 24 x 18 22 x 20	**cfm**		**835**	**1110**	**1390**	**1670**	**1950**	**2220**	**2780**	**3340**	**3890**	**4450**	**5000**
	NC		—	—	**16**	**21**	**26**	**30**	**36**	**42**	**47**	**51**	**54**
	Throw ft	**0°**	16-26-52	23-34-60	29-42-67	34-50-73	40-57-79	45-61-85	55-68-95	60-75-104	65-81-112	70-87-122	74-93-128
		22½°	13-21-42	18-27-48	23-34-54	28-40-58	32-46-63	36-49-68	44-54-76	48-60-83	52-65-90	56-70-98	59-74-102
		45°	8-13-26	12-17-30	14-21-33	17-25-37	20-28-40	23-30-42	28-34-47	30-37-52	33-40-56	35-43-61	37-46-64
					NC 20			**30**		**40**		**50**	

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. **Deflection** - The listed deflection settings refer to horizontal deflection. For a 20° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 22 ½° horizontal setting.

The performance tables are based on registers with core style 22 with an opposed blade damper. The performance of other core styles, with or without dampers, can be obtained by the application of correction factors to the tabulated performance data. The table of correction factors is included on this page.

7. The performance tables are based on registers with F border. For ED border, the following correction factors must be applied due to the reduced core area for this border.

Corrections for Various Core Styles

Core Style		Ak/Ac	Multiply Throw	Multiply Total Pressure	Add NC
21 & 22	With Damper	0.78	1.0	1.0	0
	No Damper	0.83	0.97	0.88	-4
31 & 32	With Damper	0.68	1.07	1.32	0
	No Damper	0.72	1.04	1.17	-2

Listed Core Area	Multiply Throw	Multiply Total Pressure	Add NC
.15 - .30	1.30	2.6	+15
.34 - .90	1.14	1.7	+10
1.07 - 1.80	1.08	1.5	+5
2.08 - 6.25	1.04	1.2	+2

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size			NC 20						30	40		50		
	Core Velocity	**fpm**	**300**	**400**	**500**	**600**	**700**	**800**	**1000**	**1200**	**1400**	**1600**	**1800**
	Velocity Pressure		**.006**	**.010**	**.016**	**.022**	**.030**	**.040**	**.062**	**.090**	**.122**	**.159**	**.202**
	Total	**0°**	.010	.017	.028	.038	.052	.069	.107	.156	.211	.275	.349
	Pressure	**22½°**	.011	.019	.031	.043	.058	.078	.129	.175	.237	.308	.392
		45°	.016	.029	.047	.064	.088	.117	.181	.263	.356	.464	.590
Ac = **3.11** ft²	**cfm**		**935**	**1240**	**1560**	**1870**	**2180**	**2490**	**3110**	**3730**	**4350**	**4980**	**5600**
60 x 8 48 x 10	**NC**		—	—	**16**	**21**	**26**	**30**	**36**	**42**	**47**	**51**	**54**
40 x 12 36 x 14		**0°**	17-27-55	24-36-63	34-45-71	41-53-78	47-60-84	48-64-90	58-72-100	64-79-110	69-86-118	74-92-128	79-97-135
30 x 16 26 x 18	**Throw**	**22½°**	14-22-44	20-29-50	27-36-57	33-42-62	38-48-67	38-51-72	46-58-80	51-63-88	55-69-94	59-74-102	63-78-108
24 x 20	**ft**	**45°**	8-14-28	12-18-31	17-22-35	20-26-39	23-30-42	24-32-45	29-36-50	32-40-55	35-43-59	37-46-64	40-49-67
Ac = **3.61** ft²	**cfm**		**1080**	**1440**	**1800**	**2170**	**2530**	**2890**	**3610**	**4330**	**5050**	**5780**	**6500**
72 x 8 60 x 10	**NC**		—	—	**17**	**22**	**27**	**31**	**37**	**43**	**48**	**52**	**55**
48 x 12 36 x 16		**0°**	18-29-59	26-38-63	32-47-76	35-56-84	44-65-90	51-69-97	53-78-108	69-86-118	75-91-128	80-99-137	86-105-146
30 x 18 28 x 20	**Throw**	**22½°**	14-23-47	21-30-54	26-38-61	30-45-67	35-52-72	41-55-78	50-62-86	55-69-94	60-74-102	60-79-110	69-84-117
24 x 24	**ft**	**45°**	9-14-29	13-19-34	16-23-38	19-28-42	22-32-45	25-35-48	31-39-54	35-43-59	38-46-64	40-50-69	43-52-73
Ac = **4.29** ft²	**cfm**		**1290**	**1720**	**2140**	**2570**	**3000**	**3430**	**4290**	**5150**	**6010**	**6860**	**7720**
48 x 14 36 x 18	**NC**		—	—	**18**	**23**	**28**	**32**	**38**	**44**	**49**	**53**	**56**
32 x 20 28 x 24		**0°**	19-31-64	28-41-74	35-50-83	42-60-91	49-71-98	56-76-106	69-85-118	76-93-130	82-102-140	88-108-149	92-115-158
	Throw	**22½°**	15-25-51	22-33-59	28-40-66	34-48-73	39-57-78	45-61-85	55-68-94	61-74-104	66-82-112	70-86-119	74-92-126
	ft	**45°**	10-15-32	14-20-37	17-25-42	21-30-46	24-35-49	28-38-53	34-43-59	38-47-65	41-51-70	44-54-75	46-57-79
Ac = **4.65** ft²	**cfm**		**1400**	**1860**	**2320**	**2790**	**3260**	**3720**	**4650**	**5580**	**6510**	**7440**	**8370**
72 x 10 48 x 16	**NC**		—	—	**18**	**23**	**28**	**32**	**38**	**44**	**49**	**53**	**56**
36 x 20 30 x 24		**0°**	20-33-67	29-43-78	36-54-87	44-65-95	51-74-103	58-79-110	72-89-123	79-97-135	86-105-146	91-113-156	96-120-164
	Throw	**22½°**	16-26-54	23-34-62	29-43-70	35-52-76	41-59-82	46-63-88	58-71-98	63-78-108	69-84-117	73-90-125	77-96-131
	ft	**45°**	10-16-33	15-22-39	18-27-43	22-32-48	25-37-52	29-40-55	36-44-61	39-49-67	43-52-73	46-56-78	48-60-82
Ac = **5.58** ft²	**cfm**		**1670**	**2230**	**2790**	**3350**	**3910**	**4460**	**5580**	**6700**	**7810**	**8930**	**10,000**
72 x 12 60 x 14	**NC**		—	—	**19**	**24**	**29**	**33**	**39**	**45**	**50**	**54**	**57**
48 x 18 36 x 24	**0°**		22-36-73	31-47-85	40-59-95	47-72-104	55-81-113	63-87-122	79-97-135	87-107-148	93-116-160	100-125-171	106-132-180
	Throw	**22½°**	18-29-58	25-38-68	32-47-76	38-58-83	44-65-90	50-70-98	63-78-108	70-86-118	74-93-130	80-100-137	85-105-140
	ft	**45°**	11-18-37	16-23-43	20-30-48	23-36-52	28-41-57	31-44-61	39-49-67	43-53-74	47-53-80	50-62-86	53-66-90
Ac = **6.25** ft²	**cfm**		**1880**	**2500**	**3120**	**3750**	**4380**	**5000**	**6250**	**7500**	**8750**	**10,000**	**11,200**
72 x 14 60 x 16	**NC**		—	—	**20**	**25**	**30**	**34**	**40**	**46**	**51**	**55**	**58**
48 x 20 30 x 30	**0°**		23-37-78	33-49-90	42-62-100	50-75-103	58-85-119	67-93-128	84-104-143	92-113-156	98-123-169	106-132-180	112-140-192
	Throw	**22½°**	18-30-62	26-39-72	34-50-80	40-60-82	46-69-95	54-74-102	67-83-114	74-90-125	78-98-135	85-105-140	90-112-153
	ft	**45°**	12-19-39	17-25-45	21-31-50	25-37-51	29-43-60	34-46-64	42-52-72	46-57-78	49-61-85	53-66-90	56-70-96
					NC 20			**30**		**40**	**50**		

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. **Deflection** - The listed deflection settings refer to horizontal deflection. For a 20° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 22 ½° horizontal setting.

The performance tables are based on registers with core style 22 with an opposed blade damper. The performance of other core styles, with or without dampers, can be obtained by the application of correction factors to the tabulated performance data. The table of correction factors is included on this page.

7. The performance tables are based on registers with F border. For ED border, the following correction factors must be applied due to the reduced core area for this border.

Corrections for Various Core Styles

Core Style		Ak/Ac	Multiply Throw	Multiply Total Pressure	Add NC
21 & 22	With Damper	0.78	1.0	1.0	0
	No Damper	0.83	0.97	0.88	-4
31 & 32	With Damper	0.68	1.07	1.32	0
	No Damper	0.72	1.04	1.17	-2

Listed Core Area	Multiply Throw	Multiply Total Pressure	Add NC
.15 - .30	1.30	2.6	+15
.34 - .90	1.14	1.7	+10
1.07 - 1.80	1.08	1.5	+5
2.08 - 6.25	1.04	1.2	+2

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Louvered Face Return
60 / 70 Airfoil Series

EXTRUDED ALUMINUM

Product Information

3/4 in. [19] Blade Spacing Models

Grille	**60**
Register w / Steel Damper	**60D**
w/ Aluminum Damper	**60DAL**

1/2 in. [13] Blade Spacing Models

Grille	**70**
Register w / Steel Damper	**70D**
w/ Aluminum Damper	**70DAL**

Mounting / Finish Options

Border Style

Surface Mount	
1 1/4 in. [32] Flat (Standard)	**F**
1 1/4 in. [32] Curved	**C**
1 in. [25] Narrow	**N**
T-bar Lay-in Inverted 1 in. [25]T	**TB***
Exposed Duct	**ED***
Panel Mounted	**TBP**

*See Performance Notes

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**

Optional Mounting Frame

For **F** Border	**D**

Fastening

Countersunk screwholes c/w oval-head screws	**A**
No screwholes	**Ø**
Concealed Fastening (60 Series only)	**C**
Straight screwholes (ED border only)	**H**

Finish

White Powder Coat	**B12**

For optional and special finishes see color matrix.

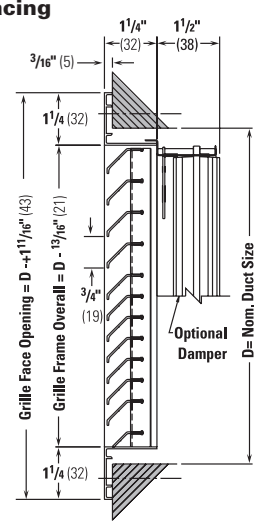
Available Sizes

Minimum	Maximum*
6 in. x 4 in. [152 x 102]	**36 in. x 96 in.** [914 x 2438]

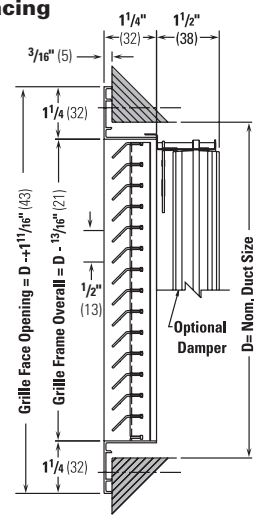
* One-piece

- For oversize grille construction, see pages D124.
- * Note the reduced core area of ED and TB Border per dimensioned details (page D90). Corrections for performance data are included in the performance notes.

Fixed Louvers, 45° Deflection, 3/4 in. [19] Blade Spacing



Fixed Louvers, 45° Deflection, 1/2 in. [13] Blade Spacing



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Border Style according to installation requirements (C is standard).
4] Select Blade Orientation.
5] Select Module Size if TB border is selected.
(Note: maximum duct size = module size - 2 in.[50]).
6] Select Mounting Frame if desired.
7] Select Fastening Type (A is standard, n/a with TB border).
8] Select Finish.

Example: 22 in. x 22 in. / 60 /TB / L / 24 in. x 24 in. / B12
Application Recommendations:
Surface Mount – F Border, A Fastening.
T-bar Lay-in –TB Border, Fastening n/a

GRILLES AND REGISTERS

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Louvered Face Filter Return
60FH / 70FH Airfoil Series

EXTRUDED ALUMINUM

Product Information

Models

3/4 in. [19] Blade Spacing	**60FH**
1/2 in. [13] Blade Spacing	**70FH**

Application

- Intended to be incorporated into a conveniently serviceable return air filtration system.
- Designed for recirculating air systems such as fan powered induction terminals, fan coils and heat pumps.
- Accepts standard 1 in. [25] filter media.
- Construction matches and complements 60 / 70 Series grilles.

Construction

- Extruded aluminum blades, borders and mounting frame.
- 45° fixed deflection blades.
- Available in two core styles.
- Continuous aluminum hinge with units up to 36 in. x 24 in. [914 x 610].
- 1/4 turn quick-release fasteners.
- Surface mount design.

Mounting / Finish Options

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**

Finish

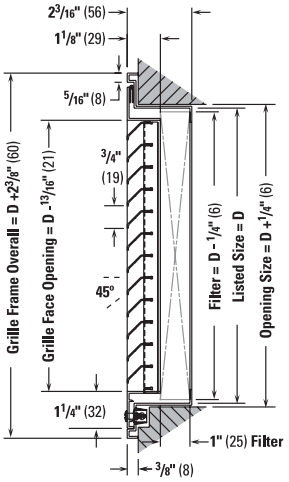
White Powder Coat	**B12**

For optional and special finishes see color matrix.

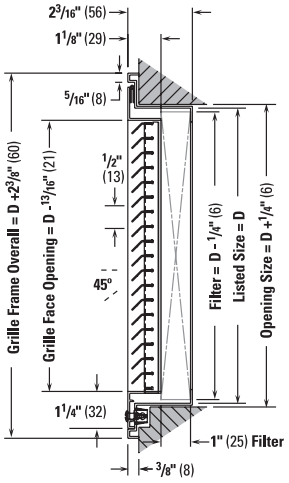
Available Sizes

Minimum	Maximum
8 in. x 4 in. [203 x 102]	**48 in. x 36 in.** [1219 x 914]

Model 60FH



Model 70FH



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style).
3] Select Blade Orientation.
4] Select Finish.

Example: 24 in. x 24 in. / 60FH / L / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Eggcrate Face Filter Return - Architectural Quality
80FH Series

EXTRUDED ALUMINUM

Product Information

Models 80FH

Filter Return **80FH**

Application

- High capacity, low sound and pressure drop filter return.
- Intended to be incorporated into a conveniently serviceable return air filtration system.
- Designed for recirculating air systems such as fan powered induction terminals, fan coils and heat pumps.
- Accepts standard 1 in. [25] filter media.
- Construction matches and complements 80 Series grilles, page D39.

Construction

- Aluminum core, borders and mounting frame.
- 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] aluminum eggcrate grid.
- Continuous aluminum hinge with units up to 36 in. x 24 in. [914 x 610].
- 1/4 in. turn quick-release fasteners.
- Surface mount design.

Finish Options

Finish

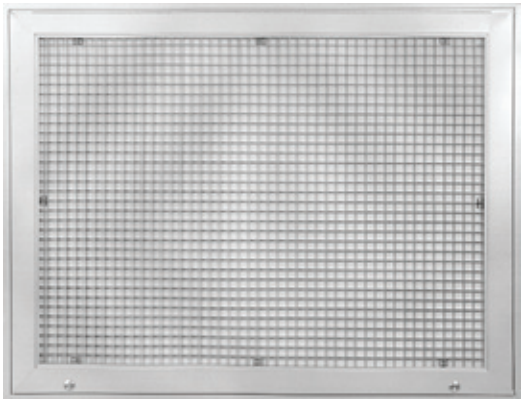
White Powder Coat **B12**

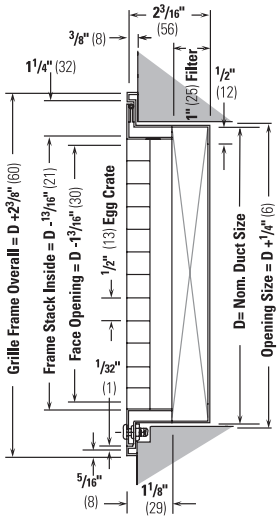
For optional and special finishes see color matrix.

Available Sizes

Minimum	Maximum
8 in. x 4 in. [203 x 102]	**48 in. x 24 in.** [1219 x 610]

Model 80FH





✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style).
3] Select Finish.

Example: 24 in. x 24 in. / 80FH / L / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 3/4 in. blade spacing, 45˚ deflection

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 .002 .025	300 .006 .071	400 .010 .127	500 .016 .198	600 .022 .279	700 .031 .387	800 .040 .507	900 .050 .635	1000 .062 .787	1100 .075 .952
								NC20		30		40			
0.15	7 x 4				**cfm**	30	45	60	75	90	105	120	135	150	165
	6 x 5				**NC**	—	—	18	24	29	34	38	41	44	47
0.18	8 x 4	6 x 6			**cfm**	36	54	72	90	108	126	144	162	180	198
	7 x 5				**NC**	—	—	19	25	30	35	39	42	45	48
0.22	10 x 4	7 x 6			**cfm**	44	66	88	110	132	154	176	198	220	242
	8 x 5				**NC**	—	—	20	26	31	36	40	43	46	49
0.26	12 x 4	8 x 6			**cfm**	52	78	104	130	156	182	208	234	260	286
	10 x 5				**NC**	—	—	21	27	33	37	41	44	47	50
0.30	14 x 4				**cfm**	60	90	120	150	180	210	240	270	300	330
					NC	—	—	22	28	34	38	42	45	48	51
0.34	16 x 4	10 x 6			**cfm**	68	102	136	170	204	238	272	306	340	374
	12 x 5				**NC**	—	15	23	29	35	39	43	46	49	52
0.39	18 x 4	12 x 6			**cfm**	78	117	156	195	234	273	312	351	390	429
	14 x 5	8 x 8			**NC**	—	16	24	30	36	40	44	47	50	53
0.46	20 x 4	14 x 6			**cfm**	92	138	184	230	276	322	368	414	460	506
	16 x 5	10 x 8			**NC**	—	17	25	31	37	41	45	48	51	54
0.52	24 x 4	16 x 6			**cfm**	104	156	208	260	312	364	416	468	520	572
	18 x 5				**NC**	—	17	26	32	38	42	46	49	52	55
0.60	28 x 4	18 x 6	10 x 10		**cfm**	120	180	240	300	360	420	480	540	600	660
	20 x 5	12 x 8			**NC**	—	18	26	33	38	43	46	50	53	55
0.69	30 x 4	20 x 6	12 x 10		**cfm**	138	207	276	345	414	483	552	621	690	759
	24 x 5	14 x 8			**NC**	—	19	27	34	39	43	47	51	54	56
0.81	36 x 4	22 x 6	14 x 10		**cfm**	162	243	324	405	486	567	648	729	810	891
	28 x 5	16 x 8			**NC**	—	20	28	35	40	44	48	52	55	57
0.90	40 x 4	26 x 6	16 x 10		**cfm**	180	270	350	450	540	630	720	810	900	990
	30 x 5	18 x 8	12 x 12		**NC**	—	21	29	35	41	45	49	52	55	58
1.07	48 x 4	30 x 6	14 x 12		**cfm**	214	321	428	535	642	749	856	963	1070	1177
	36 x 5	18 x 10			**NC**	—	22	30	36	42	46	50	53	56	59
1.18	34 x 6	20 x 10	14 x 14		**cfm**	236	354	472	590	708	826	944	1062	1180	1298
	24 x 8	16 x 12			**NC**	—	23	31	37	42	47	51	54	57	60
1.60	60 x 4	36 x 6	16 x 14		**cfm**	268	402	536	670	804	938	1072	1206	1340	1474
	48 x 5	18 x 12			**NC**	—	23	32	38	43	48	51	55	58	61
1.80	72 x 4	24 x 10	18 x 14		**cfm**	320	480	640	800	960	1120	1280	1440	1600	1760
	30 x 8	22 x 12	16 x 16		**NC**	—	24	33	39	44	49	52	56	59	62
2.08	60 x 5	36 x 8	24 x 12	18 x 16	**cfm**	360	540	720	900	1080	1260	1440	1620	1800	1980
	48 x 6	30 x 10	20 x 14		**NC**	—	25	33	40	45	50	53	57	60	62
2.45	72 x 5	40 x 8	30 x 12	20 x 16	**cfm**	416	624	832	1040	1248	1456	1664	1872	2080	2288
	60 x 6	36 x 10	24 x 14	18 x 18	**NC**	15	26	34	41	46	50	54	58	61	63
2.75	72 x 6	32 x 12	24 x 16		**cfm**	490	735	980	1225	1470	1715	1960	2205	2450	2695
	48 x 8	26 x 14	20 x 18		**NC**	16	27	35	42	47	51	55	59	62	64
2.78	36 x 12	26 x 16	22 x 20		**cfm**	556	834	1112	1390	1668	1946	2224	2502	2780	3058
	30 x 14	24 x 18			**NC**	16	28	36	43	48	52	56	59	62	65
3.11	60 x 8	40 x 12	30 x 16	24 x 20	**cfm**	622	933	1244	1555	1866	2177	2488	2799	3110	3421
	48 x 10	36 x 14	26 x 18		**NC**	17	29	37	43	49	53	57	60	63	66
3.61	72 x 8	48 x 12	30 x 18		**cfm**	722	1083	1444	1805	2166	2527	2888	3249	3610	3971
	60 x 10	36 x 16	24 x 24		**NC**	18	30	38	44	49	54	58	61	64	67
4.29	48 x 14	32 x 20			**cfm**	858	1287	1716	2145	2574	3003	3432	3861	4290	4719
	36 x 18	28 x 24			**NC**	19	31	39	45	51	55	59	62	65	68
4.65	72 x 10	36 x 20			**cfm**	930	1395	1860	2325	2790	3255	3720	4185	4650	5115
	48 x 16	30 x 24			**NC**	20	31	39	46	51	55	59	63	66	68
5.58	72 x 12	48 x 18			**cfm**	1116	1674	2232	2790	3348	3906	4464	5022	2280	6138
	60 x 14	36 x 24			**NC**	21	32	40	47	52	57	60	64	67	69
6.25	72 x 14	48 x 20			**cfm**	1250	1875	2500	3125	3750	4375	5000	5625	6250	6875
	60 x 16	30 x 30			**NC**	21	33	41	48	53	57	61	64	67	70
							30	40		50		60			

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = static pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} watts.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested with damper. Corrections for grille without damper: — Multiply negative static pressure by 0.77
   — Subtract 4 from listed NC.
7. The performance tables are based on registers with F border. For ED border, the following correction factors must be applied due to the reduced core area for this border.
8. TB frame-duct size is ceiling module - 1"

Listed Core Area	Multiply Total Pressure	Add NC
.15 - .30	2.5	+14
.34 - .90	1.8	+10
1.07 - 1.80	1.4	+6
2.08 - 6.25	1.2	+4

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data — 1/2 in. blade spacing, 45° deflection

Core Area Sq. ft	Nominal Size				Core Velocity / Velocity Pressure / Negative s.p.	200 .002 .014	300 .006 .032	400 .010 .056	500 .016 .088	600 .022 .126	700 .031 .171	800 .040 .224	900 .050 .284	1000 .062 .350	1100 .075 .424
						NC 20					30			40	
0.15	7 x 4				**cfm**	30	45	60	75	90	105	120	135	150	165
	6 x 5				**NC**	—	—	16	22	26	30	33	36	39	41
0.18	8 x 4	6 x 6			**cfm**	36	54	72	90	108	126	144	162	180	198
	7 x 5				**NC**	—	—	17	23	27	31	35	38	40	43
0.22	10 x 4	7 x 6			**cfm**	44	66	88	110	132	154	176	198	220	242
	8 x 5				**NC**	—	—	18	24	29	32	36	39	41	44
0.26	12 x 4	8 x 6			**cfm**	52	78	104	130	156	182	208	234	260	286
	10 x 5				**NC**	—	—	19	25	30	34	37	40	43	45
0.30	14 x 4				**cfm**	60	90	120	150	180	210	240	270	300	330
					NC	—	—	20	26	31	34	38	41	43	46
0.34	16 x 4	10 x 6			**cfm**	68	102	136	170	204	238	272	306	340	374
	12 x 5				**NC**	—	—	21	27	31	35	39	42	44	47
0.39	18 x 4	12 x 6			**cfm**	78	117	156	195	234	273	312	351	390	429
	14 x 5	8 x 8			**NC**	—	15	22	28	32	36	39	42	45	47
0.46	20 x 4	14 x 6			**cfm**	92	138	184	230	276	322	368	414	460	506
	16 x 5	10 x 8			**NC**	—	16	23	29	33	37	41	43	46	49
0.52	24 x 4	16 x 6			**cfm**	104	156	208	260	312	364	416	468	520	572
	18 x 5				**NC**	—	17	24	29	34	38	41	44	47	49
0.60	28 x 4	18 x 6	10 x 10		**cfm**	120	180	240	300	360	420	480	540	600	660
	20 x 5	12 x 8			**NC**	—	17	25	30	35	39	42	45	48	50
0.69	30 x 4	20 x 6	12 x 10		**cfm**	138	207	276	345	414	483	552	621	690	759
	24 x 5	14 x 8			**NC**	—	18	26	31	36	40	43	46	49	51
0.81	36 x 4	22 x 6	14 x 10		**cfm**	162	243	324	405	486	567	648	729	810	891
	28 x 5	16 x 8			**NC**	—	19	27	32	37	41	44	47	50	52
0.90	40 x 4	26 x 6	16 x 10		**cfm**	180	270	360	450	540	630	720	810	900	990
	30 x 5	18 x 8	12 x 12		**NC**	—	20	27	33	37	41	45	48	50	53
1.07	48 x 4	30 x 6	14 x 12		**cfm**	214	321	428	535	642	749	856	963	1070	1177
	36 x 5	18 x 10			**NC**	—	21	28	34	39	42	46	49	51	54
1.18	34 x 6	20 x 10	14 x 14		**cfm**	236	354	472	590	708	826	944	1062	1180	1298
	24 x 8	16 x 12			**NC**	—	22	29	35	39	43	46	49	52	54
1.34	60 x 4	36 x 6	16 x 14		**cfm**	268	402	536	670	804	938	1074	1206	1340	1474
	48 x 5	18 x 12			**NC**	—	23	29	35	40	44	47	50	53	55
1.60	72 x 4	24 x 10	18 x 14		**cfm**	320	480	640	800	960	1120	1280	1440	1600	1760
	30 x 8	22 x 12	16 x 16		**NC**	—	24	31	36	41	45	48	51	54	56
1.80	60 x 5	36 x 8	24 x 12	18 x 16	**cfm**	360	540	720	900	1080	1260	1440	1620	1800	1980
	48 x 6	30 x 10	20 x 14		**NC**	—	24	32	37	42	46	49	52	55	57
2.08	72 x 5	40 x 8	30 x 12	20 x 16	**cfm**	416	624	832	1040	1248	1456	1664	1872	2080	2288
	60 x 6	36 x 10	24 x 14	18 x 18	**NC**	15	25	33	38	43	47	50	53	56	58
2.45	72 x 6	32 x 12	24 x 16		**cfm**	490	735	980	1225	1470	1715	1960	2205	2450	2695
	48 x 8	26 x 14	20 x 18		**NC**	16	26	34	39	44	48	51	54	57	59
2.78	36 x 12	26 x 16	22 x 20		**cfm**	556	834	1112	1390	1668	1946	2224	2502	2780	3058
	30 x 14	24 x 18			**NC**	17	27	34	40	45	48	52	55	57	60
3.11	60 x 8	40 x 12	30 x 16	24 x 20	**cfm**	622	933	1244	1555	1866	2177	2488	2799	3110	3421
	48 x 10	36 x 14	26 x 18		**NC**	18	28	35	41	45	49	53	55	58	61
3.61	72 x 8	48 x 12	30 x 18		**cfm**	722	1083	1444	1805	2166	2527	2888	3249	3610	3971
	60 x 10	36 x 16	24 x 24		**NC**	19	29	36	42	46	50	53	56	59	61
4.29	48 x 14	32 x 20			**cfm**	858	1287	1716	2145	2574	3003	3432	3861	4290	4719
	36 x 18	28 x 24			**NC**	20	30	37	43	47	51	55	57	60	62
4.65	72 x 10	36 x 20			**cfm**	930	1395	1860	2325	2790	3255	3720	4185	4650	5115
	48 x 16	30 x 24			**NC**	20	30	38	43	48	52	55	58	61	63
5.58	72 x 12	48 x 18			**cfm**	1116	1674	2232	2790	3348	3906	4464	5022	5580	6138
	60 x 14	36 x 24			**NC**	21	32	39	44	49	53	56	59	62	64
6.25	72 x 14	48 x 20			**cfm**	1250	1875	2500	3125	3750	4375	5000	5625	6250	6875
	60 x 16	30 x 30			**NC**	22	32	39	45	50	54	57	60	63	65
						NC 20	30		40		50			60	

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g. s.p. = static pressure.
4. NC values are based on room absorption of 10 dB re 10^{-12} watts.
5. Blanks (—) indicate an NC level below 15.
6. Grille tested with damper. Corrections for grille without damper:
   — Multiply negative static pressure by 0.77
   — Subtract 4 from listed NC.
7. The performance tables are based on registers with F border. For ED border, the following correction factors must be applied due to the reduced core area for this border.
8. TB frame-duct size is ceiling module - 1"

Listed Core Area	Multiply Total Pressure	Add NC
.15 - .30	2.6	+12
.34 - .90	1.7	+8
1.07 - 1.80	1.4	+5
2.08 - 6.25	1.2	+3

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Availability Schedule

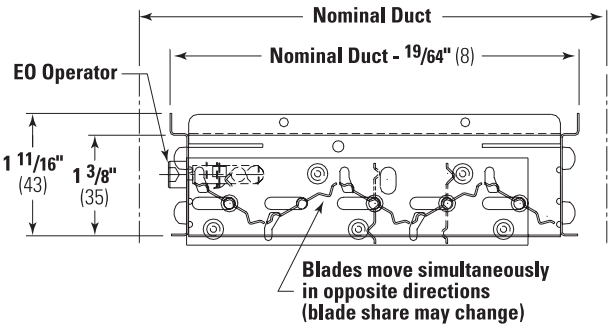
Grille / Register	Border						Border / Frame		Fastening	
	F	C	TBP/TB*	N	ED	CH**	D	T	A	C
510 / 610 / 710	STD.			▼			▼	▼	STD.	
520 / 620 / 720	STD.			▼			▼	▼	STD.	
530 / 630 / 730	STD.		▼	▼			▼	▼	STD.	
535 / 635 / 735	STD.		▼	▼			▼	▼	STD.	
80 / 81 / 82	STD.	▼	▼	▼	▼	▼	▼		STD.	▼
10	STD.		▼				▼		STD.	▼
21, 22	▼	STD.		▼	▼		▼		STD.	▼
31, 32	▼	STD.		▼	▼		▼		STD.	▼
60, 70	▼	STD.	▼	▼	▼		▼		STD.	▼

STD. = Standard Border / Fastening supplied with Grille / Register
* Concealed Fastening not available forTB and CH Borders.
** Damper not available for CH border.

Outlet Mounted Accessory
Opposed Blade Damper

D – Steel Construction

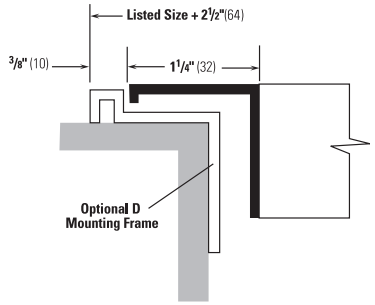
DAL – Aluminum Construction



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

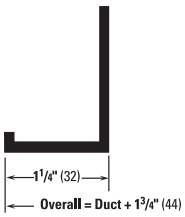
Dimensioned Details

F Border
D Mounting Frame (for 500/600)



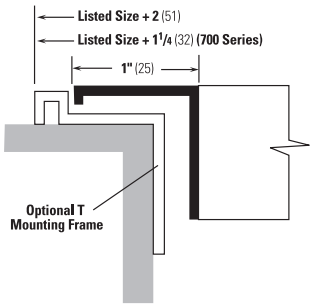
1 1/4 in. [32] flat border for surface mount.

TB Border



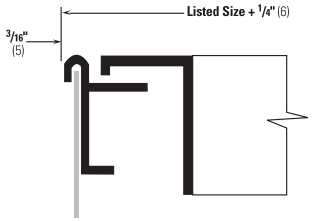
For T-bar Lay-in application. Steel panel is provided when ceiling module is more than 2 in. [51] over duct size. Note that concealed fastening is not available. 60 / 70 Series uses . 3/4" (19) face and duct = ceiling module - 1" (25).

N Border
T Mounting Frame (for 500/600)



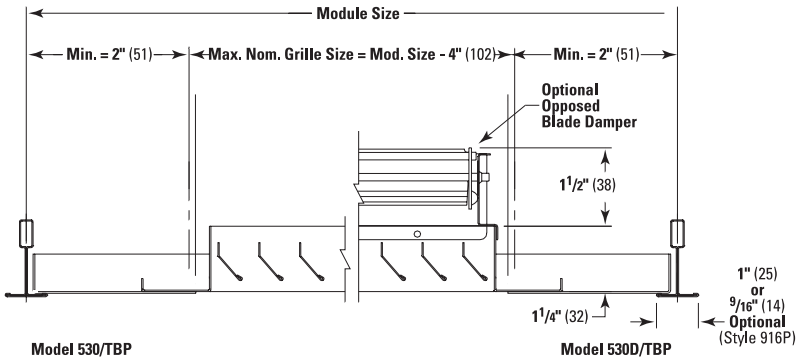
1 in. [25] flat border for surface mount.

ED Border / Frame



Border for exposed duct. Frame 'hems' the raw edge of the duct providing a neat, clean grille mount. Note the reduced core area of this border. See Performance Notes for correction factors to catalog data.

TBP Panel



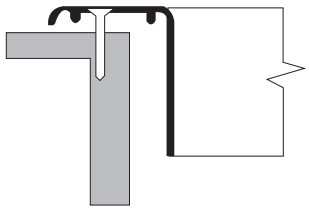
All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Dimensioned Details

CH Border

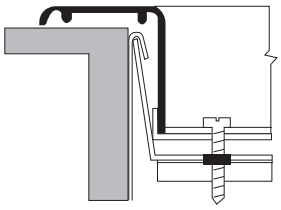
Channel border designed for non-ducted applications in T-bar ceilings. It provides structural strength to the grille and is hidden by the ceiling grid.

A Screw Fastening



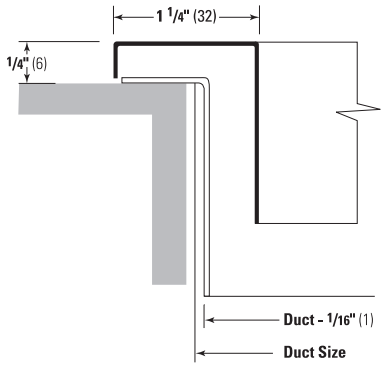
Countersunk screwholes in border type. Factory painted oval head screws supplied.

C Concealed Fastening

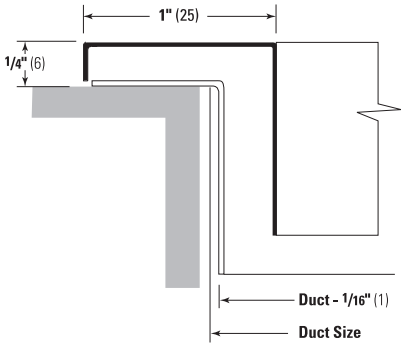


Permits surface mounting with concealed screw. The bracket attached to the back of the grille screws to a loose bracket which 'hooks' into a hem in the duct.

700
F Border
FD Border / Frame



700
N Border
NT Border / Frame



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Overview

Price offers a complete range of grilles and registers for industrial applications that demand specialized performance or construction characteristics.

The 150 / 300, MIG and HCD Series are offered for applications where large air volumes or spot heating or cooling are required, typical in industrial applications.

Stainless steel grilles and registers are for severe environment applications where corrosive atmospheres are present or aggressive cleansers are typical, as in chemical plants or marine environments. They can also be used where a stainless steel finish is desired.

Price also offers a complete line of grilles for maximum and medium security institutions where the construction characteristics of the grille are of utmost importance.

All Price industrial and special application grilles and registers feature design detailing, reliable performance and precision manufacturing that are the hallmarks of Price quality.

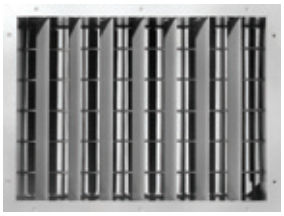
Models

Louvered Face	
Single Deflection	
1 1/2 in. [38] Blade Spacing	**151**
3 in. [76] Blade Spacing	**301**
Double Deflection	
1 1/2 in. [38] Blade Spacing	**152**
3 in. [76] Blade Spacing	**302**
Modular Core	
Double Deflection, 1 1/2 in. [38] Blade Spacing	**MIG**
High Capacity Drum Louver Diffuser	**HCD**

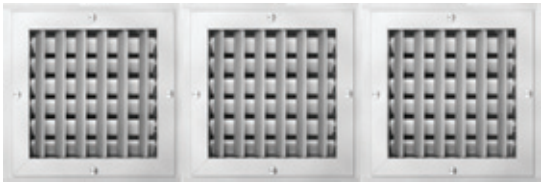
All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Types

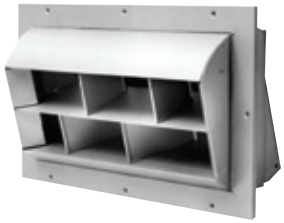
Model 302 Louvered Face 3 in. [76] Spacing



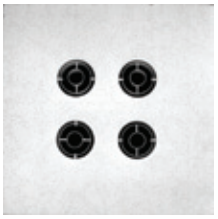
Model MIG3 Modular Core



Model HCD High Capacity Drum Louver Diffuser



Model AND Air Nozzle Diffuser



Quick Selection Guide

Project Type	Application	Recommended Model	
Industrial	High Capacity, High Volume, Heavy Duty	**300 Series**	Page D96
	High Capacity, High Volume	**150 Series**	Page D93
Industrial / Public Area	High Capacity, Long Throw	**HCD**	Page D104
	High Capacity, Adjustable Throw	**MIG**	Page D101

All Metric dimensions ( ) are soft conversion.
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150 Series

1½ in. Blade Spacing

Product Information

Models

Double Deflection
Grilles **152**

Single Deflection
Grilles **151**

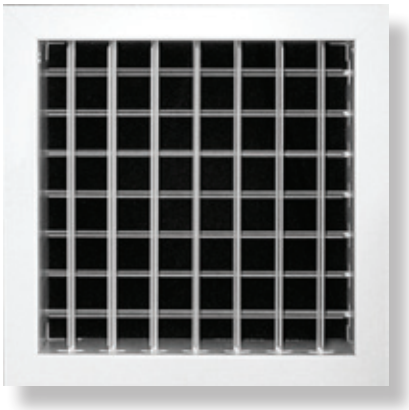
Gang Operated Double Deflection
Grilles **152G**

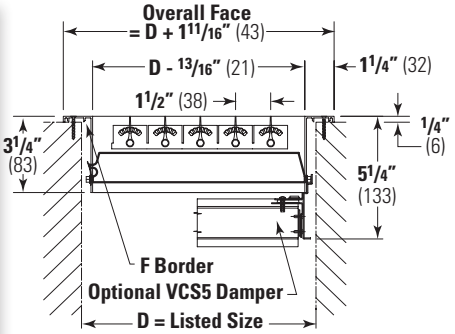
The **Price 150** Series industrial grille is designed to be rugged and reliable. Streamlined heavy duty blades and mullions are extruded from high strength aluminum alloy. Price's patented blade indexing device locks each blade into position to prevent unwanted changes in blade deflection. Blades are securely fastened to the heavy duty frame with screws, and will hold their position, even after being adjusted multiple times. Construction materials have been selected to resist corrosion.

Application

- Single or double deflection supply grille, designed to handle larger air volumes common to industrial applications (up to 1800 fpm).
- Rugged construction for commercial, factory, warehouse or textile mill applications.
- Maximum free area to reduce pressure drop and sound levels.
- A variety of frame styles are available to facilitate mounting and removal.
- Choice of three standard finishes to blend grille appearance with a white background or natural duct color.
- Model 152G gang operated blades are adjustable with pole operator. Front or rear blades can be gang operated.
- Optional steel opposed blade damper available (VCS3 or VCS5). See damper application guideline on pages D112 and D116 for more details.

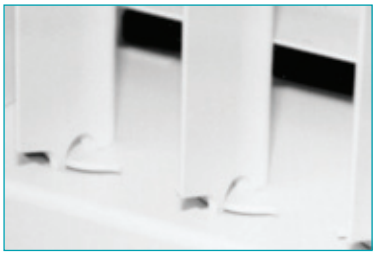
Model 152 Grille

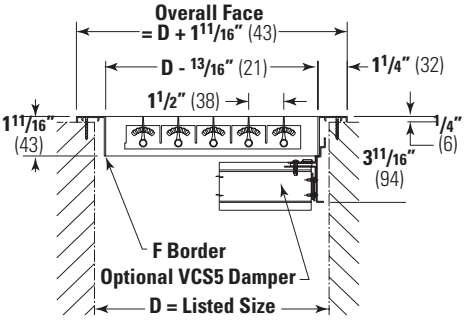




Model 152
Double Defection

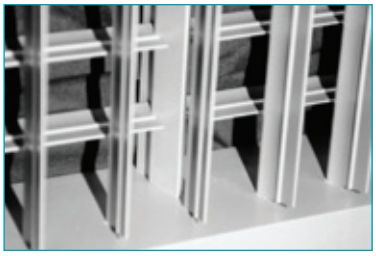
Patented Blade Indexing Device





Model 151
Single Defection

Heavy duty blades and mullion (Model 152 shown)



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Border Style according to installation requirements (F is standard).
4] Select Blade Orientation.
5] Select Mounting Frame if desired.
6] Select Fastening Type. (A is standard)
7] Select Blades to be Gang Operated (152G only).
8] Select Finish.

Example: 36 x 24 / 152D / F / S / A / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information (continued)

Construction

- Streamlined 1 1/4 in. [32] blades positioned on 1 1/2 in. [38] centers. Maximum blade length is 20 in. [508].
- Individually adjustable blades lock into position at 0, 15, 30 and 45° deflection in both directions.
- Gang operated front or rear blades adjust up to 45° in either direction with operator lever (models 152G).
- Blades, frame, mullions and the gang operator mechanism are extruded aluminum to resist corrosion. Blade indexing device is stainless steel and other hardware is coated steel.
- Optional steel opposed blade damper available (VCS3 or VCS5). See damper application guideline on pages D112 and D116 for more details.
- VCS5 not available on border style TL, IF.

Mounting / Finish Options

Border Style

Surface Mount 1 1/4 in. [32] Flat	**F**
Quick-Release Trunk Latch	**TL**
Inverted Frame	**IF**

Blade Orientation

Front blades parallel to Long Dimension	**L**
Front blades parallel to Short Dimension	**S**

Optional Mounting Frame

For **F** Border	**D**

Fastening

Countersunk screwholes c/w oval-head screws standard	**A**
No screwholes optional	**Ø**

Gang Operator (Model 152G)

Ganged front blades	**F**
Ganged rear blades	**R**

Finish

White Powder Coat	**B12**
Aluminum Powder Coat	**B15**
Mill Finish	**MILL**

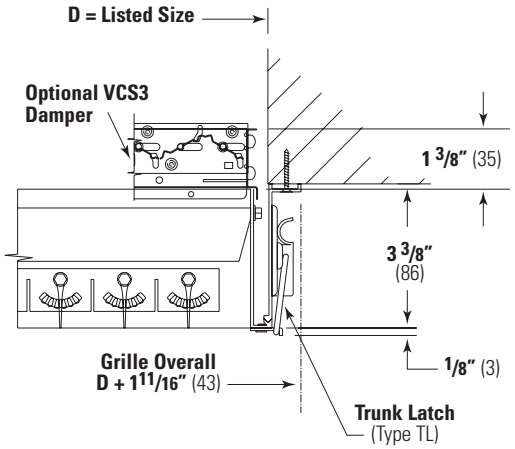
For optional and special finishes see color matrix.

Available Sizes

	Imperial	Metric
Minimum		
F Border	**6 in. x 4 in.**	[152 x 102]
TL/IF Border	**6 in. x 4 in.**	[152 x 102]
FG Gang Op	**6 in. x 6 in.**	[152 x 152]
Maximum		
F Border	**48 in. x 48 in.**	[1219 x 1219]
TL/IF Border	**48 in. x 48 in.**	[1219 x 1219]
FG Gang Op.	**48 in. x 36 in.**	[1219 x 914]

Border / Frame with Trunk Latch Fastening (TL)

This integral combination of border, frame and fastening provides a unique 'stand-off' type surface mounting with a quick-release trunk latch mechanism that allows for easy removal and replacement of the grille for cleaning. (1/2 in. [13] Border c/w 3 3/8 in. [86] 'stand-off' frame and trunk latch fastening (N/A on model 152G)). Both border and frame are of extruded aluminum. Inverted frame (Type IF) is also available (border and frame permanently fastened - no latch).

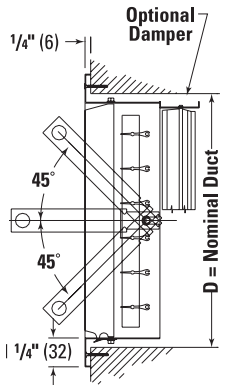


All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

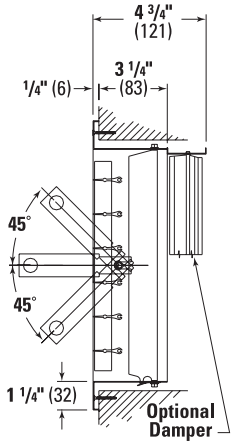
Product Details

Gang Operated Front or Rear Blades
Model 152G / 302G

Price Model 152G / 302G double deflection grille is available with front or rear gang operated blades to allow for directional control of air flow in remote mounted units. A pole operated lever on the face of the unit facilitates deflection of the ganged blades 45° from either side of center. The second set of blades are individually adjustable from the face of the grille for added directional control. Available with **F** border only.

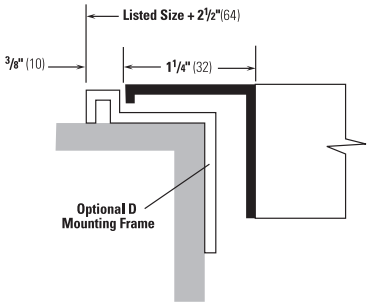


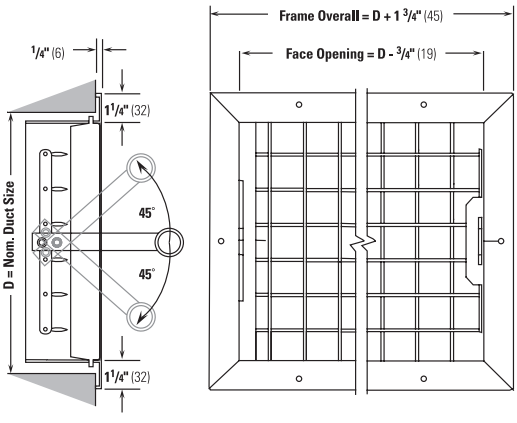
152G Rear Blades Ganged



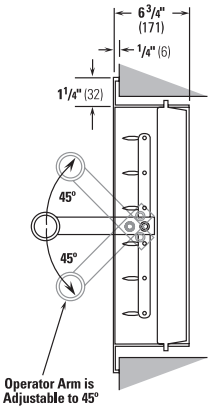
152G Front Blades Ganged

F Border
FD Border / Frame





302G Rear Blades Ganged



302G Front Blades Ganged

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Louvered Face Supply
300 Series
Airfoil Blade – 3 in. Blade Depth

Product Information

Models

Double Deflection
Grille **302**

Single Deflection
Grille **301**

Gang Operated Double Deflection
Grille **302G**

Application

- Solid, durable design for industrial conditions.
- Extra-depth airfoil blades for maximum strength and superior control of large air volumes.

Construction

- Individually adjustable 3 in. [76] deep extruded aluminum blades, 3 in. [76] on center frictionalized blade pivots.
- Heavy formed steel 1¼ in. [32] flat border.
- Available in two core styles.
- Optional gang operated front or rear blades c/w pole operator.
- Optional steel opposed blade damper available (VCS3 or VCS5). See damper application guidelines on pages D112 and D116 for more details.
- Blades over 24 in. are supported by extruded aluminum pivot mullion for added strength.

Mounting / Finish Options

Border Style

Surface Mount 1 ¼ in. [32] Flat

Blade Orientation

Front blades parallel to Long Dimension **L**
Front blades parallel to Short Dimension **S**

Optional Surface Mounting

Frame **D**

Fastening

Countersunk screwholes c/w oval-head screws **A**

No screwholes **Ø**

Gang Operator (Model 302G)

Ganged front blades **F**
Ganged rear blades **R**

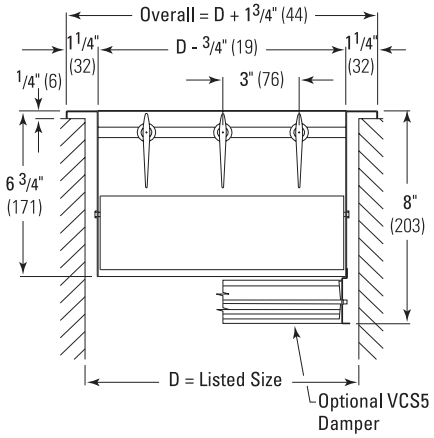
Finish

White Powder Coat **B12**

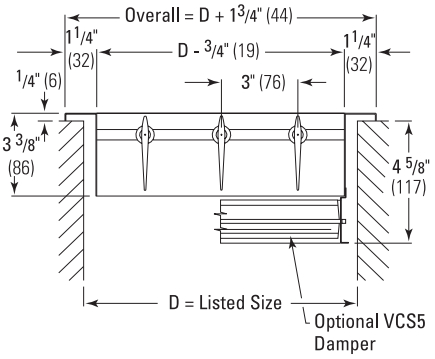
Aluminum Powder Coat **B15**

For optional and special finishes see color matrix.

Model 302D
(Double Deflection)



Model 301D
(Single Deflection)



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Blade Orientation.
4] Select Mounting Frame if desired.
5] Select Fastening Type (A is standard).
6] Select Blades to be Gang Operated (302G only).
7] Select Finish.

Example: 36 x 24 / 302D / S / A / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

	Core Velocity fpm		300	400	500	600	700	800	1000	1200	1400	1600	1800
	Velocity Pressure		0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	0.202
Size	Total	0°	0.011	0.020	0.031	0.045	0.061	0.080	0.125	0.180	0.246	0.321	0.406
	Pressure	15°	0.014	0.025	0.039	0.056	0.077	0.100	0.156	0.225	0.307	0.401	0.507
		45°	0.031	0.055	0.085	0.123	0.167	0.219	0.341	0.492	0.669	0.874	1.106
Ac = **0.15** ft²	cfm		45	60	75	90	105	120	150	180	210	240	270
7x4 6x5	NC		-	-	16	21	26	30	36	41	46	50	53
		0°	4-6-11	5-8-14	6-9-15	8-11-17	9-13-18	10-14-19	12-15-21	14-17-23	15-18-25	16-19-27	17-20-29
	Throw	15°	3-5-9	4-6-11	5-8-12	6-9-13	7-10-14	8-11-15	10-12-17	11-13-19	12-14-20	12-15-22	13-16-23
	ft	45°	2-3-6	3-4-7	3-5-8	4-6-8	4-6-9	5-7-10	6-8-11	7-8-12	7-9-13	8-10-14	8-10-14
Ac = **0.18** ft²	cfm		54	72	90	108	126	144	180	216	252	288	324
8x4 7x5	NC		-	-	16	22	26	30	36	42	46	50	53
6x6		0°	4-6-12	6-8-15	7-10-17	8-12-18	10-14-20	11-15-21	14-17-23	15-18-26	16-20-28	17-21-30	18-22-31
	Throw	15°	3-5-10	4-7-12	6-8-13	7-10-15	8-11-16	9-12-17	11-13-19	12-15-21	13-16-22	14-17-24	15-18-25
	ft	45°	2-3-6	3-4-7	3-5-8	4-6-9	5-7-10	6-7-10	7-8-12	7-9-13	8-10-14	9-10-15	9-11-16
Ac = **0.22** ft²	cfm		66	88	110	132	154	176	220	264	308	352	396
10x4 8x5	NC		-	-	17	22	26	30	37	42	46	50	54
7x6		0°	4-7-14	6-9-16	8-11-18	9-14-20	11-15-22	12-16-23	15-18-26	16-20-28	18-22-31	19-23-33	20-25-35
	Throw	15°	3-6-11	5-7-13	6-9-15	7-11-16	9-12-17	10-13-19	12-15-21	13-16-23	14-17-25	15-19-26	16-20-28
	ft	45°	2-3-7	3-5-8	4-6-9	5-7-10	5-8-11	6-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-17
Ac = **0.26** ft²	cfm		78	104	130	156	182	208	260	312	364	416	468
12x4 10x5	NC		-	-	17	22	27	31	37	42	47	51	54
8x6		0°	5-7-15	7-10-18	8-12-20	10-15-22	12-17-24	13-18-25	16-20-28	18-22-31	19-24-33	21-25-36	22-27-38
	Throw	15°	4-6-12	5-8-14	7-10-16	8-12-17	9-13-19	11-14-20	13-16-23	14-17-25	15-19-27	16-20-28	17-21-30
	ft	45°	2-4-7	3-5-9	4-6-10	5-7-11	6-8-12	7-9-13	8-10-14	9-11-15	10-12-17	10-13-18	11-13-19
Ac = **0.30** ft²	cfm		90	120	150	180	210	240	300	360	420	480	540
14x4	NC		-	-	17	22	27	31	37	43	47	51	54
		0°	5-8-16	7-11-19	9-13-21	11-16-23	13-18-25	14-19-27	17-21-30	19-23-33	21-25-36	22-27-38	23-29-41
	Throw	15°	4-6-13	6-9-15	7-11-17	9-13-19	10-14-20	11-15-22	14-17-24	15-19-27	17-20-29	18-22-31	19-23-32
	ft	45°	2-4-8	4-5-10	4-7-11	5-8-12	6-9-13	7-10-14	9-11-15	10-12-17	10-13-18	11-14-19	12-14-20
Ac = **0.34** ft²	cfm		102	136	170	204	238	272	340	408	476	544	612
16x4 12x5	NC		-	-	17	23	27	31	37	43	47	51	54
10x6		0°	5-9-17	8-11-20	10-14-23	11-17-25	13-19-27	15-20-29	19-23-32	20-25-35	22-27-38	24-29-41	25-31-43
	Throw	15°	4-7-14	6-9-16	8-11-18	9-14-20	11-15-22	12-16-23	15-18-26	16-20-28	18-22-30	19-23-33	20-24-35
	ft	45°	3-4-9	4-6-10	5-7-11	6-9-12	7-10-13	8-10-14	9-11-16	10-12-18	11-13-19	12-14-20	12-15-22
Ac = **0.39** ft²	cfm		117	156	195	234	273	312	390	468	546	624	702
18x4 14x5	NC		-	-	18	23	27	31	38	43	47	51	55
12x6 8x8		0°	6-9-18	8-12-22	10-15-24	12-18-27	14-20-29	16-22-31	20-24-34	22-27-38	24-29-41	25-31-44	27-33-46
	Throw	15°	5-7-15	7-10-17	8-12-20	10-15-21	11-16-23	13-17-25	16-20-28	17-21-30	19-23-33	20-25-35	21-26-37
	ft	45°	3-5-9	4-6-11	5-8-12	6-9-13	7-10-14	8-11-15	10-12-17	11-13-19	12-14-20	13-15-22	13-16-23

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The NC values are based on a room absorption of 10dB, re 10^{-12} watts with a single register set at 0° deflection. For deflection settings of 15° and 45°, increase the listed sound levels by 1 and 12 respectively.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection**
   The listed deflection settings refer to horizontal deflection. For a 15° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 15° horizontal setting.
   The performance tables are based on units with an opposed blade damper.

Corrections for grilles without dampers

	0°	15°	45°
NC	-13	-13	-5
Total Pressure	x .82	x .83	x .93

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

	Core Velocity fpm			300	400	500	600	700	800	1000	1200	1400	1600	1800
	Velocity Pressure			0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	0.202
Size		**Total**	**0°**	0.011	0.020	0.031	0.045	0.061	0.080	0.125	0.180	0.246	0.321	0.406
		Pressure	**15°**	0.014	0.025	0.039	0.056	0.077	0.100	0.156	0.225	0.307	0.401	0.507
			45°	0.031	0.055	0.085	0.123	0.167	0.219	0.341	0.492	0.669	0.874	1.106
Ac = **0.46** ft²		**cfm**		**138**	**184**	**230**	**276**	**322**	**368**	**460**	**552**	**644**	**736**	**828**
20x4	16x5	**NC**		**-**	**-**	**18**	**23**	**28**	**32**	**38**	**43**	**48**	**52**	**55**
14x6	10x8		**0°**	6-10-20	9-13-24	11-17-26	13-20-29	16-22-31	18-24-34	22-26-37	24-29-41	26-31-44	27-34-47	29-36-50
		Throw	**15°**	5-8-16	7-11-19	9-13-21	11-16-23	12-18-25	14-19-27	17-21-30	19-23-33	20-25-35	22-27-38	23-28-40
		ft	**45°**	3-5-10	4-7-12	6-8-13	7-10-15	8-11-16	9-12-17	11-13-19	12-15-21	13-16-22	14-17-24	15-18-25
Ac = **0.52** ft²		**cfm**		**156**	**208**	**260**	**312**	**364**	**416**	**520**	**624**	**728**	**832**	**936**
24x4	18x5	**NC**		**-**	**-**	**18**	**23**	**28**	**32**	**38**	**43**	**48**	**52**	**55**
16x6			**0°**	7-11-21	9-14-25	12-18-28	14-21-31	16-24-33	19-25-36	23-28-40	25-31-44	27-33-47	29-36-50	31-38-53
		Throw	**15°**	5-8-17	8-11-20	9-14-23	11-17-25	13-19-27	15-20-28	18-23-32	20-25-35	22-27-38	23-28-40	25-30-43
		ft	**45°**	3-5-11	5-7-13	6-9-14	7-11-15	8-12-17	9-13-18	11-14-20	13-15-22	14-17-24	15-18-25	15-19-27
Ac = **0.60** ft²		**cfm**		**180**	**240**	**300**	**360**	**420**	**480**	**600**	**720**	**840**	**960**	**1080**
28x4	20x5	**NC**		**-**	**-**	**18**	**24**	**28**	**32**	**38**	**44**	**48**	**52**	**55**
18x6	12x8		**0°**	7-11-23	10-15-27	13-19-30	15-23-33	18-25-36	20-27-38	25-30-43	27-33-47	29-36-51	31-38-54	33-41-57
10x10		**Throw**	**15°**	6-9-18	8-12-22	10-15-24	12-18-27	14-20-29	16-22-31	20-24-34	22-27-37	23-29-40	25-31-43	27-32-46
		ft	**45°**	4-6-11	5-8-14	6-9-15	8-11-17	9-13-18	10-14-19	12-15-21	14-17-23	15-18-25	16-19-27	17-20-29
Ac = **0.69** ft²		**cfm**		**207**	**276**	**345**	**414**	**483**	**552**	**690**	**828**	**966**	**1104**	**1242**
30x4	24x5	**NC**		**-**	**-**	**19**	**24**	**28**	**32**	**39**	**44**	**48**	**52**	**56**
20x6	14x8		**0°**	8-12-24	11-16-29	14-20-32	16-24-36	19-27-38	22-29-41	26-32-46	29-36-50	31-38-54	34-41-58	36-44-62
12x10		**Throw**	**15°**	6-10-20	9-13-23	11-16-26	13-20-28	15-22-31	17-23-33	21-26-37	23-28-40	25-31-43	27-33-46	28-35-49
		ft	**45°**	4-6-12	5-8-15	7-10-16	8-12-18	9-14-19	11-15-21	13-16-23	15-18-25	16-19-27	17-21-29	18-22-31
Ac = **0.81** ft²		**cfm**		**243**	**324**	**405**	**486**	**567**	**648**	**810**	**972**	**1134**	**1296**	**1458**
36x4	28x5	**NC**		**-**	**-**	**19**	**24**	**29**	**32**	**39**	**44**	**49**	**52**	**56**
22x6	16x8		**0°**	8-13-26	12-18-31	15-22-35	18-26-39	21-29-42	24-31-44	29-35-50	31-39-54	34-42-59	36-44-63	39-47-67
14x10		**Throw**	**15°**	7-11-21	9-14-25	12-18-28	14-21-31	16-24-33	19-25-36	23-28-40	25-31-44	27-33-47	29-36-50	31-38-53
		ft	**45°**	4-7-13	6-9-16	7-11-18	9-13-19	10-15-21	12-16-22	14-18-25	16-19-27	17-21-29	18-22-31	19-24-33
Ac = **0.90** ft²		**cfm**		**270**	**360**	**450**	**540**	**630**	**720**	**900**	**1080**	**1260**	**1440**	**1620**
40x4	30x5	**NC**		**-**	**-**	**19**	**24**	**29**	**33**	**39**	**44**	**49**	**53**	**56**
26x6	18x8		**0°**	9-14-28	12-19-33	15-23-37	19-28-41	22-31-44	25-33-47	30-37-52	33-41-57	36-44-62	38-47-66	41-50-70
16x10	12x12	**Throw**	**15°**	7-11-22	10-15-27	12-19-30	15-22-32	17-25-35	20-27-37	24-30-42	27-32-46	29-35-50	31-37-53	32-40-56
		ft	**45°**	4-7-14	6-9-17	8-12-19	9-14-20	11-15-22	12-17-23	15-19-26	17-20-29	18-22-31	19-23-33	20-25-35
Ac = **1.07** ft²		**cfm**		**321**	**428**	**535**	**642**	**749**	**856**	**1070**	**1284**	**1498**	**1712**	**1926**
48x4	36x5	**NC**		**-**	**-**	**19**	**25**	**29**	**33**	**39**	**45**	**49**	**53**	**56**
30x6	18x10		**0°**	9-15-30	14-20-36	17-25-40	20-30-44	24-34-48	27-36-51	33-40-57	36-44-63	39-48-68	42-51-72	44-54-77
14x12		**Throw**	**15°**	7-12-24	11-16-29	14-20-32	16-24-35	19-27-38	22-29-41	26-32-46	29-35-50	31-38-54	33-41-58	35-43-61
		ft	**45°**	5-8-15	7-10-18	8-13-20	10-15-22	12-17-24	14-18-26	16-20-29	18-22-31	20-24-34	21-26-36	22-27-38

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The NC values are based on a room absorption of 10dB, re 10^{-12} watts with a single register set at 0° deflection. For deflection settings of 15° and 45°, increase the listed sound levels by 1 and 12 respectively.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection**
   The listed deflection settings refer to horizontal deflection. For a 15° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 15° horizontal setting.
   The performance tables are based on units with an opposed blade damper.

Corrections for grilles without dampers

	0°	15°	45°
NC	-13	-13	-5
Total Pressure	x .82	x .83	x .93

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

	Core Velocity fpm			300	400	500	600	700	800	1000	1200	1400	1600	1800
	Velocity Pressure			0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	0.202
Size		**Total**	**0°**	0.011	0.020	0.031	0.045	0.061	0.080	0.125	0.180	0.246	0.321	0.406
		Pressure	**15°**	0.014	0.025	0.039	0.056	0.077	0.100	0.156	0.225	0.307	0.401	0.507
			45°	0.031	0.055	0.085	0.123	0.167	0.219	0.341	0.492	0.669	0.874	1.106
Ac = **1.18** ft²		**cfm**		**354**	**472**	**590**	**708**	**826**	**944**	**1180**	**1416**	**1652**	**1888**	**2124**
34x6	24x8	**NC**		-	-	**20**	**25**	**29**	**33**	**40**	**45**	**49**	**53**	**57**
20x10	16x12		**0°**	10-16-32	14-21-38	18-27-42	21-32-46	25-35-50	28-38-54	35-42-60	38-46-66	41-50-71	44-54-76	46-57-80
14x14		**Throw**	**15°**	8-13-26	11-17-30	14-21-34	17-26-37	20-28-40	23-30-43	28-34-48	30-37-53	33-40-57	35-43-61	37-46-64
		ft	**45°**	5-8-16	7-11-19	9-13-21	11-16-23	12-18-25	14-19-27	17-21-30	19-23-33	20-25-35	22-27-38	23-28-40
Ac = **1.34** ft²		**cfm**		**402**	**536**	**670**	**804**	**938**	**1072**	**1340**	**1608**	**1876**	**2144**	**2412**
60x4	48x5	**NC**		-	-	**20**	**25**	**29**	**33**	**40**	**45**	**49**	**53**	**57**
36x6	18x12		**0°**	10-17-34	15-23-40	19-28-45	23-34-50	26-38-53	30-40-57	37-45-64	40-50-70	44-53-76	47-57-81	50-61-86
16x14		**Throw**	**15°**	8-14-27	12-18-32	15-23-36	18-27-40	21-30-43	24-32-46	30-36-51	32-40-56	35-43-61	37-46-65	40-49-69
		ft	**45°**	5-9-17	8-11-20	9-14-23	11-17-25	13-19-27	15-20-29	18-23-32	20-25-35	22-27-38	23-29-40	25-30-43
Ac = **1.60** ft²		**cfm**		**480**	**640**	**800**	**960**	**1120**	**1280**	**1600**	**1920**	**2240**	**2560**	**2880**
72x4	30x8	**NC**		-	-	**20**	**25**	**30**	**34**	**40**	**45**	**50**	**54**	**57**
24x10	22x12		**0°**	11-19-37	17-25-44	21-31-49	25-37-54	29-41-58	33-44-62	40-49-70	44-54-77	48-58-83	51-62-88	54-66-94
18x14	16x16	**Throw**	**15°**	9-15-30	13-20-35	17-25-40	20-30-43	23-33-47	26-35-50	32-40-56	35-43-61	38-47-66	41-50-71	43-53-75
		ft	**45°**	6-9-19	8-12-22	10-15-25	12-19-27	14-21-29	17-22-31	20-25-35	22-27-38	24-29-41	26-31-44	27-33-47
Ac = **1.80** ft²		**cfm**		**540**	**720**	**900**	**1080**	**1260**	**1440**	**1800**	**2160**	**2520**	**2880**	**3240**
60x5	48x6	**NC**		-	-	**20**	**26**	**30**	**34**	**40**	**46**	**50**	**54**	**57**
36x8	30x10		**0°**	12-20-39	18-26-47	22-33-52	26-39-57	31-44-62	35-47-66	43-52-74	47-57-81	51-62-88	54-66-94	57-70-99
24x12	20x14	**Throw**	**15°**	10-16-32	14-21-37	18-26-42	21-32-46	25-35-50	28-37-53	34-42-59	37-46-65	40-50-70	43-53-75	46-56-80
		ft	**45°**	6-10-20	9-13-23	11-16-26	13-20-29	15-22-31	18-23-33	21-26-37	23-29-41	25-31-44	27-33-47	29-35-50
Ac = **2.08** ft²		**cfm**		**624**	**832**	**1040**	**1248**	**1456**	**1664**	**2080**	**2496**	**2912**	**3328**	**3744**
72x5	60x6	**NC**		-	-	**20**	**26**	**30**	**34**	**41**	**46**	**50**	**54**	**57**
40x8	35x10		**0°**	13-21-42	19-28-50	24-35-56	28-42-62	33-47-67	38-50-71	46-56-80	50-62-87	54-67-94	58-71-101	62-76-107
30x12	24x14	**Throw**	**15°**	10-17-34	15-23-40	19-28-45	23-34-49	26-38-53	30-40-57	37-45-64	40-49-70	44-53-75	47-57-81	49-60-85
20x16	18x18	**ft**	**45°**	7-11-21	9-14-25	12-18-28	14-21-31	16-24-33	19-25-36	23-28-40	25-31-44	27-33-47	29-36-50	31-38-53
Ac = **2.45** ft²		**cfm**		**735**	**980**	**1225**	**1470**	**1715**	**1960**	**2450**	**2940**	**3430**	**3920**	**4410**
72x6	48x8	**NC**		-	-	**21**	**26**	**30**	**34**	**41**	**46**	**50**	**54**	**58**
32x12	26x14		**0°**	14-23-46	20-31-55	26-38-61	31-46-67	36-51-72	41-55-77	50-61-86	55-67-95	59-72-102	63-77-109	67-82-116
24x16	20x18	**Throw**	**15°**	11-18-37	16-25-44	20-31-49	25-37-54	29-41-58	33-44-62	40-49-69	44-54-76	47-58-82	51-62-87	54-66-93
20x20		**ft**	**45°**	7-12-23	10-15-27	13-19-31	15-23-33	18-26-36	20-27-39	25-31-43	27-33-47	30-36-51	32-39-55	33-41-58
Ac=**2.78** ft²		**cfm**		**834**	**1112**	**1390**	**1668**	**1946**	**2224**	**2780**	**3336**	**3892**	**4448**	**5004**
36x12	30x14	**NC**		-	-	**21**	**26**	**31**	**35**	**41**	**46**	**51**	**55**	**58**
26x16	24x18		**0°**	15-25-49	22-33-58	27-41-65	33-49-71	38-54-77	44-58-82	53-65-92	58-71-101	63-77-109	67-82-116	71-87-124
22x20		**Throw**	**15°**	12-20-39	17-26-47	22-33-52	26-39-57	31-44-62	35-47-66	43-52-74	47-57-81	50-62-87	54-66-93	57-70-99
		ft	**45°**	8-12-25	11-16-29	14-20-33	16-25-36	19-27-39	22-29-41	27-33-46	29-36-50	31-39-54	34-41-58	36-44-62

Performance Notes:

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3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The NC values are based on a room absorption of 10dB, re 10^{-12} watts with a single register set at 0° deflection. For deflection settings of 15° and 45°, increase the listed sound levels by 1 and 12 respectively.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection**
   The listed deflection settings refer to horizontal deflection. For a 15° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 15° horizontal setting.
   The performance tables are based on units with an opposed blade damper.

Corrections for grilles without dampers

	0°	15°	45°
NC	-13	-13	-5
Total Pressure	x .82	x .83	x .93

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

	Core Velocity fpm			300	400	500	600	700	800	1000	1200	1400	1600	1800
	Velocity Pressure			0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	0.202
Size		**Total**	**0°**	0.011	0.020	0.031	0.045	0.061	0.080	0.125	0.180	0.246	0.321	0.406
		Pressure	**15°**	0.014	0.025	0.039	0.056	0.077	0.100	0.156	0.225	0.307	0.401	0.507
			45°	0.031	0.055	0.085	0.123	0.167	0.219	0.341	0.492	0.669	0.874	1.106
Ac = **3.11** ft²		**cfm**		**933**	**1244**	**1555**	**1866**	**2177**	**2488**	**3110**	**3732**	**4354**	**4976**	**5598**
60x8	48x10	**NC**		**-**	**-**	**21**	**26**	**31**	**35**	**41**	**46**	**51**	**55**	**58**
40x12	36x14		**0°**	16-26-52	23-35-62	29-43-69	35-52-75	40-58-81	46-62-87	56-69-97	62-75-107	67-81-115	71-87-123	75-92-131
30x16	26x18	**Throw**	**15°**	13-21-41	18-28-49	23-35-55	28-41-60	32-46-65	37-49-70	45-55-78	49-60-85	53-65-92	57-70-99	60-74-105
		ft	**45°**	8-13-26	12-17-31	14-22-34	17-26-38	20-29-41	23-31-44	28-34-49	31-38-53	33-41-58	36-44-62	38-46-65
Ac=**3.61** ft²		**cfm**		**1083**	**1444**	**1805**	**2166**	**2527**	**2888**	**3610**	**4332**	**5054**	**5776**	**6498**
72x8	60x10	**NC**		**-**	**-**	**21**	**27**	**31**	**35**	**41**	**47**	**51**	**55**	**58**
48x12	36x16		**0°**	17-28-56	25-37-66	31-47-74	37-56-81	43-62-88	50-66-94	61-74-105	66-81-115	72-88-124	77-94-133	81-100-141
30x18	28x20	**Throw**	**15°**	14-22-45	20-30-53	25-37-59	30-45-65	35-50-70	40-53-75	48-59-84	53-65-92	57-70-99	61-75-106	65-80-113
		ft	**45°**	9-14-28	12-19-33	16-23-37	19-28-41	22-31-44	25-33-47	30-37-52	33-41-57	36-44-62	38-47-66	41-50-70
Ac=**4.29** ft²		**cfm**		**1287**	**1716**	**2145**	**2574**	**3003**	**3432**	**4290**	**5148**	**6006**	**6864**	**7722**
48x14	36x18	**NC**		**-**	**15**	**22**	**27**	**31**	**35**	**42**	**47**	**51**	**55**	**59**
32x20	28x24		**0°**	19-30-61	27-41-72	34-51-81	41-61-89	47-68-96	54-72-102	66-81-114	72-89-125	78-96-135	84-102-145	89-109-153
		Throw	**15°**	15-24-49	22-32-58	27-41-65	32-49-71	38-54-77	43-58-82	53-65-92	58-71-100	63-77-108	67-82-116	71-87-123
		ft	**45°**	9-15-30	14-20-36	17-25-40	20-30-44	24-34-48	27-36-51	33-40-57	36-44-63	39-48-68	42-51-72	44-54-77
Ac = **4.65** ft²		**cfm**		**1395**	**1860**	**2325**	**2790**	**3255**	**3720**	**4650**	**5580**	**6510**	**7440**	**8370**
72x10	48x16	**NC**		**-**	**15**	**22**	**27**	**32**	**35**	**42**	**47**	**52**	**55**	**59**
36x20	30x24		**0°**	20-32-63	28-42-75	35-53-84	42-63-92	49-70-100	56-75-107	69-84-119	75-92-130	81-100-141	87-107-151	92-113-160
		Throw	**15°**	16-25-51	23-34-60	28-42-67	34-51-74	39-56-80	45-60-85	55-67-95	60-74-104	65-80-113	70-85-121	74-90-128
		ft	**45°**	10-16-32	14-21-38	18-26-42	21-32-46	25-35-50	28-38-53	34-42-60	38-46-65	41-50-70	43-53-75	46-56-80
Ac = **5.58** ft²		**cfm**		**1674**	**2232**	**2790**	**3348**	**3906**	**4464**	**5580**	**6696**	**7812**	**8928**	**10044**
72x12	60x14	**NC**		**-**	**16**	**22**	**27**	**32**	**36**	**42**	**47**	**52**	**56**	**59**
48x18	36x24		**0°**	21-35-69	31-46-83	39-58-92	46-69-101	54-77-109	62-83-117	75-92-130	83-101-143	89-109-154	95-117-165	101-124-175
		Throw	**15°**	17-28-56	25-37-66	31-46-74	37-56-81	43-62-87	49-66-93	60-74-104	66-81-114	71-87-123	76-93-132	81-99-140
		ft	**45°**	11-17-35	15-23-41	19-29-46	23-35-51	27-39-55	31-41-58	38-46-65	41-51-71	45-55-77	48-58-83	51-62-88
Ac = **6.25** ft²		**cfm**		**1875**	**2500**	**3125**	**3750**	**4375**	**5000**	**6250**	**7500**	**8750**	**10000**	**11250**
72x14	60x16	**NC**		**-**	**16**	**22**	**28**	**32**	**36**	**42**	**48**	**52**	**56**	**59**
48x20	30x30		**0°**	23-37-74	33-49-87	41-61-98	49-74-107	57-82-116	65-87-124	80-98-138	87-107-151	94-116-163	101-124-175	107-131-185
		Throw	**15°**	18-29-59	26-39-70	33-49-78	39-59-86	46-65-92	52-70-99	64-78-110	70-86-121	75-92-131	81-99-140	86-105-148
		ft	**45°**	11-18-37	16-25-44	20-31-49	25-37-53	29-41-58	33-44-62	40-49-69	44-53-76	47-58-82	50-62-87	53-65-93

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The NC values are based on a room absorption of 10dB, re 10^{-12} watts with a single register set at 0° deflection. For deflection settings of 15° and 45°, increase the listed sound levels by 1 and 12 respectively.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection**
   The listed deflection settings refer to horizontal deflection. For a 15° upward deflection, use the room throw rating for a 0° setting and the total pressure for a 15° horizontal setting.
   The performance tables are based on units with an opposed blade damper.

Corrections for grilles without dampers

	0°	15°	45°
NC	-13	-13	-5
Total Pressure	x .82	x .83	x .93

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

MIG Series - 1½ in. Blade Spacing

Product Information

Models

1 Grille Module	**MIG1**
2 Grille Module	**MIG2**
3 Grille Module	**MIG3**
4 Grille Module	**MIG4**

Price Modular Industrial Grille combines the features of the 152 series industrial grille with a special modular mounting arrangement. The rotatable grille modules and individually adjustable blades allow maximum flexibility in air control. Grille modules are designed to be rugged and reliable. Streamlined heavy duty blades are extruded from high strength aluminum alloy. Price's unique blade indexing device (patent pending) locks each blade into position to prevent unwanted changes in blade deflection. Blades are securely fastened to the heavy duty frame with screws, and will hold their position, even after being adjusted multiple times.

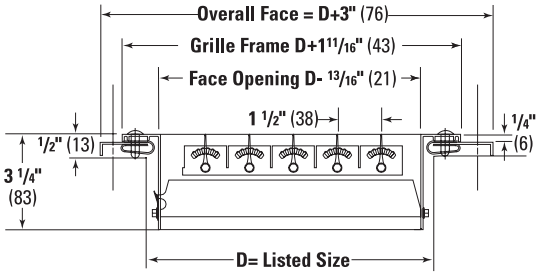
Application

- Modular construction and individually adjustable blades allow MIG to be modified on-site to suit almost any condition.
- The MIG can be used to throw large amounts of air (up to 1800 fpm) long or short distances, or to produce spot heating or cooling.
- Rugged construction for commercial, factory, warehouse or textile mill applications.
- Maximum free area to reduce pressure drop and minimize the effect of dirt loading.

Construction

- Modular core consists of double deflection individually adjustable blades. Streamlined 1 ¼ in. [32] blades are positioned on 1½ in. [38] centers. Individually adjustable blades lock into position at 0, 15, 30 and 45 degree deflection in both directions.
- Available in 1, 2, 3, or 4 module arrangements with 8 in.[203], 10 in.[254], 12 in.[305] or 15 in.[381] module sizes.
- Grille modules are fastened to panel with quick-release ¼ turn fasteners.
- Blades and frame are extruded aluminum. Panel is painted heavy gauge steel. Blade indexing device is stainless steel. Other hardware is coated steel.

Model MIG3



Dimensional Data - Imperial (in.) / Metric [mm]

D= Listed Size / Duct	D - Duct Dimensions			
	1 Module	2 Modules	3 Modules	4 Modules
8 [203]	8 [203]	19 [483]	30 [762]	41 [1041]
10 [254]	10 [254]	23 [584]	36 [914]	49 [1245]
12 [305]	12 [305]	27 [686]	42 [1067]	57 [1448]
15 [381]	15 [381]	33 [838]	51 [1295]	69 [1753]

Mounting / Finish Options

Blade Orientation

All modules shipped with front blades parallel to long dimension of unit **L**

All modules shipped with front blades parallel to short dimension of unit **S**

Note: Modules field rotatable from L to S.

Finish

White Powder Coat	**B12**
Aluminum Powder Coat	**B15**

For optional and special finishes see color matrix.

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (i.e. # of modules).
3] Select Blade Orientation (for shipping from factory to field adjustable).
4] Select Finish.

Example: 8 in. / MIG2 / S / B12

GRILLES AND REGISTERS

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

MIG1 — 1 Module

Listed Size	Core Velocity fpm		300	400	500	600	700	800	1000	1200	1400	1600	1800
	Velocity Pressure		0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	0.202
	Total Pressure	0°	0.009	0.016	0.025	0.035	0.049	0.063	0.097	0.141	0.192	0.251	0.317
		15°	0.010	0.017	0.027	0.037	0.052	0.067	0.104	0.150	0.204	0.267	0.337
		45°	0.020	0.033	0.052	0.072	0.101	0.130	0.202	0.293	0.397	0.520	0.657
8	cfm		110	146	183	219	256	292	365	438	511	584	657
	NC		—	—	—	—	—	—	—	21	27	32	36
	Throw Feet	0°	6-9-17	9-11-21	10-14-22	11-16-25	13-19-27	15-20-28	18-23-32	20-25-35	22-27-38	24-29-40	26-31-43
		15°	5-7-14	7-9-16	8-11-18	10-13-19	11-15-21	12-16-23	15-18-26	16-20-28	18-21-30	19-23-32	21-35-34
		45°	3-5-10	4-6-10	5-8-12	6-9-13	8-10-14	8-10-14	10-12-15	11-13-17	11-13-19	11-14-20	12-15-22
10	cfm		178	238	297	357	416	475	594	713	832	951	1070
	NC		—	—	—	—	—	—	16	22	28	33	38
	Throw Feet	0°	7-11-22	10-15-26	13-18-28	15-22-31	17-25-34	20-27-37	24-29-42	27-32-45	28-35-47	20-37-51	32-40-54
		15°	6-10-17	9-12-20	10-15-23	12-17-25	14-20-28	16-21-29	19-24-33	21-26-35	23-28-39	24-29-42	26-31-44
		45°	4-6-11	5-8-13	7-10-15	8-11-15	10-12-17	10-13-18	12-15-20	13-15-22	13-17-24	15-18-26	15-19-27
12	cfm		264	352	439	527	615	703	879	1055	1230	1406	1582
	NC		—	—	—	—	—	—	17	23	29	34	39
	Throw Feet	0°	8-14-28	13-18-31	16-23-36	16-23-36	22-30-41	25-32-44	29-36-51	32-40-54	34-42-58	37-45-63	39-48-66
		15°	6-11-22	10-15-25	13-18-29	13-18-29	17-24-33	20-26-35	24-29-40	26-31-43	28-34-46	29-36-50	31-39-53
		45°	5-7-14	6-9-16	8-12-17	8-12-17	11-15-21	13-16-22	15-18-25	16-19-27	17-21-29	18-22-31	19-24-33
15	cfm		423	564	705	846	987	1128	1410	1692	1974	2256	2538
	NC		—	—	—	—	—	—	18	25	30	35	40
	Throw Feet	0°	11-18-34	16-23-40	19-29-44	23-35-48	27-38-53	31-40-56	37-44-61	40-49-68	42-53-73	45-56-79	49-60-84
		15°	9-14-28	13-19-32	15-24-36	18-28-39	22-30-42	25-32-44	30-35-49	32-39-54	34-42-59	36-45-63	39-48-67
		45°	6-9-17	8-12-20	10-15-22	12-17-24	14-19-26	16-20-27	19-22-31	20-25-34	21-27-37	23-28-39	24-29-42

MIG2 — 2 Modules

8	cfm		219	292	365	438	511	584	730	876	1022	1168	1314
	NC		—	—	—	—	—	—	16	23	29	34	38
	Throw Feet	0°	8-13-25	12-17-28	15-22-32	18-25-35	20-27-38	23-29-40	26-32-45	29-36-49	31-38-53	33-40-56	35-43-59
		15°	6-10-20	10-14-23	12-18-26	14-20-28	16-27-30	18-23-32	21-26-36	23-29-39	25-30-42	26-32-45	28-34-47
		45°	4-7-13	6-9-14	8-1-16	9-13-18	10-14-19	12-15-20	13-16-23	15-18-25	15-19-27	17-20-28	18-22-30
10	cfm		357	475	594	713	832	951	1188	1426	1664	1901	2139
	NC		—	—	—	—	—	—	17	24	30	35	39
	Throw Feet	0°	9-16-31	14-21-37	17-26-40	21-32-44	25-35-48	29-37-52	33-41-57	37-44-62	40-48-67	41-52-72	44-54-76
		15°	7-13-25	11-17-29	14-20-32	17-26-35	20-28-39	23-29-41	27-33-46	29-35-50	31-38-54	33-41-57	35-43-61
		45°	5-7-16	7-10-18	9-13-20	11-16-22	12-17-24	14-19-26	17-20-29	19-22-31	20-24-34	21-26-36	22-28-38
12	cfm		527	703	879	1055	1230	1406	1758	2109	2461	2813	3164
	NC		—	—	—	—	—	—	18	25	31	36	40
	Throw Feet	0°	12-19-39	17-26-44	22-32-51	27-40-54	29-42-58	34-45-63	41-51-70	44-55-77	48-60-83	52-63-89	55-67-95
		15°	9-16-31	14-20-35	17-26-40	21-31-43	24-34-46	28-36-50	33-40-56	35-44-62	39-48-66	41-51-72	44-53-75
		45°	6-10-19	8-13-22	11-16-25	13-19-27	15-21-29	17-22-31	20-25-35	22-28-39	24-29-41	26-32-44	28-34-47
15	cfm		846	1128	1410	1692	1974	2256	2820	3384	3948	4513	5077
	NC		—	—	—	—	—	—	20	27	32	37	42
	Throw Feet	0°	15-24-48	21-31-55	27-39-62	32-46-67	37-52-73	41-56-78	51-63-87	55-69-96	60-75-103	64-80-112	68-86-118
		15°	12-19-39	17-25-44	21-31-50	26-37-53	29-42-58	33-45-63	40-50-70	44-55-76	48-60-83	52-64-90	54-68-94
		45°	7-12-24	11-16-28	13-19-30	16-23-34	18-26-37	21-28-39	26-31-43	28-34-48	30-37-52	32-40-56	34-42-59

See Performance Notes on page D103.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

MIG3 — 3 Module

Listed Size	Core Velocity fpm		300	400	500	600	700	800	1000	1200	1400	1600	1800
	Velocity Pressure		.006	.010	.016	.022	.030	.040	.062	.090	.122	.159	.202
	Total Pressure ft	0°	.008	.014	.023	.031	.042	.056	.087	.126	.171	.223	.283
		15°	.009	.015	.025	.035	.047	.063	.097	.142	.192	.249	.318
		45°	.013	.023	.038	.052	.071	.095	.147	.213	.288	.376	.478
8	cfm		329	438	548	657	767	876	1095	1314	1533	1752	1971
	NC		—	—	—	—	—	—	17	24	30	35	39
	Throw Feet	0°	9-15-29	14-20-35	17-26-39	20-30-42	24-33-45	27-35-49	32-40-54	35-45-59	38-46-63	40-49-68	42-62-73
		15°	7-12-24	11-17-28	13-20-31	17-24-34	19-27-36	21-28-39	26-31-43	28-34-47	30-37-51	31-39-59	34-42-58
		45°	5-7-15	6-10-17	8-13-19	10-16-21	12-17-23	13-17-24	16-19-27	17-21-29	18-23-32	20-25-34	21-26-37
10	cfm		535	713	891	1070	1248	1426	1783	2139	2496	2852	3209
	NC		—	—	—	—	—	—	19	25	31	36	40
	Throw Feet	0°	12-19-39	17-26-44	22-32-51	27-40-59	29-42-58	34-45-63	41-51-70	44-55-77	48-60-83	52-63-89	55-67-95
		15°	9-16-31	14-20-35	17-26-40	21-31-43	24-34-46	28-36-50	33-40-56	35-44-62	39-48-66	41-51-72	44-53-75
		45°	6-10-19	8-13-22	11-16-25	13-19-27	15-21-29	17-22-31	20-25-35	22-28-39	24-29-41	26-32-44	28-34-47
12	cfm		791	1055	1318	1582	1846	2109	2637	3164	3691	4219	4746
	NC		—	—	—	—	—	—	20	26	32	37	41
	Throw Feet	0°	15-24-46	22-32-54	27-40-59	32-47-65	38-51-71	42-54-76	50-61-85	54-67-93	58-72-101	63-78-108	66-83-115
		15°	12-19-32	18-26-43	22-32-47	26-38-52	30-41-57	34-43-61	40-49-68	43-54-74	46-58-81	50-62-86	53-66-92
		45°	8-12-23	11-16-27	14-20-30	16-24-33	19-26-36	21-27-38	25-31-43	27-34-47	29-36-51	32-39-54	33-42-58
15	cfm		1269	1692	2115	2538	2961	3384	4230	5077	5923	6769	7615
	NC		—	—	—	—	—	—	21	28	33	38	43
	Throw Feet	0°	17-29-59	26-38-68	32-46-76	39-55-84	45-65-90	52-70-98	63-78-109	70-86-120	75-94-129	81-99-137	85-106-145
		15°	14-23-47	21-30-54	26-37-61	31-44-67	36-52-72	47-56-78	50-62-87	56-69-96	60-75-103	65-79-110	68-85-116
		45°	9-15-30	13-19-34	16-23-38	20-28-42	23-33-45	26-35-49	32-39-55	35-43-60	38-47-65	41-50-69	43-53-73

MIG4 — 4 Module

8	cfm		438	584	730	876	1022	1168	1460	1752	2044	2336	2628
	NC		—	—	—	—	—	—	18	25	31	36	40
	Throw Feet	0°	11-18-35	16-24-40	20-31-45	24-36-49	28-38-53	32-41-56	37-45-63	40-50-69	43-54-75	46-57-80	49-61-85
		15°	9-14-28	13-19-32	16-25-36	19-29-39	22-30-42	16-33-45	30-36-50	32-40-55	34-43-60	37-46-64	39-49-68
		45°	6-9-18	8-12-20	10-16-23	12-18-25	14-19-26	16-21-28	19-23-32	20-25-35	22-27-38	23-29-40	25-31-43
10	cfm		713	951	1188	1426	1664	1901	2377	2852	3327	3803	4278
	NC		—	—	—	—	—	—	19	26	32	37	41
	Throw Feet	0°	14-23-45	20-30-52	25-37-57	29-44-63	32-50-68	40-52-74	48-59-82	52-64-89	56-70-98	60-75-104	64-80-110
		15°	11-18-36	16-24-42	20-30-46	23-35-50	26-40-54	32-42-59	38-47-66	42-51-71	45-56-78	48-60-83	51-64-88
		45°	7-12-23	10-15-26	13-19-29	15-22-32	16-25-34	20-26-37	24-30-41	26-32-45	28-35-49	30-38-52	32-40-55
12	cfm		1055	1406	1758	2109	2461	2813	3516	4219	4922	5625	6328
	NC		—	—	—	—	—	—	20	27	33	38	42
	Throw Feet	0°	17-27-54	24-35-63	29-43-70	35-52-77	40-60-83	47-63-89	58-72-99	63-79-109	69-86-118	74-91-126	79-97-134
		15°	14-22-43	19-28-50	23-34-56	28-42-62	32-48-66	38-50-71	46-58-79	50-63-87	55-69-94	59-73-101	63-78-107
		45°	9-14-27	12-18-32	15-22-35	18-26-39	20-30-42	24-32-45	29-36-50	32-40-55	35-43-59	37-46-63	40-49-67
15	cfm		1692	2256	2820	3384	3948	4513	5641	6769	7897	9025	10153
	NC		—	—	—	—	—	—	22	28	34	39	43
	Throw Feet	0°	20-33-67	29-43-78	37-54-87	43-66-96	51-75-104	58-80-112	73-89-124	80-98-136	86-107-147	92-115-157	98-121-166
		15°	11-26-54	23-34-62	30-43-70	34-53-77	41-60-83	46-64-90	58-71-99	64-78-109	69-86-118	74-92-126	78-97-133
		45°	10-17-34	15-22-39	19-27-44	22-33-48	26-38-52	29-40-56	37-45-62	40-49-68	43-54-74	46-58-79	49-61-83

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The NC values are based on a room absorption of 10dB, re 10^{-12} watts with a single register set at 0° deflection.
7. Blanks (—) indicate an NC level below 15.
8. For deflection settings of 15° and 45°, increase the listed sound by 1 and 12 respectively.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

High Capacity Drum Louvers
HCD Series
Industrial

Product Information

Models

Standard
Grille **HCD1**

Optional
Grilles **HCD2 / AHCD1 / AHCD2**

Application

- Long air pattern projection with a high degree of directional control.
- Adjustable vanes for spread control, mounted in rotatable drum to control vertical deflection.
- Ideal solution for air movement in shopping malls, industrial plants, arenas, stadiums or any large enclosed space.
- HCD can supply air to spaces that cannot be served by ductwork and conventional outlets due to structural or architectural restrictions.

Features

- Adjustable vanes within a rotatable drum.
- Drum is adjustable through 60 degrees, with positive detent mechanism to fix drum angle setting.
- Optional Spiral Duct Frame allows for easy mounting on spiral ducts.
- HCD2/AHCD2 optional center divider and spread control members provide added pattern flexibility.
- Optional opposed blade damper available (VCS3 or VCS5). See damper application guideline on page D117 for more details.
- Mounting frame c/w countersunk holes.

Construction

- HCD1/HCD2 curved outer drum and vanes are extruded aluminum, other components are steel.
- AHCD1/AHCD2 drum vanes and frame are aluminum construction.

Mounting / Finish Options

Border Style
Surface Mount 1¼ in. [3] Flat **F**
Spiral Duct Frame Aluminum **SDFA**
Spiral Duct Frame Galvanized Steel **SDFG**

Fastening
Countersunk screwholes c/w oval-head screws **A**

Accessories

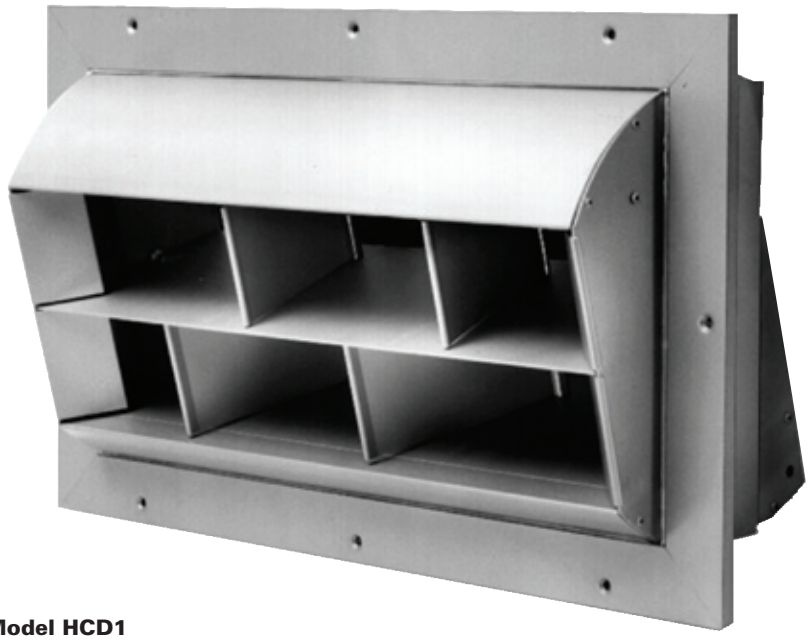
Pole operator bracket (see **POB** Fig. 3 on the next page) for units 48 in. [1219] wide or less.

Finish

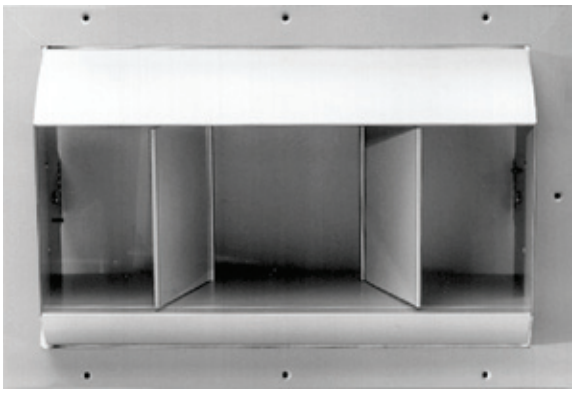
White Powder Coat **B12**
Aluminum Powder Coat **B15**
Mill Finish (AHCD1, AHCD2 only) **MILL**

For optional and special finishes see color matrix.

Model HCD2



Model HCD1



HCD / AHCD Available Sizes

Nom. Size Width	Nominal Length (Dimensional L)												
	9 in. [229]	12 in. [305]	15 in. [381]	18 in. [457]	24 in. [610]	30 in. [762]	36 in. [914]	42 in. [1067]	48 in. [1219]	54 in. [1372]	60 in. [1524]	66 in. [1676]	72 in. [1829]
6	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	N/A	N/A
10	N/A	N/A	N/A	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
12	N/A	N/A	N/A	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
15	N/A	N/A	N/A	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number (core style, damper).
3] Select Pole Operator Bracket option if desired.
4] Select Finish.
Example: 24 x 12 / HCD1 / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

High Capacity Drum Louver Diffuser
HCD Series
Industrial

Product Details

Fig. 1 Drum can be rotated 30° either side of center line

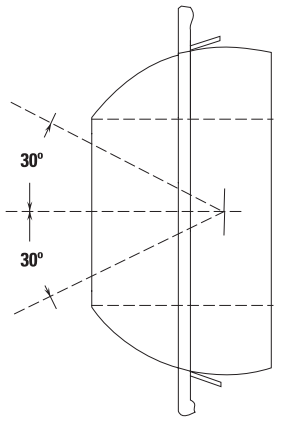


Fig. 2 Detent mechanism for positioning allows for positive setting of the drum.

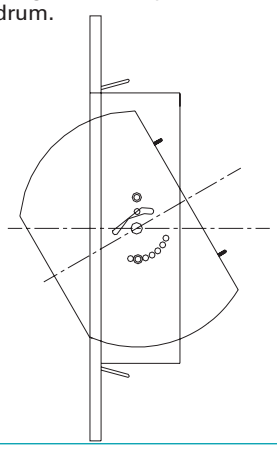
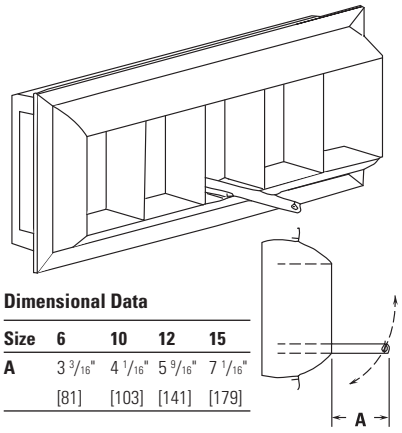


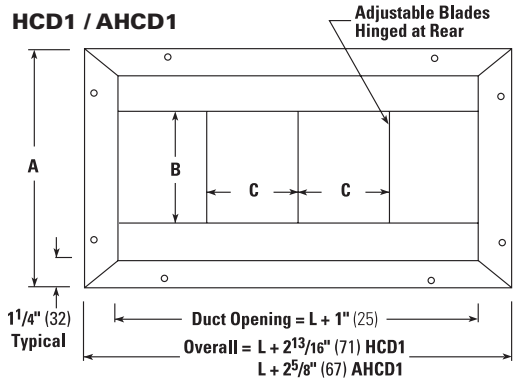
Fig. 3 **POB** Pole Operator Bracket

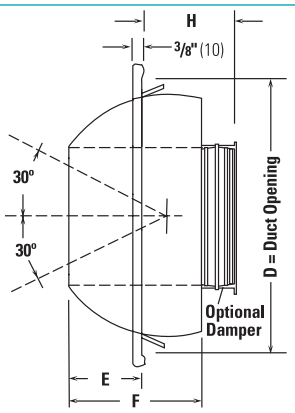


Dimensional Data

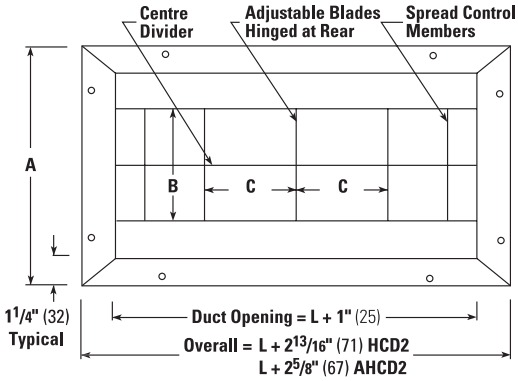
Size	6	10	12	15
A	3 3/16" [81]	4 1/16" [103]	5 9/16" [141]	7 1/16" [179]

HCD1 / AHCD1





HCD2 / AHCD2



SDFA
SDFG

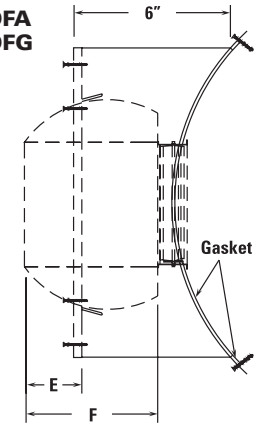


Table 1: HCD1 / HCD2 Dimensional Data - **Imperial (in.) / Metric [mm]**

Size	D (duct)	A	B	C	E	F	H (VCS3)	H (VCS5)	Optional Damper Nom. Width (VCS3)	Optional Damper Nom. Width (VCS5)
6	6 5/8 [168]	8 3/8 [213]	3 3/8 [86]	3 [76]	1 11/16 [43]	3 7/8 [98]	4 7/16 [113]	5 11/16 [144]	4 1/8 [105]	4 [102]
10	10 3/8 [264]	12 1/8 [308]	5 7/8 [149]	6 [152]	2 7/16 [62]	6 [152]	5 13/16 [148]	7 1/16 [179]	6 23/32 [171]	7 [178]
12	12 1/4 [311]	14 [356]	6 7/8 [175]	6 [152]	3 [76]	6 1/16 [154]	5 1/4 [133]	6 1/2 [165]	7 13/16 [199]	8 [203]
15	15 3/8 [391]	17 3/16 [437]	9 13/16 [249]	6 [152]	3 13/16 [97]	7 9/16 [192]	6 [152]	7 1/4 [184]	10 11/32 [263]	10 [254]

Table 2: AHCD1 / AHCD2 Dimensional Data - **Imperial (in.) / Metric [mm]**

Size	D (duct)	A	B	C	E	F	H (VCS3)	H (VCS5)	Optional Damper Nom. Width (VCS3)	Optional Damper Nom. Width (VCS5)
6	7 1/16 [179]	8 5/16 [211]	3 3/8 [86]	3 [76]	1 11/16 [43]	3 7/8 [98]	4 7/16 [113]	5 11/16 [144]	4 1/8 [105]	4 [102]
10	10 3/4 [273]	12 [305]	5 7/8 [149]	6 [152]	2 7/16 [62]	6 [152]	5 13/16 [148]	7 1/16 [179]	6 23/32 [171]	7 [178]
12	12 5/8 [321]	13 7/8 [352]	6 7/8 [175]	6 [152]	3 [76]	6 1/16 [154]	5 1/4 [133]	6 1/2 [165]	7 13/16 [199]	8 [203]
15	15 13/16 [402]	17 [432]	9 13/16 [249]	6 [152]	3 13/16 [97]	7 9/16 [192]	6 [152]	7 1/4 [184]	10 5/16 [262]	10 [254]

Table 3: Available Duct Diameters for optional Spiral Duct Frame

Nom. Size Width	Duct Diameter														
	10" [254]	12" [305]	14" [356]	18" [457]	20" [508]	24" [610]	26" [660]	28" [711]	30" [762]	32" [813]	34" [863]	36" [914]	40" [1061]	42" [1067]	48" [1219]
6	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	N/A	N/A
10	N/A	N/A	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	N/A	N/A
12	N/A	N/A	N/A	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
15	N/A	N/A	N/A	N/A	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Duct Velocity, fpm / Velocity Pressure, in.wg.	300 / 0.006	400 / 0.010	500 / 0.016	600 / 0.022	700 / 0.031	800 / 0.040	900 / 0.050	1000 / 0.062	1200 / 0.090
6/9	Total Pressure, in.wg.	0.046	0.077	0.123	0.169	0.238	0.308	0.384	0.477	0.692
	Flow Rate, cfm	113	150	188	225	263	300	338	375	450
	NC	--	--	18	24	29	34	38	42	48
	Throw 150, 100, 50	15-20-29	19-24-33	21-26-37	24-29-41	25-31-44	27-33-47	29-35-50	30-37-53	33-41-58
6/12	Total Pressure, in.wg.	0.042	0.070	0.112	0.154	0.216	0.279	0.349	0.433	0.628
	Flow Rate, cfm	150	200	250	300	350	400	450	500	600
	NC	--	--	19	25	30	35	39	43	49
	Throw 150, 100, 5	16-24-33	22-27-38	25-30-43	27-33-47	29-36-51	31-38-54	33-41-58	35-43-61	38-47-67
6/15	Total Pressure, in.wg.	0.039	0.065	0.104	0.142	0.201	0.259	0.324	0.401	0.582
	Flow Rate, cfm	188	250	313	375	438	500	563	625	750
	NC	--	--	19	26	31	36	40	44	50
	Throw 150, 100, 50	18-26-37	24-30-43	28-34-48	30-37-53	33-40-57	35-43-61	37-46-64	39-48-68	43-53-74
6/18	Total Pressure, in.wg.	0.037	0.061	0.097	0.134	0.189	0.243	0.304	0.377	0.548
	Flow Rate, cfm	225	300	375	450	525	600	675	750	900
	NC	--	--	20	26	32	36	40	44	51
	Throw 150, 100, 50	19-29-41	26-33-47	30-37-53	33-41-58	36-44-62	38-47-67	41-50-71	43-53-74	47-58-81
6/24	Total Pressure, in.wg.	0.033	0.055	0.088	0.121	0.171	0.221	0.276	0.342	0.497
	Flow Rate, cfm	300	400	500	600	700	800	900	1000	1200
	NC	--	--	21	27	32	37	41	45	51
	Throw 150, 100, 50	21-32-47	29-38-54	35-43-61	38-47-67	41-51-72	44-54-77	47-58-81	50-61-86	54-67-94
6/30	Total Pressure, in.wg.	0.031	0.051	0.082	0.113	0.159	0.205	0.256	0.318	0.461
	Flow Rate, cfm	375	500	625	750	875	1000	1125	1250	1500
	NC	--	--	21	28	33	38	42	46	52
	Throw 150, 100, 50	23-35-53	31-43-61	39-48-68	43-53-74	46-57-80	50-61-86	53-64-91	55-68-96	61-74-105
6/36	Total Pressure, in.wg.	0.029	0.048	0.077	0.106	0.149	0.193	0.241	0.299	0.433
	Flow Rate, cfm	450	600	750	900	1050	1200	1350	1500	1800
	NC	--	--	22	28	34	38	43	46	53
	Throw 150, 100, 50	25-38-58	34-47-67	42-53-74	47-58-81	51-62-88	54-67-94	58-71-100	61-74-105	67-81-115
6/42	Total Pressure, in.wg.	0.027	0.046	0.073	0.101	0.142	0.183	0.229	0.283	0.411
	Flow Rate, cfm	525	700	875	1050	1225	1400	1575	1750	2100
	NC	--	--	22	29	34	39	43	47	53
	Throw 150, 100, 50	27-40-62	36-51-72	45-57-80	51-62-88	55-67-95	59-72-102	62-76-108	66-80-114	72-88-124
6/48	Total Pressure, in.wg.	0.026	0.044	0.070	0.096	0.135	0.175	0.218	0.271	0.393
	Flow Rate, cfm	600	800	1000	1200	1400	1600	1800	2000	2400
	NC	--	--	23	29	35	39	43	47	54
	Throw 150, 100, 50	28-42-67	38-54-77	47-61-86	54-67-94	59-72-102	63-77-109	67-81-115	70-86-121	77-94-133
6/54	Total Pressure, in.wg.	0.025	0.042	0.067	0.092	0.130	0.168	0.210	0.260	0.378
	Flow Rate, cfm	675	900	1125	1350	1575	1800	2025	2250	2700
	NC	--	15	23	29	35	40	44	47	54
	Throw 150, 100, 50	29-44-71	39-58-81	49-64-91	58-71-100	62-76-108	67-81-115	71-86-122	74-91-129	81-100-141
6/60	Total Pressure, in.wg.	0.024	0.041	0.065	0.089	0.126	0.162	0.203	0.251	0.365
	Flow Rate, cfm	750	1000	1250	1500	1750	2000	2250	2500	3000
	NC	--	16	23	30	35	40	44	48	54
	Throw 150, 100, 50	31-46-74	41-61-86	51-68-96	61-74-105	66-80-114	70-86-121	74-91-129	78-96-136	86-105-149

Performance Notes:

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

Correction Factors

Model / Deflection	HCD1 0°	HCD1 15°	HCD1 30°	HCD2 0°	HCD2 15°	HCD2 30°
NC	—	+4	+9	—	+4	+9
Throw	—	x .85	x.73	—	x .85	x .73
Total Press.	—	x 1.5	x 1.9	x 1.3	x 1.7	x 2.2

Based on HCD1 at 0° deflection, correction factors for other conditions as listed in table opposite.

Example: 12 x 36 HCD2
Flow Rate = 1800 cfm
Deflection = 15°
NC = 30 + 4 = 34
Throw (50 fpm) = 115 x .85 = 98 ft
Total Pressure = .086 x 1.7 = 0.146 in. w.g.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Duct Velocity, fpm / Velocity Pressure, in.wg.	300 / 0.006	400 / 0.010	500 / 0.016	600 / 0.022	700 / 0.031	800 / 0.040	900 / 0.050	1000 / 0.062	1200 / 0.090
10/18	**Total Pressure, in.wg.**	0.031	0.051	0.082	0.113	0.159	0.205	0.256	0.318	0.461
	Flow Rate, cfm	375	500	625	750	875	1000	1125	1250	1500
	NC	--	--	21	28	33	38	42	46	52
	Throw 150, 100, 50	23-35-53	31-43-61	39-48-68	43-53-74	46-57-80	50-61-86	53-64-91	55-68-96	61-74-105
10/24	**Total Pressure, in.wg.**	0.028	0.046	0.074	0.102	0.144	0.186	0.232	0.288	0.418
	Flow Rate, cfm	500	667	833	1000	1167	1333	1500	1667	2000
	NC	--	--	22	29	34	39	43	47	53
	Throw 150, 100, 50	26-39-61	35-50-70	44-55-78	50-61-86	54-66-93	57-70-99	61-74-105	64-78-111	70-86-121
10/30	**Total Pressure, in.wg.**	0.026	0.043	0.069	0.095	0.134	0.172	0.216	0.267	0.388
	Flow Rate, cfm	625	833	1042	1250	1458	1667	1875	2083	2500
	NC	--	--	23	29	35	39	44	47	54
	Throw 150, 100, 50	29-43-68	38-55-78	48-62-88	55-68-96	60-73-104	64-78-111	68-83-118	72-88-124	78-96-136
10/36	**Total Pressure, in.wg.**	0.024	0.041	0.065	0.089	0.126	0.162	0.203	0.251	0.365
	Flow Rate, cfm	750	1000	1250	1500	1750	2000	2250	2500	3000
	NC	--	16	23	30	35	40	44	48	54
	Throw 150, 100, 50	31-46-74	41-61-86	51-68-96	61-74-105	66-80-114	70-86-121	74-91-129	78-96-136	86-105-149
10/42	**Total Pressure, in.wg.**	0.023	0.038	0.062	0.085	0.119	0.154	0.192	0.239	0.346
	Flow Rate, cfm	875	1167	1458	1750	2042	2333	2625	2917	3500
	NC	--	16	24	30	36	40	45	48	55
	Throw 150, 100, 50	33-49-80	43-65-93	54-73-104	65-80-114	71-87-123	76-93-131	80-98-139	85-104-147	93-114-161
10/48	**Total Pressure, in.wg.**	0.022	0.037	0.059	0.081	0.114	0.147	0.184	0.228	0.331
	Flow Rate, cfm	1000	1333	1667	2000	2333	2667	3000	3333	4000
	NC	--	16	24	31	36	41	45	49	55
	Throw 150, 100, 50	34-52-86	46-69-99	57-78-111	69-86-121	76-93-131	81-99-140	86-105-149	91-111-157	99-121-172
10/54	**Total Pressure, in.wg.**	0.021	0.035	0.057	0.078	0.110	0.141	0.177	0.219	0.318
	Flow Rate, cfm	1125	1500	1875	2250	2625	3000	3375	3750	4500
	NC	--	17	25	31	36	41	45	49	55
	Throw 150, 100, 50	36-54-91	48-72-105	60-83-118	72-91-129	80-98-139	86-105-149	91-112-158	96-118-166	105-129-182
10/60	**Total Pressure, in.wg.**	0.020	0.034	0.055	0.075	0.106	0.136	0.171	0.211	0.307
	Flow Rate, cfm	1250	1667	2083	2500	2917	3333	3750	4167	5000
	NC	--	17	25	31	37	41	46	49	56
	Throw 150, 100, 50	37-56-96	50-75-111	62-88-124	75-96-136	85-104-147	91-111-157	96-118-166	101-124-175	111-136-192
10/66	**Total Pressure, in.wg.**	0.020	0.033	0.053	0.073	0.102	0.132	0.165	0.205	0.297
	Flow Rate, cfm	1375	1833	2292	2750	3208	3667	4125	4583	5500
	NC	--	17	25	32	37	42	46	50	56
	Throw 150, 100, 50	39-58-101	52-78-116	65-92-130	78-101-142	89-109-154	95-116-164	101-123-174	106-130-184	116-142-201
10/72	**Total Pressure, in.wg.**	0.019	0.032	0.051	0.071	0.099	0.128	0.160	0.199	0.289
	Flow Rate, cfm	1500	2000	2500	3000	3500	4000	4500	5000	6000
	NC	--	18	26	32	37	42	46	50	56
	Throw 150, 100, 50	40-60-105	54-81-121	67-96-136	81-105-149	93-114-161	99-121-172	105-129-182	111-136-192	121-149-210

Performance Notes:

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

Correction Factors

Model Deflection	HCD1 0°	HCD1 15°	HCD1 30°	HCD2 0°	HCD2 15°	HCD2 30°
NC	—	+4	+9	—	+4	+9
Throw	—	x .85	x.73	—	x .85	x .73
Total Press.	—	x 1.5	x 1.9	x 1.3	x 1.7	x 2.2

Based on HCD1 at 0° deflection, correction factors for other conditions as listed in table opposite.

Example: 12 x 36 HCD2
Flow Rate = 1800 cfm
Deflection = 15°
NC = 30 + 4 = 34
Throw (50 fpm) = 115 x .85 = 98 ft
Total Pressure = .086 x 1.7 = 0.146 in. w.g.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Duct Velocity, fpm / Velocity Pressure, in.wg.	300 / 0.006	400 / 0.010	500 / 0.016	600 / 0.022	700 / 0.031	800 / 0.040	900 / 0.050	1000 / 0.062	1200 / 0.090
12/18	**Total Pressure, in.wg.**	0.029	0.048	0.077	0.106	0.149	0.193	0.241	0.299	0.433
	Flow Rate, cfm	450	600	750	900	1050	1200	1350	1500	1800
	NC	--	--	22	28	34	38	43	46	53
	Throw 150, 100, 50	25-38-58	34-47-67	42-53-74	47-58-81	51-62-88	54-67-94	58-71-100	61-74-105	67-81-115
12/24	**Total Pressure, in.wg.**	0.026	0.044	0.070	0.096	0.135	0.175	0.218	0.271	0.393
	Flow Rate, cfm	600	800	1000	1200	1400	1600	1800	2000	2400
	NC	--	--	23	29	35	39	43	47	54
	Throw 150, 100, 50	28-42-67	38-54-77	47-61-86	54-67-94	59-72-102	63-77-109	67-81-115	70-86-121	77-94-133
12/30	**Total Pressure, in.wg.**	0.024	0.041	0.065	0.089	0.126	0.162	0.203	0.251	0.365
	Flow Rate, cfm	750	1000	1250	1500	1750	2000	2250	2500	3000
	NC	--	16	23	30	35	40	44	48	54
	Throw 150, 100, 50	31-46-74	41-61-86	51-68-96	61-74-105	66-80-114	70-86-121	74-91-129	78-96-136	86-105-149
12/36	**Total Pressure, in.wg.**	0.023	0.038	0.061	0.084	0.118	0.152	0.191	0.236	0.343
	Flow Rate, cfm	900	1200	1500	1800	2100	2400	2700	3000	3600
	NC	--	16	24	30	36	40	45	48	55
	Throw 150, 100, 50	33-49-81	44-66-94	55-74-105	66-81-115	72-88-124	77-94-133	81-100-141	86-105-149	94-115-163
12/42	**Total Pressure, in.wg.**	0.022	0.036	0.058	0.080	0.112	0.145	0.181	0.224	0.326
	Flow Rate, cfm	1050	1400	1750	2100	2450	2800	3150	3500	4200
	NC	--	17	24	31	36	41	45	49	55
	Throw 150, 100, 50	35-53-88	47-70-102	58-80-114	70-88-124	78-95-134	83-102-144	88-108-152	93-114-161	102-124-176
12/48	**Total Pressure, in.wg.**	0.021	0.035	0.055	0.076	0.107	0.138	0.173	0.214	0.311
	Flow Rate, cfm	1200	1600	2000	2400	2800	3200	3600	4000	4800
	NC	--	17	25	31	37	41	46	49	56
	Throw 150, 100, 50	37-55-94	49-74-109	62-86-121	74-94-133	83-102-144	89-109-154	94-115-163	99-121-172	109-133-188
12/54	**Total Pressure, in.wg.**	0.020	0.033	0.053	0.073	0.103	0.133	0.166	0.206	0.299
	Flow Rate, cfm	1350	1800	2250	2700	3150	3600	4050	4500	5400
	NC	--	17	25	32	37	42	46	50	56
	Throw 150, 100, 50	39-58-100	52-77-115	64-91-129	77-100-141	88-108-152	94-115-163	100-122-173	105-129-182	115-141-200
12/60	**Total Pressure, in.wg.**	0.019	0.032	0.051	0.071	0.099	0.128	0.160	0.199	0.289
	Flow Rate, cfm	1500	2000	2500	3000	3500	4000	4500	5000	6000
	NC	--	18	26	32	37	42	46	50	56
	Throw 150, 100, 50	40-60-105	54-81-121	67-96-136	81-105-149	93-114-161	99-121-172	105-129-182	111-136-192	121-149-210
12/66	**Total Pressure, in.wg.**	0.019	0.031	0.050	0.068	0.096	0.124	0.155	0.193	0.280
	Flow Rate, cfm	1650	2200	2750	3300	3850	4400	4950	5500	6600
	NC	--	18	26	32	38	42	46	50	57
	Throw 150, 100, 50	42-63-110	56-84-127	70-101-142	84-110-156	97-119-168	104-127-180	110-135-191	116-142-201	127-156-221
12/72	**Total Pressure, in.wg.**	0.018	0.030	0.048	0.066	0.093	0.121	0.151	0.187	0.271
	Flow Rate, cfm	1800	2400	3000	3600	4200	4800	5400	6000	7200
	NC	--	18	26	32	38	43	47	50	57
	Throw 150, 100, 50	43-65-115	58-87-133	72-105-149	87-115-163	101-124-176	109-133-188	115-141-200	121-149-210	133-163-230

Performance Notes:

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

Correction Factors

Model / Deflection	HCD1 0°	HCD1 15°	HCD1 30°	HCD2 0°	HCD2 15°	HCD2 30°
NC	—	+4	+9	—	+4	+9
Throw	—	x .85	x.73	—	x .85	x .73
Total Press.	—	x 1.5	x 1.9	x 1.3	x 1.7	x 2.2

Based on HCD1 at 0° deflection, correction factors for other conditions as listed in table opposite.

Example: 12 x 36 HCD2
Flow Rate = 1800 cfm
Deflection = 15°

NC = 30 + 4 = 34

Throw (50 fpm) = 115 x .85 = 98 ft

Total Pressure = .086 x 1.7 = 0.146 in. w.g.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Duct Velocity, fpm / Velocity Pressure, in.wg.	300 / 0.006	400 / 0.010	500 / 0.016	600 / 0.022	700 / 0.031	800 / 0.040	900 / 0.050	1000 / 0.062	1200 / 0.090
15/18	**Total Pressure, in.wg.**	0.027	0.045	0.071	0.098	0.138	0.179	0.223	0.277	0.402
	Flow Rate, cfm	563	750	938	1125	1313	1500	1688	1875	2250
	NC	--	--	23	29	34	39	43	47	53
	Throw 150, 100, 50	27-41-64	37-53-74	46-59-83	53-64-91	57-70-98	61-74-105	64-79-112	68-83-118	74-91-129
15/24	**Total Pressure, in.wg.**	0.024	0.041	0.065	0.089	0.126	0.162	0.203	0.251	0.365
	Flow Rate, cfm	750	1000	1250	1500	1750	2000	2250	2500	3000
	NC	--	16	23	30	35	40	44	48	54
	Throw 150, 100, 50	31-46-74	41-61-86	51-68-96	61-74-105	66-80-114	70-86-121	74-91-129	78-96-136	86-105-149
15/30	**Total Pressure, in.wg.**	0.023	0.038	0.060	0.083	0.117	0.150	0.188	0.233	0.338
	Flow Rate, cfm	938	1250	1563	1875	2188	2500	2813	3125	3750
	NC	--	16	24	30	36	41	45	48	55
	Throw 150, 100, 50	34-50-83	45-67-96	56-76-107	67-83-118	73-90-127	78-96-136	83-102-144	88-107-152	96-118-166
15/36	**Total Pressure, in.wg.**	0.021	0.035	0.057	0.078	0.110	0.141	0.177	0.219	0.318
	Flow Rate, cfm	1125	1500	1875	2250	2625	3000	3375	3750	4500
	NC	--	17	25	31	36	41	45	49	55
	Throw 150, 100, 50	36-54-91	48-72-105	60-83-118	72-91-129	80-98-139	86-105-149	91-112-158	96-118-166	105-129-182
15/42	**Total Pressure, in.wg.**	0.020	0.034	0.054	0.074	0.104	0.134	0.168	0.208	0.302
	Flow Rate, cfm	1313	1750	2188	2625	3063	3500	3938	4375	5250
	NC	--	17	25	32	37	42	46	49	56
	Throw 150, 100, 50	38-57-98	51-76-114	64-90-127	76-98-139	87-106-150	93-114-161	98-120-170	104-127-180	114-139-197
15/48	**Total Pressure, in.wg.**	0.019	0.032	0.051	0.071	0.099	0.128	0.160	0.199	0.289
	Flow Rate, cfm	1500	2000	2500	3000	3500	4000	4500	5000	6000
	NC	--	18	26	32	37	42	46	50	56
	Throw 150, 100, 50	40-60-105	54-81-121	67-96-136	81-105-149	93-114-161	99-121-172	105-129-182	111-136-192	121-149-210
15/54	**Total Pressure, in.wg.**	0.018	0.031	0.049	0.068	0.096	0.123	0.154	0.191	0.277
	Flow Rate, cfm	1688	2250	2813	3375	3938	4500	5063	5625	6750
	NC	--	18	26	32	38	42	47	50	57
	Throw 150, 100, 50	42-63-112	56-84-129	70-102-144	84-112-158	98-120-170	105-129-182	112-137-193	118-144-204	129-158-223
15/60	**Total Pressure, in.wg.**	0.018	0.030	0.048	0.065	0.092	0.119	0.149	0.184	0.268
	Flow Rate, cfm	1875	2500	3125	3750	4375	5000	5625	6250	7500
	NC	--	18	26	33	38	43	47	51	57
	Throw 150, 100, 50	44-66-118	59-88-136	73-107-152	88-118-166	103-127-180	111-136-192	118-144-204	124-152-215	136-166-235
15/66	**Total Pressure, in.wg.**	0.017	0.029	0.046	0.063	0.089	0.115	0.144	0.179	0.259
	Flow Rate, cfm	2063	2750	3438	4125	4813	5500	6188	6875	8250
	NC	--	19	26	33	38	43	47	51	57
	Throw 150, 100, 50	46-68-123	61-91-142	76-113-159	91-123-174	106-133-188	116-142-201	123-151-214	130-159-225	142-174-247
15/72	**Total Pressure, in.wg.**	0.017	0.028	0.045	0.062	0.087	0.112	0.140	0.173	0.252
	Flow Rate, cfm	2250	3000	3750	4500	5250	6000	6750	7500	9000
	NC	--	19	27	33	39	43	47	51	58
	Throw 150, 100, 50	47-71-129	63-94-149	79-118-166	94-129-182	110-139-197	121-149-210	129-158-223	136-166-235	149-182-258

Performance Notes:

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

Correction Factors

Model / Deflection	HCD1 0°	HCD1 15°	HCD1 30°	HCD2 0°	HCD2 15°	HCD2 30°
NC	—	+4	+9	—	+4	+9
Throw	—	x .85	x.73	—	x .85	x .73
Total Press.	—	x 1.5	x 1.9	x 1.3	x 1.7	x 2.2

Based on HCD1 at 0° deflection, correction factors for other conditions as listed in table opposite.

Example: 12 x 36 HCD2
Flow Rate = 1800 cfm
Deflection = 15°
NC = 30 + 4 = 34
Throw (50 fpm) = 115 x .85 = 98 ft
Total Pressure = .086 x 1.7 = 0.146 in. w.g.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

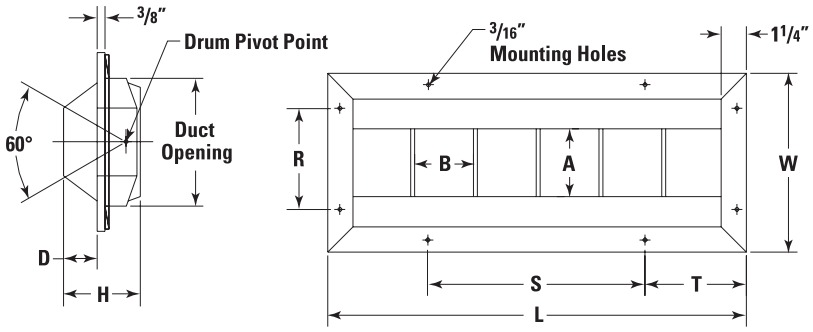
DLSS Series

Product Information

Price Stainless Steel Drum Louvers (DLSS Series) are an ideal solution for air movement in industrial plants, arenas and stadiums or any other demanding environment where the durability of stainless steel is required. The Drum Louvers can supply air to spaces that cannot be served by ductwork and conventional outlets due to structural and architectural restrictions. The DLSS series of diffusers are designed to provide long air pattern projection with a high degree of directional control. The drum rotates through 60 degrees while the louvers pivot about the rear of the blade to provide additional directional control of the air pattern.

Features

- Stainless steel construction.
- Drum is adjustable through 60 degrees.
- Blades are individually adjustable.
- Long throws
- Directional control
- Large selection of available sizes.



Model	L	W	H	Required Duct Opening	A	B	D	R	S	T	Blade Qty.	Mount Holes
6x9	$11^{11}/_{16}$			$9^{11}/_{16}$ x $6^{7}/_{16}$						$2^{27}/_{32}$	2	8
6x12	$14^{11}/_{16}$			$12^{11}/_{16}$ x $6^{7}/_{16}$							3	8
6x18	$20^{11}/_{16}$			$18^{11}/_{16}$ x $6^{7}/_{16}$							5	8
6x24	$26^{11}/_{16}$	$8^{3}/_{16}$	$3^{5}/_{8}$	$24^{11}/_{16}$ x $6^{7}/_{16}$	$3^{3}/_{8}$	3	$1^{21}/_{32}$	0	6	$4^{11}/_{32}$	7	10
6x30	$32^{11}/_{16}$			$30^{11}/_{16}$ x $6^{7}/_{16}$							9	12
6x36	$38^{11}/_{16}$			$36^{11}/_{16}$ x $6^{7}/_{16}$							11	14
6x48	$50^{11}/_{16}$			$48^{11}/_{16}$ x $6^{7}/_{16}$							15	18
6x60	$62^{11}/_{16}$			$60^{11}/_{16}$ x $6^{7}/_{16}$							19	22
10x20	$22^{11}/_{16}$			$20^{11}/_{16}$ x $10^{3}/_{16}$							3	10
10x25	$27^{11}/_{16}$			$25^{11}/_{16}$ x $10^{3}/_{16}$							4	12
10x30	$32^{11}/_{16}$			$30^{11}/_{16}$ x $10^{3}/_{16}$							5	14
10x35	$37^{11}/_{16}$	$11^{15}/_{16}$	6	$35^{11}/_{16}$ x $10^{3}/_{16}$	$5^{7}/_{8}$	5	$2^{7}/_{16}$	6	5	$6^{11}/_{32}$	6	16
10x40	$42^{11}/_{16}$			$40^{11}/_{16}$ x $10^{3}/_{16}$							7	18
10x50	$52^{11}/_{16}$			$50^{11}/_{16}$ x $10^{3}/_{16}$							9	22
10x60	$62^{11}/_{16}$			$60^{11}/_{16}$ x $10^{3}/_{16}$							11	26
10x70	$72^{11}/_{16}$			$70^{11}/_{16}$ x $10^{3}/_{16}$							13	30
12x20	$22^{11}/_{16}$			$20^{11}/_{16}$ x $12^{3}/_{16}$							3	9
12x30	$32^{11}/_{16}$			$30^{11}/_{16}$ x $12^{3}/_{16}$							5	14
12x40	$42^{11}/_{16}$	$13^{15}/_{16}$	6	$40^{11}/_{16}$ x $12^{3}/_{16}$	$6^{7}/_{8}$	5	3	6	5	$6^{11}/_{32}$	7	18
12x50	$52^{11}/_{16}$			$50^{11}/_{16}$ x $12^{3}/_{16}$							9	22
12x60	$62^{11}/_{16}$			$60^{11}/_{16}$ x $12^{3}/_{16}$							11	26
12x70	$72^{11}/_{16}$			$70^{11}/_{16}$ x $12^{3}/_{16}$							13	30
15x15	$17^{11}/_{16}$			$15^{11}/_{16}$ x $15^{3}/_{16}$							2	8
15x20	$22^{11}/_{16}$			$20^{11}/_{16}$ x $15^{3}/_{16}$							3	10
15x25	$27^{11}/_{16}$			$25^{11}/_{16}$ x $15^{3}/_{16}$							4	12
15x30	$32^{11}/_{16}$			$30^{11}/_{16}$ x $15^{3}/_{16}$							5	14
15x40	$42^{11}/_{16}$	17	$8^{1}/_{8}$	$40^{11}/_{16}$ x $15^{3}/_{16}$	$9^{13}/_{16}$	5	$3^{13}/_{16}$	9	5	$6^{11}/_{32}$	7	18
15x50	$52^{11}/_{16}$			$50^{11}/_{16}$ x $15^{3}/_{16}$							9	22
15x60	$62^{11}/_{16}$			$60^{11}/_{16}$ x $15^{3}/_{16}$							11	26
15x70	$72^{11}/_{16}$			$70^{11}/_{16}$ x $15^{3}/_{16}$							13	30

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Discharge Velocity	750	1000	1250	1500	1750	2000
06/12	cfm	161	215	269	323	376	430
	Total Pressure	0.04	0.07	0.12	0.17	0.23	0.30
	NC	<15	<15	15	22	27	32
	Projection	5-10-23	8-16-31	10-19-35	11-23-38	13-27-41	16-31-44
06/24	cfm	425	566	708	849	991	1132
	Total Pressure	0.08	0.13	0.21	0.30	0.41	0.54
	NC	<15	21	29	35	41	45
	Projection	15-31-43	20-35-50	26-40-56	31-43-61	33-47-66	35-50-71
06/36	cfm	636	848	1060	1272	1484	1696
	Total Pressure	0.08	0.14	0.21	0.30	0.41	0.54
	NC	<15	23	31	37	43	47
	Projection	23-38-53	31-43-61	34-48-69	38-53-75	41-57-81	43-61-87
06/60	cfm	1058	1410	1763	2115	2468	2820
	Total Pressure	0.08	0.14	0.21	0.31	0.42	0.55
	NC	15	25	33	39	45	50
	Projection	34-48-68	40-56-79	44-62-88	48-68-97	52-74-105	56-79-112
10/20	cfm	617	823	1029	1235	1440	1646
	Total Pressure	0.06	0.11	0.17	0.24	0.33	0.43
	NC	<15	25	33	39	45	49
	Projection	22-37-52	30-43-60	34-48-68	37-52-74	40-56-80	43-60-85
10/30	cfm	924	1231	1539	1847	2154	2462
	Total Pressure	0.06	0.11	0.17	0.25	0.34	0.44
	NC	16	27	35	41	46	51
	Projection	32-45-64	37-52-74	41-58-83	45-64-90	49-69-98	52-74-104
10/40	cfm	1229	1639	2049	2459	2868	3278
	Total Pressure	0.07	0.12	0.18	0.26	0.35	0.45
	NC	18	28	36	42	48	53
	Projection	37-52-74	43-60-85	48-67-95	52-74-104	56-80-113	60-85-120
10/60	cfm	1841	2455	3069	3683	4296	4910
	Total Pressure	0.07	0.12	0.18	0.26	0.35	0.45
	NC	20	30	38	44	50	54
	Projection	45-64-90	52-74-104	58-82-117	64-90-128	69-98-138	74-104-147
10/70	cfm	2147	2863	3579	4294	5010	5726
	Total Pressure	0.07	0.12	0.18	0.26	0.35	0.45
	NC	20	31	38	45	50	55
	Projection	49-69-98	56-80-113	63-89-126	69-98-138	74-105-149	80-113-159

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow cfm: Based on standard air density and isothermal conditions.
3. Noise Criteria: Noise criteria [NC] curve which is not exceeded with a Room Attenuation of 10db and based on Sound Power Level Re: 10^{-12} watts.
4. Projection: Projection distance [THROW] in feet from the Louver discharge at which the maximum velocity has been reduced to specified terminal velocity [Vt].
5. Discharge Velocity: Discharge Velocity in feet per minute [fpm].
6. Terminal Velocity: Maximum velocity [Vt] in feet per minute at the specified distance from the outlet face [THROW] 200 fpm, 100 fpm, and 50 fpm respectively.

Performance values for various deflection angles

Deflection Angle	0°	10°	30°
Static Pressure [times]	1.0	1.2	1.8
Throw-Projection [times]	1.0	0.8	0.7
Noise Criteria – NC [add]	+0	+3	+7

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Discharge Velocity	750	1000	1250	1500	1750	2000
12/20	cfm	723	963	1204	1445	1685	1926
	Total Pressure	0.05	0.10	0.15	0.22	0.30	0.39
	NC	<15	25	33	39	45	49
	Projection	26-40-57	33-46-65	37-52-73	40-57-80	43-61-86	46-65-92
12/40	cfm	1439	1918	2398	2877	3357	3836
	Total Pressure	0.06	0.10	0.15	0.22	0.30	0.40
	NC	18	28	36	42	48	53
	Projection	40-56-80	46-65-92	52-73-103	56-80-113	61-86-122	65-92-130
12/60	cfm	2155	2873	3591	4309	5028	5746
	Total Pressure	0.06	0.10	0.16	0.22	0.31	0.40
	NC	20	30	38	44	50	55
	Projection	49-69-98	56-80-113	63-89-126	69-98-138	75-106-149	80-113-160
12/70	cfm	2513	3351	4189	5027	5864	6 702
	Total Pressure	0.06	0.10	0.16	0.23	0.31	0.40
	NC	20	31	39	45	51	55
	Projection	53-75-105	61-86-122	68-96-136	75-106-149	81-114-161	86-122-172
15/20	cfm	1032	1375	1719	2063	2406	2750
	Total Pressure	0.06	0.11	0.17	0.24	0.33	0.43
	NC	20	30	38	44	50	55
	Projection	34-48-68	39-55-78	44-62-87	48-68-96	52-73-103	55-78-110
15/40	cfm	2053	2738	3423	4107	4791	5476
	Total Pressure	0.06	0.11	0.17	0.25	0.34	0.44
	NC	23	33	41	48	53	58
	Projection	48-67-95	55-78-110	62-87-123	67-95-135	73-103-146	78-110-156
15/50	cfm	2565	3419	4274	5129	5983	6838
	Total Pressure	0.06	0.11	0.17	0.25	0.34	0.44
	NC	24	34	42	49	54	59
	Projection	53-75-107	62-87-123	69-97-138	75-107-151	81-115-163	87-123-174
15/60	cfm	3076	4101	5126	6151	7177	8202
	Total Pressure	0.06	0.11	0.17	0.25	0.34	0.44
	NC	25	35	43	50	55	60
	Projection	58-83-117	67-95-135	75-107-151	83-117-165	89-126-178	95-135-191
15/70	cfm	3587	4783	5979	7175	8370	9566
	Total Pressure	0.06	0.11	0.17	0.25	0.34	0.44
	NC	26	36	44	50	56	60
	Projection	63-89-126	73-103-146	81-115-163	89-126-178	96-136-193	105-146-206

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow cfm: Based on standard air density and isothermal conditions.
3. Noise Criteria: Noise criteria [NC] curve which is not exceeded with a Room Attenuation of 10db and based on Sound Power Level Re: 10^{-12} watts.
4. Projection: Projection distance [THROW] in feet from the Louver discharge at which the maximum velocity has been reduced to specified terminal velocity [Vt].
5. Discharge Velocity: Discharge Velocity in feet per minute [fpm].
6. Terminal Velocity: Maximum velocity [Vt] in feet per minute at the specified distance from the outlet face [THROW] 200 fpm, 100 fpm, and 50 fpm respectively.

Performance values for various deflection angles

Deflection Angle	0°	10°	30°
Static Pressure [times]	1.0	1.2	1.8
Throw-Projection [times]	1.0	0.8	0.7
Noise Criteria – NC [add]	+0	+3	+7

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Duct Mounted Accessories

Product Information — VCS3

Grille Mounted

Opposed Blade Damper **VCS3**

Application

- Designed to install on most of our grilles.
- Can be specified as an integral part of the air outlet by adding a D suffix to the model number of the desired grille.
- Can be specified as separate unit for field installation by using the designation VCS3.
- Volume control louvers move simultaneously in opposite directions, closing to provide superior metering and control with a minimum disturbance of the air pattern.

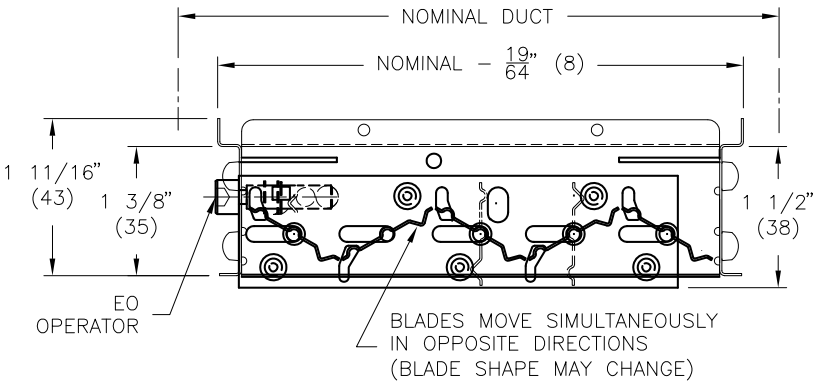
Features

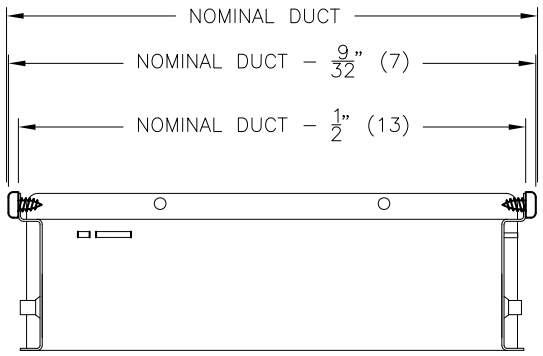
- Available in three materials:
  Coated Steel - **D** or **VCS3**
  Aluminum - **DAL** or **VCS3AL**
  Stainless Steel - **DSS** or **VCS3SS**
- MILL finish standard on **D/VCS3** and **DAL / VCS3AL**.
- Available in two operators:
  Standard Type A - Slot
  Optional Type E - Lever (when required)

Available Sizes

Model	Minimum	Maximum
VCS3	4 x 2½ [102 x 64]	24 x 24 [610 x 610]
VCS3AL	4 x 2½ [102 x 64]	24 x 18 [610 x 457]
VCS3SS	4 x 2½ [102 x 64]	24 x 18 [610 x 457]

Oversized units supplied in multiple sections.





GRILLES AND REGISTERS

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information — VCS3B

Duct Mounted

Opposed Blade Damper **VCS3B**

Application

- Modified version of the VCS3 damper, designed to install independent of the air outlet in the duct behind the grille.
- Volume control louvers move simultaneously in opposite directions, closing to provide superior metering and control with a minimum disturbance of the air pattern.

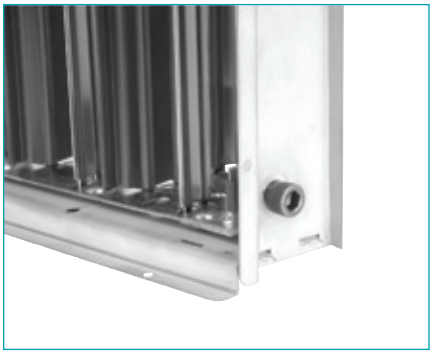
Features

- Available in three materials:
  Coated Steel - **VCS3B**
  Aluminum - **VCS3BAL**
  Stainless Steel - **VCS3BSS**
- MILL finish standard on **VCS3B** and **VCS3BAL**.
- Available in two operators:
  Standard Type A - Slot
  Optional Type EO - External operator used when face of damper is inaccessible - Hex operator penetrates duct wall to provide control.

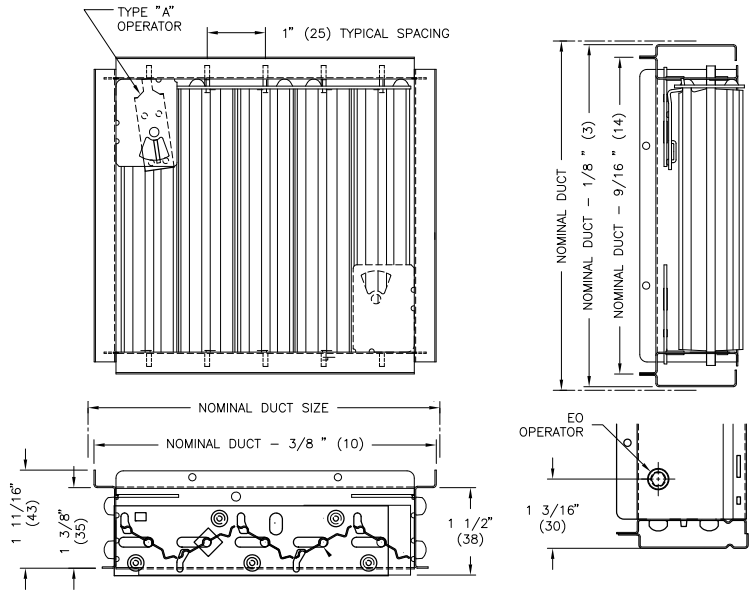
Available Sizes

Model	Minimum	Maximum
VCS3B	4 in. x 2½ in. [102 x 64]	24 in. x 24 in. [610 x 610]
VCS3BAL	4 in. x 2½ in. [102 x 64]	24 in. x 18 in. [610 x 457]
VCS3BSS	4 in. x 2½ in. [102 x 64]	24 in. x 18 in. [610 x 457]

Oversized units supplied in multiple sections.



VCS3B / EO
Detail of External Operator



All Metric dimensions ( ) are soft conversion.
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Product Information

Models

Volume Extractor	**AE 1**
	AE 2

Application

- Gang operated curved blades move full open to full closed to provide flow diversion and volume control at duct take-offs.
- Helps to bring even air distribution to the grille face minimizing, unwanted air jets and noise.

Features

- Cold rolled blades and frame.
- Available in two blade spacings:
  Blades 1 in. [25] on center - Model AE1
  Blades 2 in. [51] on center - Model AE2
- Two blade orientations available:
  Blades parallel to short duct dimension **AE 1S** and **AE 2S**
  Blades parallel to long duct dimension **AE 1L** and **AE 2L**.
- Three operator types available:

No. 1

Manual Adjusting Lever—furnished at no extra cost if specified.

Specifications:

Maximum movement bar length = 36 in. [914]
Maximum blade length = 36 in. [914]
Maximum area = 4 sq. ft

Two adjusting levers are furnished when blade length exceeds 16 in. [406].

No. 3

The key operated mechanism for operation through the grille face allows full adjustment without removing the grille face.

The capacity limitations of the key operated mechanism govern the size limitations as listed below.

Specifications:

Maximum movement bar length = 30 in. [762]
Maximum blade length = 16 in. [406]
Maximum area = 2 sq. ft

No. 4

Manual, externally controlled adjusting rod, complete with set screw lock.

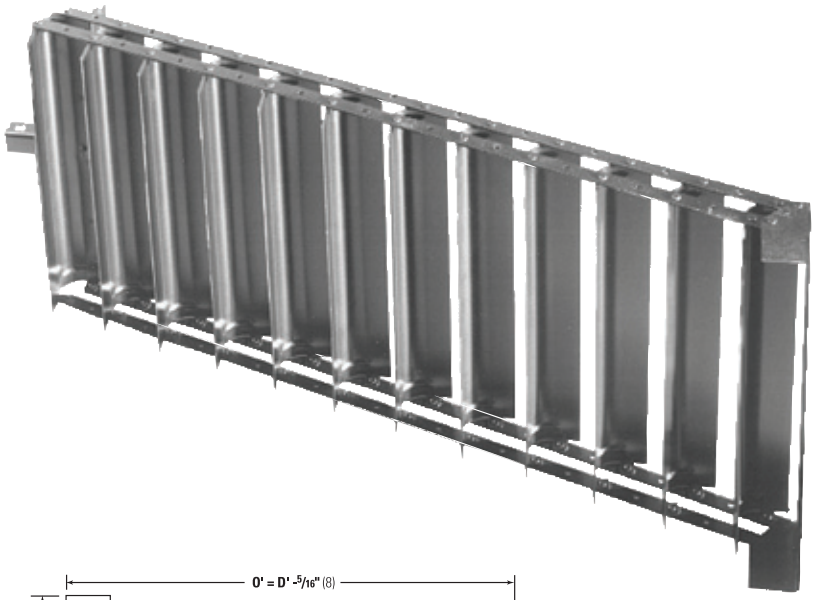
This operator rod assembly is designed and recommended for all oversize volume extractors and should be specified when Damper Area exceeds the 4 sq. ft area limitation.

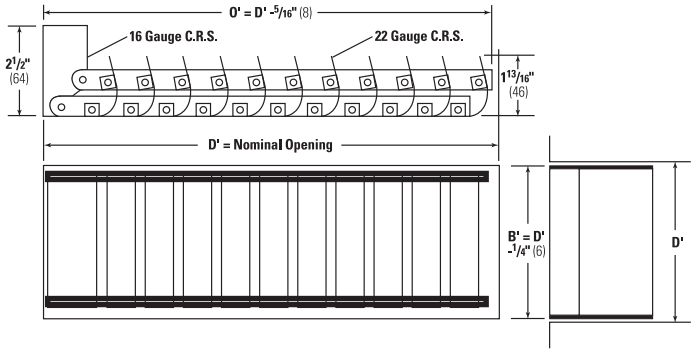
Specifications:

Maximum movement bar length = 60 in. [1524]
Maximum blade length = 36 in. [914]
Maximum area = 6 sq. ft

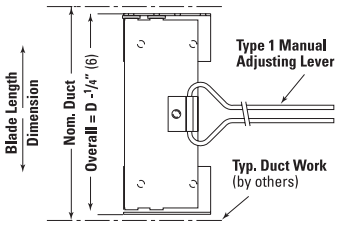
Two adjusting rods are supplied when blade length exceeds 24 in. [610].

For more information contact your local Price sales rep.

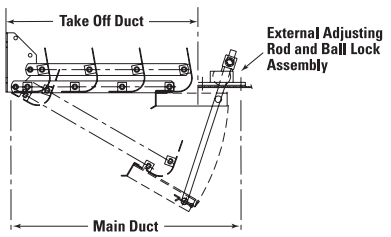




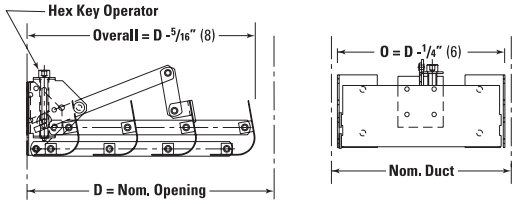
No. 1



No. 4



No. 3



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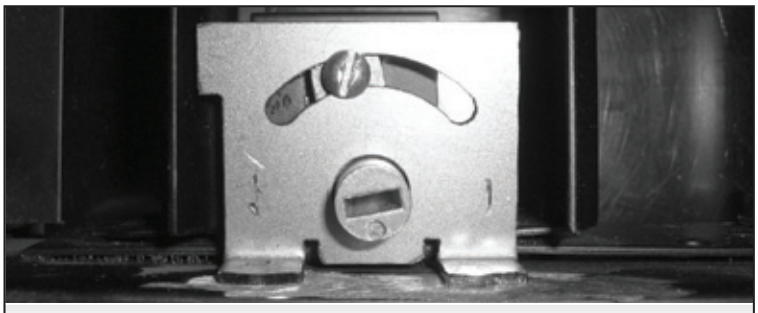
VCS5

HEAVY DUTY BALANCING DAMPER

The Price VCS5 is specifically designed for use with high capacity industrial grilles and diffusers such as model HCD and150 and 300 series. The damper comes with a screw type locking mechanism that immobilizes the blades once the desired damper set-point is achieved.

Heavy gauge blades and welded frame are ideally suited for industrial applications.

Heavy duty damper c/w face adjustable screw driver operator



Blade lock mechanism positively maintains damper setting

www.priceindustries.com for additional product information, including product videos and brochures.

VCS5 - Heavy Duty Balancing Dampers

Product Information

Model

Heavy Duty Balancing Damper VCS5

Heavy Duty Balancing Damper is specifically designed for use with high capacity industrial grilles and diffusers such as model HCD, 150 and 300 series. Blades move simultaneously in opposite directions to allow for precise metering of the air while creating a minimal disturbance to the air flow. The damper comes with a positive screw type locking mechanism that immobilizes the blades once the desired damper set-point is achieved.

When ordered together with the supply grille the VCS5 damper is supplied factory mounted. The VCS5 attaches quickly and easily to the outlet frame with sheet metal screws facilitating field or warehouse installation.

Damper is face adjustable when used with HCD, 150 and 300 series of products.

Application Guidelines

TheVCS5industrialdamperisrecommended for any of the following conditions:

- Outlet is subject to turbulent or non-uniform flow due to close proximity to duct fittings such as elbows, transitions or take offs, or close to the discharge of a supply fan
- Outlet is subject to vibration due to close proximity with fans or other mechanical equipment
- Air volume exceeding 2000 cfm Duct velocity exceeding 1000 fpm
- Outlet length exceeding 24 in. Outlet width exceeding 18 in.

Features

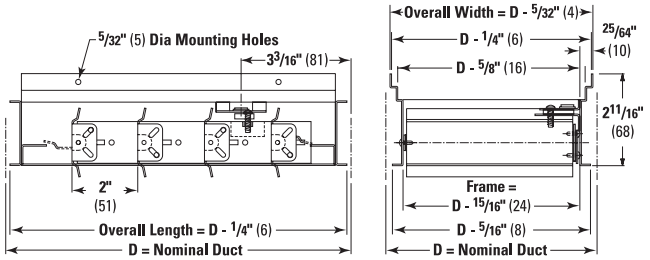
- Painted, 18 gage steel damper blades and frames.
- Welded steel frames.
- Blade lock mechanism integrated into damper operator.
- Blades hold position under high velocity and turbulent flow.

Available Sizes

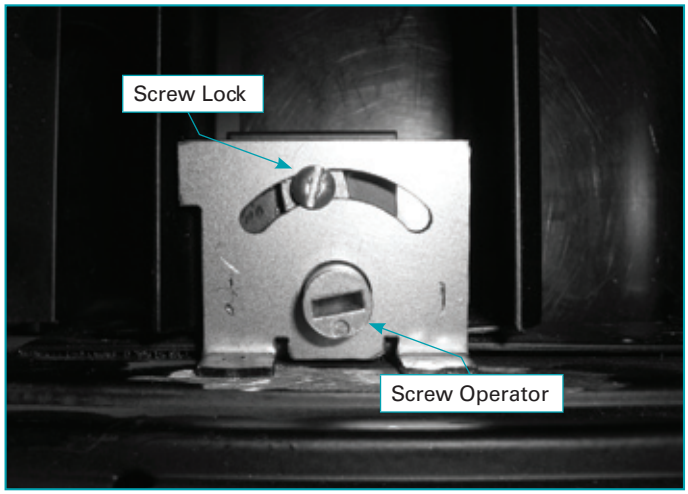
Minimum	Maximum
6 in. x 4 in. [152 x 102]	**36 in. x 24 in.** [914 x 610]

- One-piece construction up to size 36x24.
- Larger damper supplied in sections.

VCS5 - Heavy Duty Damper c/w Screw Driver Operator



Locking Mechanism



GRILLES AND REGISTERS

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Imperial dimensions are converted to metric and rounded to the nearest millimeter.

TLRD Series - Thin Line Return Dissipater

Product Information

Models

Thin Line Return Dissipater **TLRD**

Price Thin Line Return Dissipaters are designed to provide solutions to HVAC noise control applications by supplying an attractive alternative to standard transfer grilles, with the added benefit of return air noise reduction. The aerodynamically designed internal geometry allows return air to flow through with minimal pressure drop and maximum attenuation performance. Price TLRD absorptive silencers are designed for return air applications.This low velocity configuration provides the highest insertion loss levels across the full range of frequencies. With a smooth aerodynamic surface throughout, these silencers are best suited for applications with velocities below 250 fpm.

Features

- Cataloged performance for transmission loss and insertion loss.
- Powder coat paint option for enhanced appearance.
- Slim engineered geometry to provide a compact design.
- Optimized inlet radius for minimal pressure drop.
- Highest quality welded construction.

Construction

Price absorptiveThin Line Return Dissipaters consist of a solid metal casing, and acoustic fiberglass media.

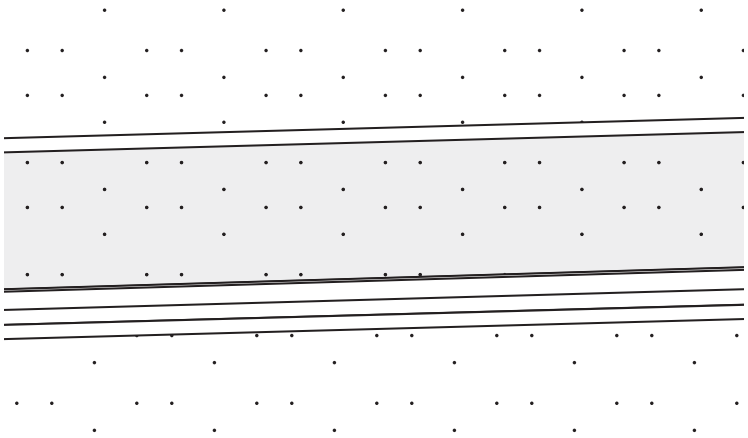
Max size one piece construction is 48x48. For ceiling lay-in application the TLRD is offered in 24x24 ceiling module size.

Materials

G – Galvanized (Default material)
SC – Satin Coat (Paintable)

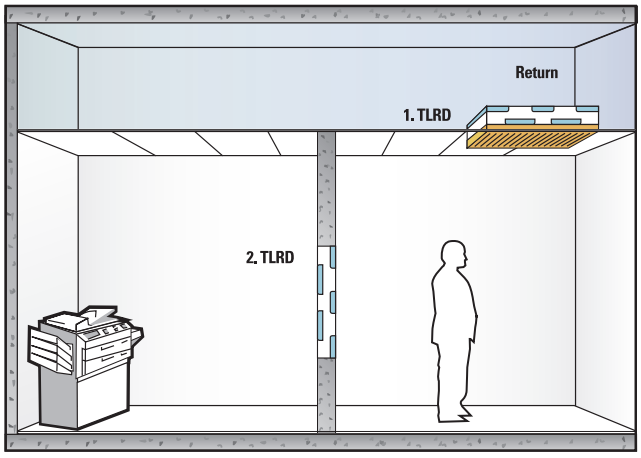
Refer to TLRD section is Noise Control catalog for more details and performance data.

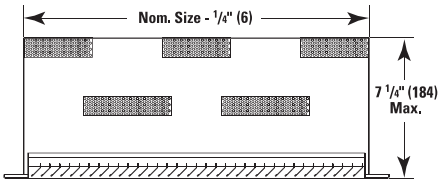
TLRD - Thin Line Return Dissipaters



Applications:

1. Reduce plenum sound from entering occupied space through return air opening
2. Minimize the transmission of mechanical equipment noise through transfer grilles





Performance Data - Model 535

Core Area Sq. ft	Nominal Size	Core Velocity, fpm	100	150	200	250
		Velocity Pressure, in. w.g.	0.001	0.001	0.002	0.004
		Negative SP	0.025	0.057	0.102	0.159
3.13	22 x 22	Flow Rate, cfm	314	470	627	784
		NC	--	--	--	20

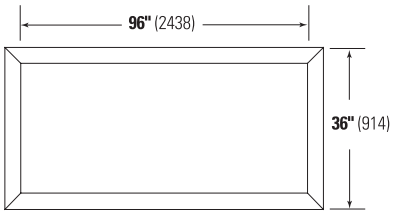
Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Performance data is for 535 grille complete with TLRD.
5. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
6. Blanks (—) indicate an NC level below 15.

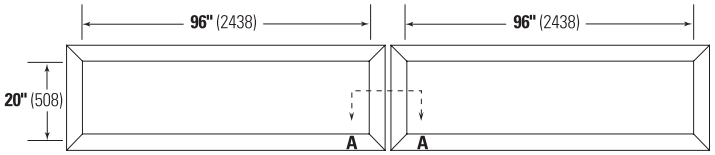
All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Construction Details

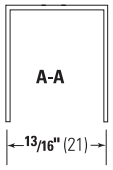
20, 30 and 60, 70 Series
Aluminum Supply and Return Grilles
Single Section Max. Size 36" (914) **x 96"** (2438)



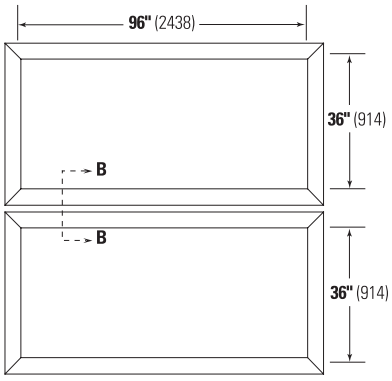
Single Section
Maximum Size



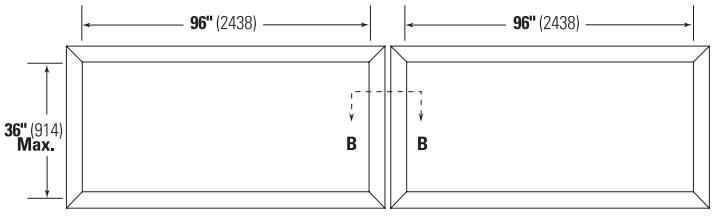
Longitudinal Multiple Section Unit for Widths 20" (508) **and less**



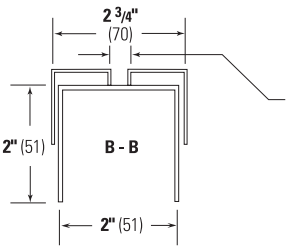
Narrow Border Joint



Multiple Section Unit



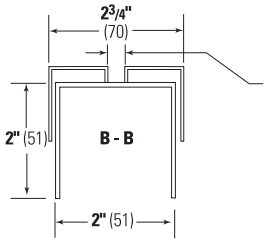
Longitudinal Multiple Section Unit for Widths 21" (533) **to 36"** (914)



Note:
Spacing Between Frames will be:
1/4" (6) **for 'F' and 'C' Border**
3/4" (19) **for 'N' Border**

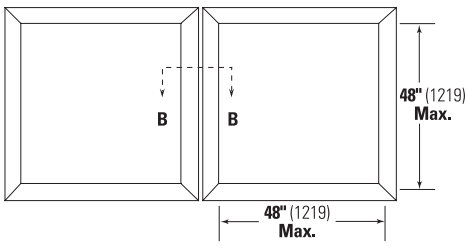
Duct Channel Max. Length =
96" (2438)

90 Series Steel Gym Grilles and
150, 300 Series Industrial Grilles
Single Section Max. Size 48" (1219) **x 48"** (1219)
Except for 150G, Max. Size is 48" (1219) **x 36"** (914)



Note:
Spacing between frames will be:
1/4" (6) **for 'F' border**

Duct Channel
Max. Length = 96" (2438)



Note: Above Sizes Shown as Nom. Duct Size.

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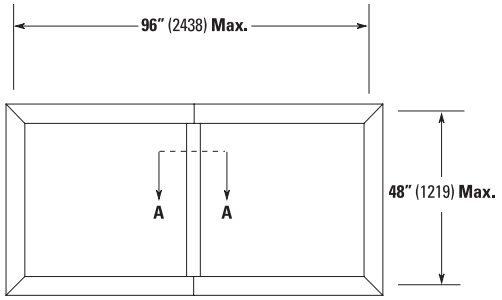
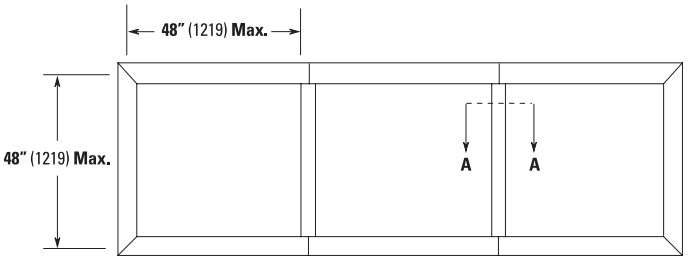
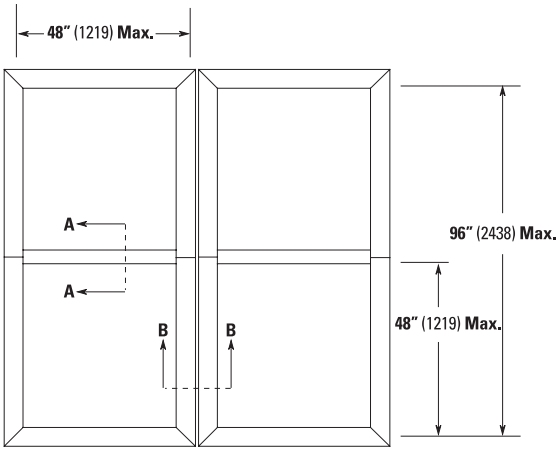
Construction Details



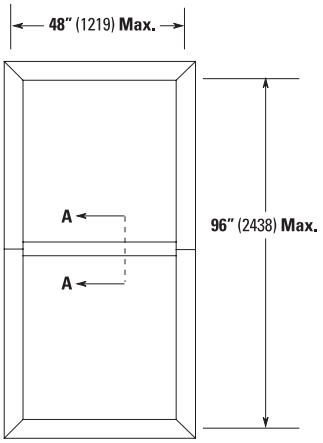
Horizontal
- Two Section Unit -



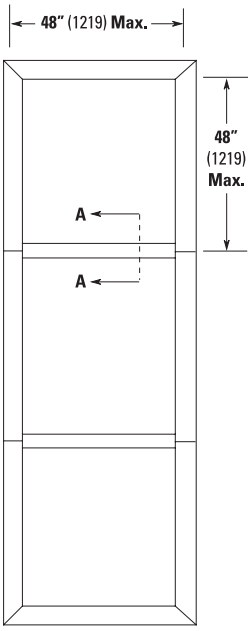
Horizontal
- Multiple Section Unit -
(three or More Sections)



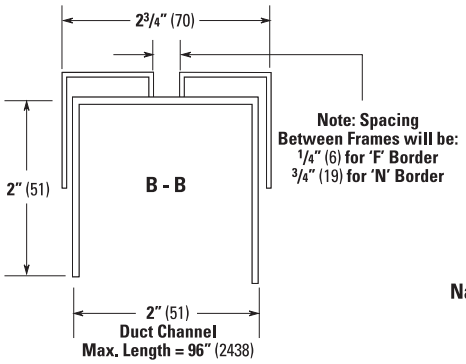
Multiple Section in Both Dimensions
Maximum 6 Sections

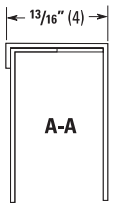


Vertical
- Two Section Unit -



Vertical
- Multiple Section Unit -
(Three or More Sections)





Narrow Face Mullion

Notes:
- Single Section Maximum Size is 48" (1219) x 48" (1219)
- Above Sizes Shown as Nom. Duct Size.
- Not applicable to model 540/640 grilles.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Grilles & Registers

Introduction

For over 50 years, Price has distinguished itself as a qualified and dependable supplier of specialized grilles and registers. We are able and willing to produce special products to meet our customers' unique requirements. The 'specials' range from custom paint colors to complex shapes or special materials requiring a complete re-engineering of our standard product. Whatever the case, we invite your inquiry.

Custom Shapes and Sizes

The examples shown here represent a fraction of the custom shapes and sizes Price has manufactured to satisfy our customers' architectural or performance requirements. Many geometric shapes are available, from one grille type or another – contact your Price sales rep with your needs.

Custom Finishes

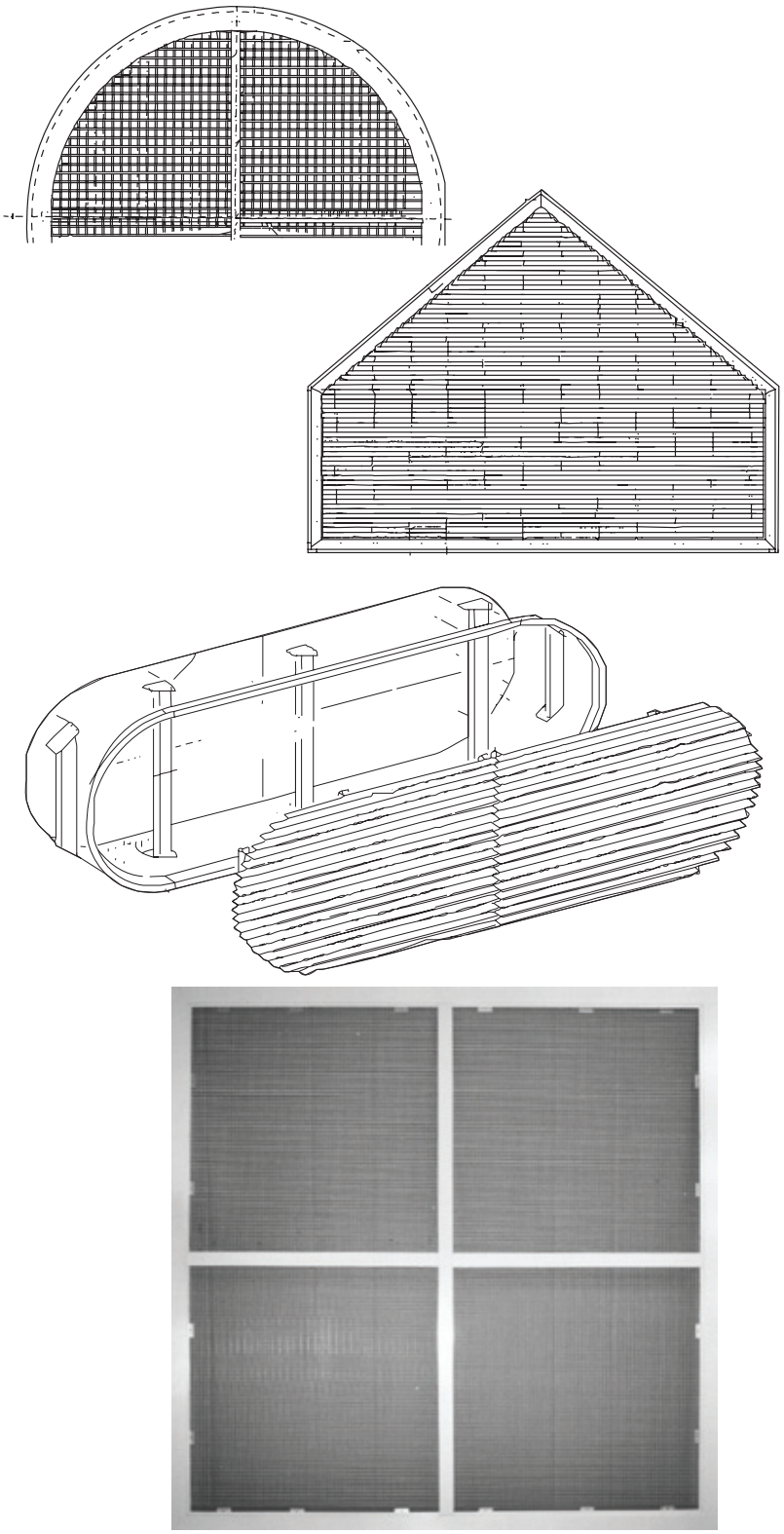
Price has a wealth of experience in custom finishes for air distribution outlets. Air outlets are one of the few visible components of the HVAC system, therefore their finish is critical to them blending harmoniously with their surroundings.

Custom color – individually matched to customer supplied samples.

Anodizing – clear or colored to match requirements.

Plating – Chrome, Nickel and Brass plating finishes are available.

Silhouette – brushed aluminum for a truly unique finish (LBMR only).



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Models

Air Nozzle Diffuser **AND**

Price AND (Air Nozzle Diffuser) is a high capacity diffuser with jet-type air flow, specifically designed for spot heating or cooling in high ceiling applications such as convention centers, meeting halls and auditoriums. The exceptional architectural styling provides a modern alternative to traditional diffusers while upholding the trusted performance of any conventional Price product.

Deep concentric deflection rings in each nozzle assembly can be adjusted to provide horizontal or vertical directional control throughout a 60 degree arc. Price AND series diffusers can be supplied in eight different sizes, with or without a mounting panel, to suit a variety of job requirements.

Features

- 16 gauge cold rolled steel.
- Inner nozzle assembly adjustable within 60 degree arc.
- Nozzle assemblies available in a variety of sizes from 5 in. up to 16 in. in diameters.
- Available as a single diffuser (style 1) or up to four nozzle assemblies per panel (style 1P).
- Choice of panels including lay-in (style 3P), acoustic lay-in (style AT) or surface mount (style 1P).

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Available Nozzle Sizes

5 in.[125], 6 in.[150], 8 in.[200], 10 in.[254], 12 in.[305], 14 in.[350], 15 in.[375], and 16 in.[400].

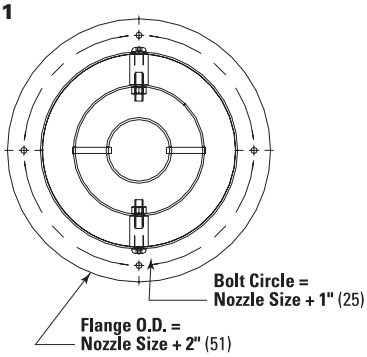
Available Panel Sizes for Style 3P

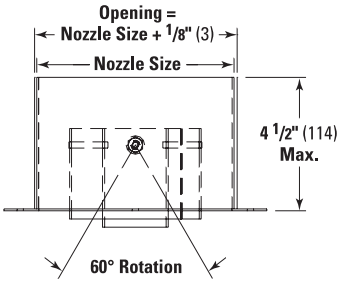
24 in.[610], 26 in.[660], 28 in.[711], and 30 in.[762].

Available Panel Thicknesses for Style 3P

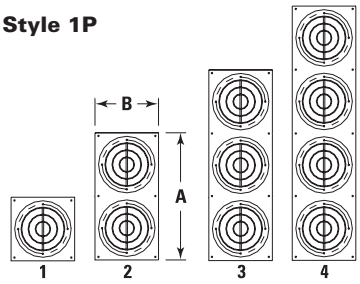
1/2 in.[13], 5/8 in.[16], and 3/4 in.[19].

Style 1





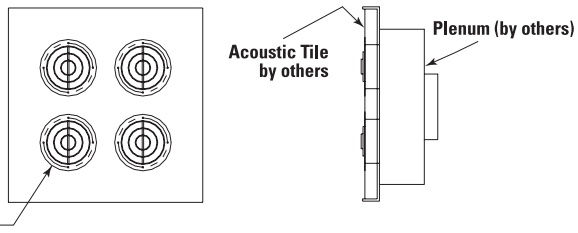
Style 1P



Min. Panel Sizes Per Nozzle Dia. & Quantity for style 1P

Nozzle Dia.	A				B
	1	2	3	4	
5	8 [203]	17 [432]	25 [635]	33 [838]	8 [203]
6	10 [254]	19 [483]	28 [711]	37 [940]	10 [254]
8	12 [305]	23 [584]	34 [864]	45 [1143]	12 [305]
10	14 [356]	27 [686]	40 [1016]	53 [1346]	14 [356]
12	16 [406]	31 [787]	46 [1168]	61 [1549]	16 [406]
14	18 [457]	35 [889]	52 [1321]	69 [1753]	18 [457]
15	19 [483]	37 [940]	55 [1397]	73 [1854]	19 [483]
16	20 [508]	39 [991]	58 [1473]	77 [1956]	20 [508]

Style 3P



✓ Product Selection Checklist

1] Select Style (1, 1P, 3P).
2] Select Nozzle Diameter.
3] Select Quantity per Panel.
4] Select Panel Size and Thickness.
5] Select Finish.

Example: Style 3P / 5 in. / 24 in. x 24 in. x 1/2 in. / 4 / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Duct Velocity (fpm)Velocity Pressure , in. wg.	300 0.01	400 0.022	500 0.04	600 0.062	700 0.090	800 0.122	900 0.160	100 0.090	1100 0.122	1200 0.160
5	Total Pressure, in. wg.	0.016	0.029	0.045	0.065	0.089	0.116	0.147	0.182	0.220	0.262
	Flow Rate, CFM	41	55	68	82	95	109	123	136	150	164
	NC	--	--	--	--	--	--	--	--	17	20
	Throw 150, 100, 50	2-4-8	4-5-10	4-7-11	5-8-12	6-9-13	7-10-13	8-10-14	9-11-15	9-11-16	10-12-16
6	Total Pressure, in. wg.	0.017	0.030	0.047	0.068	0.093	0.121	0.153	0.189	0.229	0.273
	Flow Rate, CFM	59	79	98	118	137	157	177	196	216	236
	NC	--	--	--	--	--	--	18	22	26	29
	Throw 150, 100, 50	3-5-10	4-6-11	5-8-13	6-10-14	7-11-15	9-11-16	10-12-17	10-13-18	11-13-19	11-14-20
8	Total Pressure, in. wg.	0.018	0.032	0.050	0.073	0.099	0.129	0.163	0.201	0.244	0.290
	Flow Rate, CFM	105	140	174	209	244	279	314	349	384	419
	NC	--	--	--	--	18	23	27	31	35	38
	Throw 150, 100, 50	4-6-13	6-9-15	7-11-17	9-13-19	10-14-20	11-15-21	13-16-23	14-17-24	15-18-25	15-19-26
10	Total Pressure, in. wg.	0.019	0.034	0.053	0.076	0.103	0.135	0.171	0.211	0.255	0.304
	Flow Rate, CFM	164	218	273	327	382	436	491	545	600	654
	NC	-	-	-	16	21	26	31	35	38	42
	Throw 150, 100, 50	5-8-16	7-11-19	9-13-21	11-16-23	12-18-25	14-19-27	16-20-29	17-21-30	18-22-32	19-23-33
12	Total Pressure, in. wg.	0.020	0.035	0.055	0.079	0.107	0.140	0.177	0.218	0.264	0.315
	Flow Rate, CFM	236	314	393	471	550	628	707	785	864	942
	NC	-	-	-	16	22	27	31	35	39	42
	Throw 150, 100, 50	6-10-19	9-13-23	11-16-26	13-19-28	15-21-30	17-23-32	19-24-34	21-25-36	22-27-38	23-28-39
14	Total Pressure, in. wg.	0.020	0.036	0.056	0.081	0.110	0.144	0.182	0.225	0.272	0.324
	Flow Rate, CFM	321	427	534	641	748	855	962	1068	1175	1282
	NC	-	-	-	15	21	26	31	35	38	41
	Throw 150, 100, 50	7-11-22	10-15-27	12-19-30	15-22-33	17-25-35	20-27-38	22-28-40	24-30-42	25-31-44	27-33-46
15	Total Pressure, in. wg.	0.020	0.036	0.057	0.082	0.112	0.146	0.184	0.228	0.276	0.328
	Flow Rate, CFM	368	491	613	736	859	981	1104	1227	1349	1472
	NC	-	-	-	-	20	25	30	34	37	41
	Throw 150, 100, 50	7-12-24	11-16-29	13-20-32	16-24-35	19-27-38	21-29-40	24-30-43	26-32-45	27-33-47	29-35-49
16	Total Pressure, in. wg.	0.021	0.037	0.058	0.083	0.113	0.147	0.187	0.230	0.279	0.332
	Flow Rate, CFM	419	558	698	837	977	1116	1256	1396	1535	1675
	NC	-	-	-	-	19	24	29	33	36	40
	Throw 150, 100, 50	8-13-26	11-17-30	14-21-34	17-26-37	20-28-40	23-30-43	26-32-46	28-34-48	29-36-50	30-37-53

Performance Notes:

1. Performance data is based on extrapolation of existing data. Testing must be done to confirm the above data.
2. Air flow is in cubic feet per minute, CFM.
3. All pressures are in inches of water.
4. Throw values are given in feet to terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum.)
5. Throw data is based on supply air and room air at isothermal conditions.
6. The NC values, sound pressure level, are based on a room absorption of 10 dB, re 10^{-12} watts and one diffuser.
7. Blanks (--) indicate an NC value less than 15.

Correction Factors

Deflection	0°	15°	30°
NC	--	+2	+4
Throw	--	--	--
Total Pressure	--	x 1.08	x 1.12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

PRICE ND Series air distribution products are ideally suited for industrial, institutional and commercial applications where accurate directional control of a concentrated column of air is required to help minimize stagnant or poorly conditioned zones. The high velocity air flow and long distance projection capability of the ND series of nozzle diffusers save duct work and accomplish ventilation of hard to reach areas. ND series nozzle diffusers feature all aluminum construction, easy finger tip adjustment and provisions for ceiling, wall or exposed duct mounting.

Features

- Aluminum construction
- Durable powder coat finish is standard.
- High capacity.
- Low noise levels
- Low pressure drop

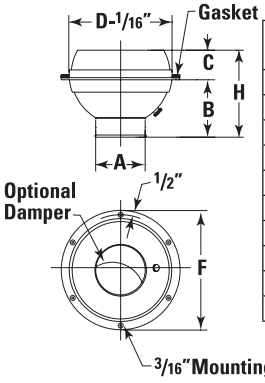
Directional air pattern control:

- ± 35 degree deflection
- 360 degree rotation
- All models available in nom duct sizes from 6 in. to 20 in. in 2 in. increments. Model ND is additionally offered in 3 in. and 4 in. nom duct sizes.
- Choice of wall (SM), ceiling (SM) or exposed duct mount (RD or RR).
- Optional aperture style damper.

ND

ND-A
(with optional aperture damper)

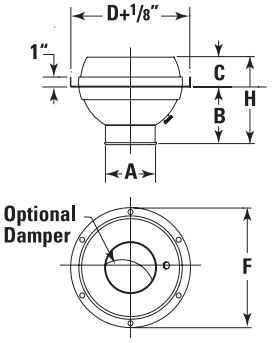
ND - Wall / Ceiling Mount (SM Frame)



Size	A	B	C	D	F	H	Mtg Holes
3*	1 5/8	1 3/4	15-16	3	5	2 11/16	3
4	2	2 9/16	3/4	4	6	3 5/16	3
6	3	3 1/16	1 7/16	6	8	4 1/2	4
8	4 3/8	4 1/4	1 3/4	8	10	6	4
10	5 3/4	5 1/2	2 7/8	10	12	8 3/8	6
12	7 3/8	6	3	12	14	9	6
14	8 5/8	7 1/8	4 1/8	14	16	11 1/4	6
16	9 3/4	8 1/4	4 3/4	16	18	13	6
18	10 1/2	9 1/2	4 1/4	18	20	13 3/4	8
20	12 3/8	10 7/8	4 7/8	20	22	15 3/4	8

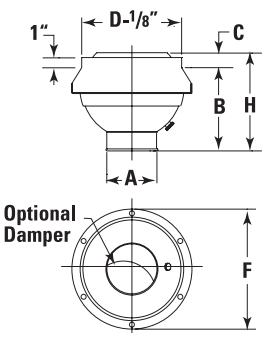
* damper not available on 3 in. unit

ND - Exposed Round Duct (RD Frame)



Size	A	B	C	D	F	H
4	2	2 9/16	3/4	6	6	3 5/16
6	3	3 1/16	1 7/16	8	8	4 1/2
8	4 3/8	4 1/4	1 3/4	10	10	6
10	5 3/4	5 1/2	2 7/8	12	12	8 3/8
12	7 3/8	6	3	14	14	9
14	8 5/8	7 1/8	4 1/8	16	16	11 1/4
16	9 3/4	8 1/4	4 3/4	18	18	13
18	10 1/2	9 1/2	4 1/4	20	20	13 3/4
20	12 3/8	10 7/8	4 7/8	22	22	15 3/4

ND - Round Reducer (RR Frame)



Size	A	B	C	D	F	H
6	3	5 9/16	1	6	8	6 9/16
8	4 3/8	6 3/4	1	8	10	7 3/4
10	5 3/4	8	1	10	12	9
12	7 3/8	8 1/2	1	12	14	9 1/2
14	8 5/8	9 5/8	1 5/8	14	16	11 1/4
16	9 3/4	10 3/4	2 1/4	16	18	13
18	10 1/2	12	1 3/4	18	20	13 3/4
20	12 3/8	13 3/8	2 3/8	20	22	15 3/4

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Nozzle Velocity (fpm)	1000	1500	2000	2500	3000	3500	4000
3	cfm	14	22	29	36	43	50	58
	Static Pressure	0.03	0.07	0.13	0.20	0.28	0.39	0.50
	NC	<15	<15	<15	19	23	26	30
	Projection	2-4-8	3-6-13	4-8-15	5-11-16	6-12-17	7-13-20	8-14-21
4	cfm	22	33	44	55	66	77	88
	Static Pressure	0.03	0.07	0.13	0.20	0.28	0.39	0.50
	NC	<15	<15	<15	19	23	26	30
	Projection	3-6-12	4-8-17	6-12-23	8-16-24	9-18-27	10-21-30	12-22-32
6	cfm	49	74	98	123	147	172	196
	Static	0.05	0.12	0.22	0.34	0.49	0.66	0.86
	NC	<15	<15	15	21	25	29	33
	Projection	4-8-16	6-12-23	8-16-27	10-20-30	12-21-32	14-25-36	16-26-38
8	cfm	104	157	209	261	313	365	418
	Static Pressure	0.06	0.14	0.24	0.38	0.53	0.70	0.92
	NC	<15	<15	17	24	30	35	38
	Projection	6-11-23	8-17-34	11-23-39	14-28-44	17-31-46	20-35-52	23-38-55
10	cfm	180	270	361	451	541	631	721
	Static Pressure	0.07	0.15	0.25	0.39	0.56	0.74	0.96
	NC	<15	<15	21	29	35	40	45
	Projection	7-15-30	11-22-45	15-30-51	19-37-57	22-41-61	26-47-69	30-50-72
12	cfm	297	445	593	742	890	1038	1187
	Static Pressure	0.07	0.15	0.26	0.40	0.58	0.78	1.01
	NC	<15	15	24	32	38	44	47
	Projection	10-19-38	14-29-57	19-38-65	24-48-74	29-52-79	33-60-88	38-64-93
14	cfm	406	609	811	1014	1217	1420	1623
	Static Pressure	0.07	0.15	0.26	0.41	0.58	0.79	1.02
	NC	<15	15	25	33	39	44	48
	Projection	11-22-45	17-33-67	22-45-76	28-56-86	33-61-91	39-70-103	45-75-108
16	cfm	518	778	1036	1296	1555	1815	2074
	Static Pressure	0.07	0.14	0.26	0.41	0.58	0.80	1.03
	NC	<15	16	26	33	39	44	49
	Projection	13-25-50	19-38-76	25-50-86	32-63-97	38-69-103	44-79-117	50-84-122
18	cfm	601	902	1202	1503	1804	2105	2406
	Static Pressure	0.06	0.13	0.24	0.37	0.54	0.74	0.96
	NC	<15	16	26	33	39	44	49
	Projection	14-27-54	20-41-81	27-54-105	34-68-110	41-74-111	47-85-126	54-91-132
20	cfm	835	1253	1670	2088	2506	2924	3341
	Static Pressure	0.06	0.12	0.22	0.34	0.49	0.68	0.88
	NC	<15	17	27	34	40	46	51
	Projection	16-32-64	24-48-96	32-64-110	40-80-123	48-87-131	56-100-148	64-107-155

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow cfm: Based on standard air density and isothermal conditions.
3. Noise Criteria: Noise criteria [NC] curve which is not exceeded with a Room Attenuation of 10db and based on Sound Power LevelRe: 10^{-12} watts.
4. Static Pressure: in. w.g. required.
5. Projection: Projection distance [THROW] in feet from the Nozzle discharge at which the maximum velocity has been reduced to specified terminal velocity [Vt].
6. Nozzle Velocity: Nozzle Discharge Velocity in feet per minute [fpm].
7. Terminal Velocity: Maximum velocity [Vt] in feet per minute at the specified distance from the outlet face [THROW] 400 fpm, 200 fpm, and 100 fpm respectively.

All Metric dimensions ( ) are soft conversion.
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Air Nozzle
AN Series

Product Information

Models

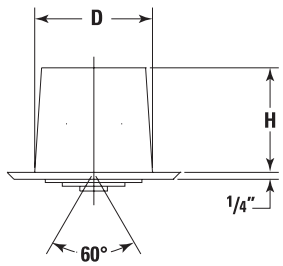
Air Nozzle with core	**ANR**
Air Nozzle without core	**ANF**

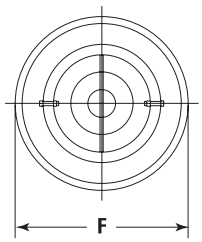
Price AN series Air Nozzles are both versatile and architecturally pleasing.These nozzles are an ideal choice for new or retrofit construction and can be used in supply or exhaust applications. They provide the designer with freedom to install in the ceiling or wall to suit room requirements. The 30 degree directional air pattern control offered by the ANR series nozzles allow for precise spot heating or cooling.

Features

- Aluminum construction
- Concealed mounting
- Low pressure
- Quiet
- Pattern adjustabilty up to 30 degrees and finger tip directional adjustment (ANR only) offered in 3 in., 4 in., 5 in., 6 in., 8 in., 10 in., 12 in., 14 in. and 16 in. sizes.

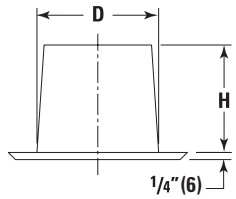
ANR

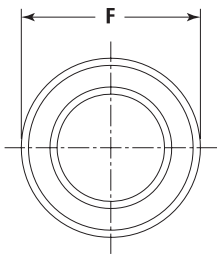




Nom. Size (D)	F	H
3	5 1/4	3 1/2
4	6 1/4	3 1/2
5	7 1/4	4
6	8 1/4	2 1/4
8	10 1/4	2 1/4
10	12 1/4	2 1/4
12	14 1/4	2 1/4
14	16 1/4	2 1/4
16	18 1/4	2 1/4

ANF





Nom. Size (D)	F	H
3	5 1/4	3 1/2
4	6 1/4	3 1/2
5	7 1/4	4
6	8 1/4	2 1/4
8	10 1/4	2 1/4
10	12 1/4	2 1/4
12	14 1/4	2 1/4
14	16 1/4	2 1/4
16	18 1/4	2 1/4

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Model	Duct Velocity (fpm) / Velocity Pressure	400 / 0.01	600 / 0.022	800 / 0.04	1000 / 0.062	1200 / 0.090	1400 / 0.122	1600 / 0.160
3		cfm	20	29	39	49	59	69	79
	ANF	Total Pressure	0.012	0.026	0.047	0.074	0.106	0.144	0.188
	ANF	NC	<15	<15	<15	<15	17	21	25
	ANR	Total Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.256
	ANR	NC	<15	<15	<15	16	21	25	29
		Projection	1-3-7	2-5-10	3-7-12	5-9-13	6-10-14	6-11-16	7-12-17
4		cfm	35	52	70	87	105	122	140
	ANF	Total Pressure	0.012	0.026	0.047	0.076	0.106	0.144	0.188
	ANF	NC	<15	<15	<15	19	23	27	31
	ANR	Total Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.256
	ANR	NC	<15	<15	16	22	28	32	36
		Projection	2-4-10	3-7-14	4-10-16	6-12-18	7-14-19	9-15-21	10-13-18
5		cfm	55	82	109	136	164	191	218
	ANF	Total Pressure	0.012	0.026	0.047	0.074	0.106	0.144	0.188
	ANF	NC	<15	<15	16	22	27	31	35
	ANR	Total Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.256
	ANR	NC	<15	<15	21	28	33	37	41
		Projection	2-5-11	3-6-15	5-10-20	8-13-22	9-15-24	11-18-26	12-16-23
6		cfm	79	118	157	196	236	275	314
	ANF	Total Pressure	0.012	0.026	0.047	0.074	0.106	0.144	0.188
	ANF	NC	<15	<15	20	26	31	35	39
	ANR	Total Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.256
	ANR	NC	<15	17	25	32	37	42	46
		Projection	4-8-15	5-11-20	6-15-24	9-18-26	11-20-29	13-22-31	15-24-33
8		cfm	140	210	280	350	420	490	560
	ANF	Total Pressure	0.012	0.029	0.052	0.08	0.116	0.158	0.207
	ANF	NC	<15	<15	<15	15	20	25	29
	ANR	Total Pressure	0.017	0.039	0.07	0.109	0.157	0.214	0.28
	ANR	NC	<15	<15	15	20	25	30	34
		Projection	5-11-23	8-17-28	11-23-32	14-25-36	17-28-39	20-30-42	23-32-45
10		cfm	218	327	436	545	654	763	872
	ANF	Total Pressure	0.012	0.029	0.052	0.08	0.116	0.158	0.207
	ANF	NC	<15	<15	<15	17	22	27	31
	ANR	Total Pressure	0.017	0.039	0.07	0.109	0.157	0.214	0.28
	ANR	NC	<15	<15	17	22	27	32	36
		Projection	7-14-28	11-21-34	14-28-40	18-31-44	21-34-49	25-37-53	28-40-56
12		cfm	314	471	628	785	942	1100	1256
	ANF	Total Pressure	0.012	0.029	0.052	0.08	0.116	0.159	0.207
	ANF	NC	<15	<15	<15	17	23	27	32
	ANR	Total Pressure	0.017	0.039	0.07	0.109	0.157	0.215	0.28
	ANR	NC	<15	<15	19	23	29	33	38
		Projection	8-17-34	13-25-41	17-34-48	21-38-53	25-41-58	30-45-63	38-54-76
14		cfm	428	641	855	1069	1283	1497	1710
	ANF	Total Pressure	0.012	0.029	0.052	0.08	0.117	0.158	0.207
	ANF	NC	<15	<15	<15	19	24	29	33
	ANR	Total Pressure	0.017	0.039	0.07	0.109	0.158	0.214	0.28
	ANR	NC	<15	15	20	25	30	35	39
		Projection	9-20-39	15-30-48	20-39-56	25-44-62	30-48-68	35-52-74	39-56-79
16		cfm	558	838	1117	1396	1675	1954	2234
	ANF	Total Pressure	0.012	0.029	0.052	0.08	0.117	0.158	0.207
	ANF	NC	<15	<15	<15	19	25	30	34
	ANR	Total Pressure	0.017	0.039	0.07	0.109	0.158	0.214	0.28
	ANR	NC	<15	15	20	25	31	36	40
		Projection	11-23-45	17-34-55	23-45-64	28-50-71	34-55-78	39-60-84	45-64-90

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow cfm: Standard air density and isothermal conditions.
3. Noise Criteria: Noise criteria [NC] curve which is not exceeded with a Room Attenuation of 10db and based on Sound Power LevelRe: 10^{-12} watts.
4. Static Pressure: in. w.g. required.
5. Projection: Projection distance [THROW] in feet from the Nozzle discharge at which the maximum velocity has been reduced to specified terminal velocity [Vt].
6. Nozzle Velocity: Nozzle Discharge Velocity in feet per minute [fpm].
7. Terminal Velocity: Maximum velocity [Vt] in feet per minute at the specified distance from the outlet face [THROW] 400 fpm, 200 fpm, and 100 fpm respectively.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Round Supply Grille
RSG Series

Product Information

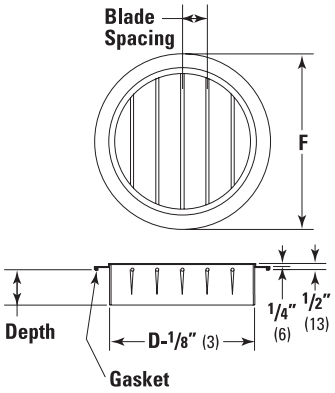
Round Supply Grilles Series (RSG) are ideally suited for commercial and industrial applications requiring a supply grille that combines versatility and modern esthetics of a flowing circular design with superior performance and outstanding quality. The RSG series features heavy duty aluminum construction with individually adjustable blades. By altering the setting of the blades the discharge air stream can be adjusted from a concentrated column of air to a conical widespread diffusion pattern. The grilles are available in single or double deflection in one, two or three inch blade spacing. The available three mounting frames allow the grilles to be easily installed in a ceiling, on a wall or mounted on exposed ductwork.

Features

- Aluminum construction
- Durable powder coat finish is standard.
- Single Deflection (SD) or Double Deflection (DD)
- 1 in. or 2 in. blade spacing on double deflection grilles
- 1 in., 2 in. or 3 in. blade spacing on single deflection grilles
- Adjustable blades
- Air discharge adjusts from concentrated to widespread
- Most models available in nom duct sizes from 6 in. to 24 in. (see product size chart for details).
- Choice of wall, ceiling or exposed duct mount

RSG series (Single Deflection)

RSG - Wall / Ceiling Mount (SM Frame)

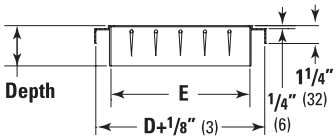


Size	D	F
6*, **	6	8 1/4
8*	8	10 1/4
10*	10	12 1/4
12*	12	14 1/4
14*	14	16 1/4
16	16	18 1/4
18	18	20 1/4
20	20	22 1/4
22	22	24 1/4
24	24	26 1/4
30***	30	32 1/4

* Size 30 not available in SD 1 in..
** Size 6 not available in SD and DD 2 in..
***Sizes 6 to 14 not available in SD 3 in..

Depth
4 9/16 in. for Double Deflection 2 in. blade spacing model. All others are 2 9/16 in. deep.

RSG - Exposed Round Duct (RD Frame)

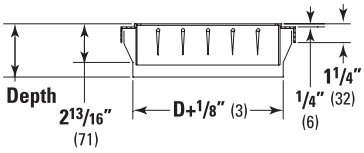


Size	D	E	F
6*,**	8	6	8 1/4
8*	10	8	10 1/4
10*	12	10	12 1/4
12*	14	12	14 1/4
14*	16	14	16 1/4
16	18	16	18 1/4
18	20	18	20 1/4
20	22	20	22 1/4
22	24	22	24 1/4
24	30	24	26 1/4
30***	32	30	32 1/4

* Size 30 not available in SD 1 in..
** Size 6 not available in SD and DD 2 in..
*** Sizes 6 to 14 not available in SD 3 in..

Depth
4 9/16 in. for Double Deflection 2 in. blade spacing model. All others are 3 1/16 in. deep.

RSG - Round Reducer (RR Frame)



Size	D	F
6*,**	6	8 1/4
8*	8	10 1/4
10*	10	12 1/4
12*	12	14 1/4
14*	14	16 1/4
16	16	18 1/4
18	18	20 1/4
20	20	22 1/4
22	22	24 1/4
24	24	26 1/4

* Size 6 not available in SD and DD 2 in..
** Sizes 6 to 14 not available in SD 3 in.

Depth
4 9/16 in. for Double Deflection 2 in. blade spacing model. All others are 3 13/16 in. deep.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Single Deflection, 1 in. Blade Spacing

Size	Duct Velocity Velocity Pressure	400 0.010	600 0.022	800 0.040	1000 0.062	1200 0.090	1400 0.122	1600 0.160
6	cfm	78	118	157	196	235	274	314
	Static Pressure	0.049	0.110	0.196	0.306	0.441	0.600	0.784
	NC	--	17	25	31	37	41	45
	Throw	4-8-15	6-12-21	8-14-24	10-16-28	13-21-30	15-22-32	17-24-34
8	cfm	140	209	279	349	419	489	558
	Static Pressure	0.035	0.080	0.142	0.222	0.319	0.434	0.567
	NC	--	15	23	29	35	39	43
	Throw	5-10-20	8-16-27	11-21-32	14-25-36	17-28-39	20-30-41	21-32-45
10	cfm	218	327	436	545	654	763	872
	Static Pressure	0.027	0.061	0.109	0.170	0.245	0.333	0.435
	NC	--	--	21	28	33	37	41
	Throw	6-12-24	9-17-32	14-26-37	17-31-45	21-34-47	25-37-52	29-40-56
12	cfm	314	471	628	785	942	1099	1256
	Static Pressure	0.022	0.049	0.086	0.135	0.194	0.264	0.345
	NC	--	--	20	26	32	36	40
	Throw	7-15-30	12-24-40	16-33-47	20-37-53	25-41-59	29-45-65	33-48-74
14	cfm	428	641	855	1069	1283	1497	1710
	Static Pressure	0.018	0.039	0.070	0.109	0.158	0.214	0.280
	NC	--	--	19	25	31	35	39
	Throw	8-18-37	14-28-47	18-38-55	23-44-61	30-48-70	34-52-74	38-56-83
16	cfm	558	838	1117	1396	1675	1954	2234
	Static Pressure	0.014	0.032	0.058	0.090	0.130	0.177	0.231
	NC	--	--	18	24	30	34	38
	Throw	10-20-40	15-30-53	22-44-65	28-50-72	34-54-80	40-60-85	45-64-90
18	cfm	707	1060	1414	1767	2120	2474	2827
	Static Pressure	0.012	0.027	0.048	0.075	0.108	0.147	0.192
	NC	--	--	17	24	29	33	37
	Throw	11-22-44	18-36-61	25-50-72	31-57-80	40-63-89	45-67-95	50-71-101
20	cfm	872	1308	1744	2180	2616	3052	3488
	Static Pressure	0.010	0.023	0.040	0.063	0.091	0.123	0.161
	NC	--	--	16	23	28	32	36
	Throw	12-24-49	20-40-68	27-53-80	35-63-89	44-68-99	51-74-105	56-78-112
22	cfm	1056	1584	2112	2640	3168	3696	4224
	Static Pressure	0.008	0.019	0.034	0.053	0.076	0.104	0.135
	NC	--	--	16	22	27	32	36
	Throw	13-27-54	22-44-74	30-57-85	37-68-98	47-76-110	57-85-120	60-87-123
24	cfm	1256	1884	2512	3140	3768	4396	5024
	Static Pressure	0.007	0.016	0.028	0.044	0.064	0.087	0.114
	NC	--	--	15	22	27	31	35
	Throw	14-29-60	24-48-81	33-66-95	41-75-106	50-84-116	58-88-124	66-95-130

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflectionand and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 1/2°–45°
   The listed deflection settings refer to horizontal deflection. For other deflection angels refer to correction table.

Performance values for various deflection angles

Deflection Angle	0°	10°	20°	30°	40°
Static Pressure [times]	1.0	1.2	1.4	1.9	2.4
Throw [times]	1.0	0.9	0.8	0.7	0.6
Noise Criteria – NC [add]	+0	+3	+7	+11	+16

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Single Deflection, 2 in. Blade Spacing

Size	Duct Velocity / Velocity Pressure	400 / 0.010	600 / 0.022	800 / 0.040	1000 / 0.062	1200 / 0.090	1400 / 0.122	1600 / 0.160
8	cfm	140	209	279	349	419	489	558
	Static Pressure	0.032	0.072	0.128	0.199	0.287	0.391	0.510
	NC	--	--	22	28	34	38	42
	Throw	5-10-20	8-16-27	11-21-32	14-25-36	17-28-39	20-30-41	21-32-45
10	cfm	218	327	436	545	654	763	872
	Static Pressure	0.024	0.055	0.098	0.153	0.220	0.300	0.391
	NC	--	--	20	27	32	36	40
	Throw	6-12-24	9-17-32	14-26-37	17-31-45	21-34-47	25-37-52	29-40-56
12	cfm	314	471	628	785	942	1099	1256
	Static Pressure	0.019	0.044	0.078	0.121	0.175	0.238	0.311
	NC	--	--	19	25	31	35	39
	Throw	7-15-30	12-24-40	16-33-47	20-37-53	25-41-59	29-45-65	33-48-74
14	cfm	428	641	855	1069	1283	1497	1710
	Static Pressure	0.016	0.035	0.063	0.098	0.142	0.193	0.252
	NC	--	--	18	24	30	34	38
	Throw	8-18-37	14-28-47	18-38-55	23-44-61	30-48-70	34-52-74	38-56-83
16	cfm	558	838	1117	1396	1675	1954	2234
	Static Pressure	0.013	0.029	0.052	0.081	0.117	0.159	0.208
	NC	--	--	17	23	29	33	37
	Throw	10-20-40	15-30-53	22-44-65	28-50-72	34-54-80	40-60-85	45-64-90
18	cfm	707	1060	1414	1767	2120	2474	2827
	Static Pressure	0.011	0.024	0.043	0.068	0.097	0.132	0.173
	NC	--	--	16	23	28	32	36
	Throw	11-22-44	18-36-61	25-50-72	31-57-80	40-63-89	45-67-95	50-71-101
20	cfm	872	1308	1744	2180	2616	3052	3488
	Static Pressure	0.009	0.020	0.036	0.057	0.082	0.111	0.145
	NC	--	--	15	22	27	31	35
	Throw	12-24-49	20-40-68	27-53-80	35-63-89	44-68-99	51-74-105	56-78-112
22	cfm	1056	1584	2112	2640	3168	3696	4224
	Static Pressure	0.008	0.017	0.030	0.048	0.069	0.093	0.122
	NC	--	--	15	21	26	31	35
	Throw	13-27-54	22-44-74	30-57-85	37-68-98	47-76-110	57-85-120	60-87-123
24	cfm	1256	1884	2512	3140	3768	4396	5024
	Static Pressure	0.006	0.014	0.026	0.040	0.058	0.078	0.103
	NC	--	--	--	21	26	30	34
	Throw	14-29-60	24-48-81	33-66-95	41-75-106	50-84-116	58-88-124	66-95-130
30	cfm	1964	2946	3928	4910	5892	6874	7856
	Static Pressure	0.004	0.008	0.015	0.023	0.033	0.045	0.059
	NC	--	--	--	19	24	29	32
	Throw	17-34-69	30-60-102	41-82-123	50-90-129	60-101-141	69-107-150	78-116-157

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflectionand and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 ½°–45°
   The listed deflection settings refer to horizontal deflection. For other deflection angels refer to correction table.

Performance values for various deflection angles

Deflection Angle	0°	10°	20°	30°	40°
Static Pressure [times]	1.0	1.2	1.4	1.9	2.4
Throw [times]	1.0	0.9	0.8	0.7	0.6
Noise Criteria – NC [add]	+0	+3	+7	+11	+16

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Single Deflection, 3 in. Blade Spacing

Size	Duct Velocity Velocity Pressure	400 0.010	600 0.022	800 0.040	1000 0.062	1200 0.090	1400 0.122	1600 0.160
16	cfm	558	838	1117	1396	1675	1954	2234
	Static Pressure	0.012	0.028	0.049	0.077	0.111	0.151	0.198
	NC	--	--	16	22	28	32	36
	Throw	10-20-40	15-30-53	22-44-65	28-50-72	34-54-80	40-60-85	45-64-90
18	cfm	707	1060	1414	1767	2120	2474	2827
	Static Pressure	0.010	0.023	0.041	0.064	0.093	0.126	0.165
	NC	--	--	15	22	27	31	35
	Throw	11-22-44	18-36-61	25-50-72	31-57-80	40-63-89	45-67-95	50-71-101
20	cfm	872	1308	1744	2180	2616	3052	3488
	Static Pressure	0.009	0.019	0.034	0.054	0.078	0.106	0.138
	NC	--	--	--	21	26	30	34
	Throw	12-24-49	20-40-68	27-53-80	35-63-89	44-68-99	51-74-105	56-78-112
22	cfm	1056	1584	2112	2640	3168	3696	4224
	Static Pressure	0.007	0.016	0.029	0.045	0.065	0.089	0.116
	NC	--	--	--	20	25	30	34
	Throw	13-27-54	22-44-74	30-57-85	37-68-98	47-76-110	57-85-120	60-87-123
24	cfm	1256	1884	2512	3140	3768	4396	5024
	Static Pressure	0.006	0.014	0.024	0.038	0.055	0.075	0.097
	NC	--	--	--	20	25	29	33
	Throw	14-29-60	24-48-81	33-66-95	41-75-106	50-84-116	58-88-124	66-95-130
30	cfm	1964	2946	3928	4910	5892	6874	7856
	Static Pressure	0.004	0.008	0.014	0.022	0.032	0.043	0.056
	NC	--	--	--	18	23	28	31
	Throw	17-34-69	30-60-102	41-82-123	50-90-129	60-101-141	69-107-150	78-116-157

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflectionand and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 1/2°–45°
   The listed deflection settings refer to horizontal deflection. For other deflection angels refer to correction table.

Performance values for various deflection angles

Deflection Angle	0°	10°	20°	30°	40°
Static Pressure [times]	1.0	1.2	1.4	1.9	2.4
Throw [times]	1.0	0.9	0.8	0.7	0.6
Noise Criteria – NC [add]	+0	+3	+7	+11	+16

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Double Deflection, 1 in. Blade Spacing

Size	Duct Velocity / Velocity Pressure	400 / 0.010	600 / 0.022	800 / 0.040	1000 / 0.062	1200 / 0.090	1400 / 0.122	1600 / 0.160
6	cfm	78	118	157	196	235	274	314
	Static Pressure	0.054	0.123	0.218	0.340	0.490	0.667	0.871
	NC	--	20	28	34	40	44	48
	Throw	4-8-15	6-12-21	8-14-24	10-16-28	13-21-30	15-22-32	17-24-34
8	cfm	140	209	279	349	419	489	558
	Static Pressure	0.039	0.089	0.158	0.246	0.354	0.482	0.630
	NC	--	18	26	32	38	42	46
	Throw	5-10-20	8-16-27	11-21-32	14-25-36	17-28-39	20-30-41	21-32-45
10	cfm	218	327	436	545	654	763	872
	Static Pressure	0.030	0.068	0.121	0.189	0.272	0.370	0.483
	NC	--	16	24	31	36	40	44
	Throw	6-12-24	9-17-32	14-26-37	17-31-45	21-34-47	25-37-52	29-40-56
12	cfm	314	471	628	785	942	1099	1256
	Static Pressure	0.024	0.054	0.096	0.150	0.216	0.294	0.383
	NC	--	--	23	29	35	39	43
	Throw	7-15-30	12-24-40	16-33-47	20-37-53	25-41-59	29-45-65	33-48-74
14	cfm	428	641	855	1069	1283	1497	1710
	Static Pressure	0.019	0.044	0.078	0.122	0.175	0.238	0.311
	NC	--	--	22	28	34	38	42
	Throw	8-18-37	14-28-47	18-38-55	23-44-61	30-48-70	34-52-74	38-56-83
16	cfm	558	838	1117	1396	1675	1954	2234
	Static Pressure	0.016	0.036	0.064	0.100	0.144	0.196	0.257
	NC	--	--	21	27	33	37	41
	Throw	10-20-40	15-30-53	22-44-65	28-50-72	34-54-80	40-60-85	45-64-90
18	cfm	707	1060	1414	1767	2120	2474	2827
	Static Pressure	0.013	0.030	0.053	0.083	0.120	0.164	0.214
	NC	--	--	20	27	32	36	40
	Throw	11-22-44	18-36-61	25-50-72	31-57-80	40-63-89	45-67-95	50-71-101
20	cfm	872	1308	1744	2180	2616	3052	3488
	Static Pressure	0.011	0.025	0.045	0.070	0.101	0.137	0.179
	NC	--	--	19	26	31	35	39
	Throw	12-24-49	20-40-68	27-53-80	35-63-89	44-68-99	51-74-105	56-78-112
22	cfm	1056	1584	2112	2640	3168	3696	4224
	Static Pressure	0.009	0.021	0.038	0.059	0.085	0.115	0.150
	NC	--	--	19	25	30	35	39
	Throw	13-27-54	22-44-74	30-57-85	37-68-98	47-76-110	57-85-120	60-87-123
24	cfm	1256	1884	2512	3140	3768	4396	5024
	Static Pressure	0.008	0.018	0.032	0.049	0.071	0.097	0.127
	NC	--	--	18	25	30	34	38
	Throw	14-29-60	24-48-81	33-66-95	41-75-106	50-84-116	58-88-124	66-95-130

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflectionand and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 ½°–45°
   The listed deflection settings refer to horizontal deflection. For other deflection angels refer to correction table.

Performance values for various deflection angles

Deflection Angle	0°	10°	20°	30°	40°
Static Pressure [times]	1.0	1.2	1.4	1.9	2.4
Throw [times]	1.0	0.9	0.8	0.7	0.6
Noise Criteria – NC [add]	+0	+3	+7	+11	+16

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Double Deflection, 2 in. Blade Spacing

Size	Duct Velocity Velocity Pressure	400 0.010	600 0.022	800 0.040	1000 0.062	1200 0.090	1400 0.122	1600 0.160
8	cfm	140	209	279	349	419	489	558
	Static Pressure	0.035	0.080	0.142	0.222	0.319	0.434	0.567
	NC	--	18	26	32	38	42	46
	Throw	5-10-20	8-16-27	11-21-32	14-25-36	17-28-39	20-30-41	21-32-45
10	cfm	218	327	436	545	654	763	872
	Static Pressure	0.027	0.061	0.109	0.170	0.245	0.333	0.435
	NC	--	16	24	31	36	40	44
	Throw	6-12-24	9-17-32	14-26-37	17-31-45	21-34-47	25-37-52	29-40-56
12	cfm	314	471	628	785	942	1099	1256
	Static Pressure	0.022	0.049	0.086	0.135	0.194	0.264	0.345
	NC	--	--	23	29	35	39	43
	Throw	7-15-30	12-24-40	16-33-47	20-37-53	25-41-59	29-45-65	33-48-74
14	cfm	428	641	855	1069	1283	1497	1710
	Static Pressure	0.018	0.039	0.070	0.109	0.158	0.214	0.280
	NC	--	--	22	28	34	38	42
	Throw	8-18-37	14-28-47	18-38-55	23-44-61	30-48-70	34-52-74	38-56-83
16	cfm	558	838	1117	1396	1675	1954	2234
	Static Pressure	0.014	0.032	0.058	0.090	0.130	0.177	0.231
	NC	--	--	21	27	33	37	41
	Throw	10-20-40	15-30-53	22-44-65	28-50-72	34-54-80	40-60-85	45-64-90
18	cfm	707	1060	1414	1767	2120	2474	2827
	Static Pressure	0.012	0.027	0.048	0.075	0.108	0.147	0.192
	NC	--	--	20	27	32	36	40
	Throw	11-22-44	18-36-61	25-50-72	31-57-80	40-63-89	45-67-95	50-71-101
20	cfm	872	1308	1744	2180	2616	3052	3488
	Static Pressure	0.010	0.023	0.040	0.063	0.091	0.123	0.161
	NC	--	--	19	26	31	35	39
	Throw	12-24-49	20-40-68	27-53-80	35-63-89	44-68-99	51-74-105	56-78-112
22	cfm	1056	1584	2112	2640	3168	3696	4224
	Static Pressure	0.008	0.019	0.034	0.053	0.076	0.104	0.135
	NC	--	--	19	25	30	35	39
	Throw	13-27-54	22-44-74	30-57-85	37-68-98	47-76-110	57-85-120	60-87-123
24	cfm	1256	1884	2512	3140	3768	4396	5024
	Static Pressure	0.007	0.016	0.028	0.044	0.064	0.087	0.114
	NC	--	--	18	25	30	34	38
	Throw	14-29-60	24-48-81	33-66-95	41-75-106	50-84-116	58-88-124	66-95-130

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts @ 0° deflectionand and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. **Deflection** 0°–22 1/2°–45°
   The listed deflection settings refer to horizontal deflection. For other deflection angels refer to correction table.

Performance values for various deflection angles

Deflection Angle	0°	10°	20°	30°	40°
Static Pressure [times]	1.0	1.2	1.4	1.9	2.4
Throw [times]	1.0	0.9	0.8	0.7	0.6
Noise Criteria – NC [add]	+0	+3	+7	+11	+16

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

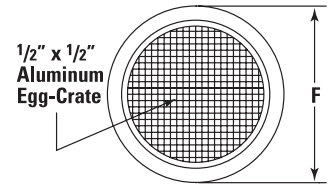
Product Information

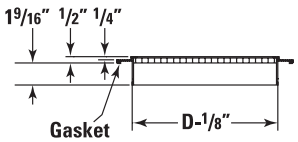
Price Round Eggcrate Series grille (RECG) features attractive round design and superb performance characterized by low air resistance and low noise levels. The RECG series is designed for for use in commercial and industrial applications as an exhaust, return or supply grille. When used in supply application the air exits as a column of air. The 1/2 in. x 1/2 in. aluminum eggcrate is set in heavy gauge aluminum frame. The grille can be installed in ceiling, on a wall or mounted on exposed duct work.

Features

- Heavy gauge aluminum construction
- 1/2 in. x 1/2 in. eggcrate
- Can be used as supply, return or exhaust grille
- 3 mounting frames
- Offered in sizes from 6 in. to 24 in. in 2 in. increments.

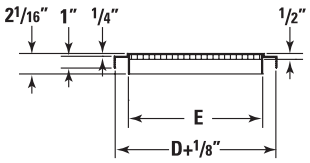
RECG - Wall / Ceiling Mount (SM Frame)





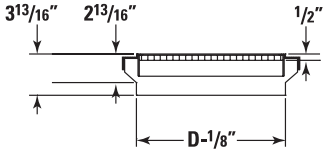
Size	D	F
6	6	8 1/4
8	8	10 1/4
10	10	12 1/4
12	12	14 1/4
14	14	16 1/4
16	16	18 1/4*
18	18	20 1/4*
20	20	22 1/4*
22	22	24 1/4*
24	24	26 1/4*

RECG - Exposed Round Duct (RD Frame)



Size	D	E	F
6	8	6	8 1/4
8	10	8	10 1/4
10	12	10	12 1/4
12	14	12	14 1/4
14	16	14	16 1/4
16	18	16	18 1/4
18	20	18	20 1/4
20	22	20	22 1/4
22	24	22	24 1/4
24	26	24	26 1/4

RECG - Exposed Round Duct (RR Frame)



Size	D	F
6	6	8 1/4
8	8	10 1/4
10	10	12 1/4
12	12	14 1/4
14	14	16 1/4
16	16	18 1/4
18	18	20 1/4
20	20	22 1/4
22	22	24 1/4
24	24	26 1/4

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Duct Velocity / Velocity Pressure	400 / 0.010	600 / 0.022	800 / 0.040	1000 / 0.062	1200 / 0.090	1400 / 0.122	1600 / 0.160
6	cfm	79	118	157	196	236	275	314
	Static Pressure [exhaust]	-0.040	-0.091	-0.162	-0.255	-0.363	-0.500	-0.652
	NC [exhaust]	<15	22	32	39	45	50	54
	Static Pressure [supply]	0.015	0.034	0.053	0.096	0.133	0.183	0.233
	NC [supply]	<15	<15	21	29	35	41	46
	Projection [supply]	4-8-15	6-12-21	8-14-24	10-16-28	13-21-30	15-22-32	17-24-34
8	cfm	140	209	279	349	419	489	559
	Static Pressure [exhaust]	-0.036	-0.080	-0.142	-0.223	-0.320	-0.432	-0.568
	NC [exhaust]	<15	22	31	38	44	49	53
	Static Pressure [supply]	0.012	0.027	0.048	0.076	0.109	0.148	0.192
	NC [supply]	<15	<15	19	27	33	39	44
	Projection [supply]	5-10-20	8-16-27	11-21-32	14-25-36	17-28-39	20-30-41	21-32-45
10	cfm	218	327	436	545	655	764	873
	Static Pressure [exhaust]	-0.033	-0.073	-0.130	-0.203	-0.293	-0.397	-0.522
	NC [exhaust]	<15	22	31	38	44	48	52
	Static Pressure [supply]	0.010	0.024	0.042	0.066	0.095	0.130	0.169
	NC [supply]	<15	<15	18	26	32	38	42
	Projection [supply]	6-12-24	9-17-32	14-26-37	17-31-45	21-34-47	25-37-52	29-40-56
12	cfm	314	471	628	786	943	1100	1257
	Static Pressure [exhaust]	-0.031	-0.070	-0.123	-0.194	-0.278	-0.384	-0.495
	NC [exhaust]	<15	22	32	38	45	49	53
	Static Pressure [supply]	0.010	0.022	0.038	0.061	0.086	0.119	0.154
	NC [supply]	<15	<15	18	25	31	37	41
	Projection [supply]	7-15-30	12-24-40	16-33-47	20-37-53	25-41-59	29-45-65	33-48-74
14	cfm	428	641	855	1069	1283	1497	1711
	Static Pressure [exhaust]	-0.030	-0.067	-0.119	-0.186	-0.267	-0.365	-0.475
	NC [exhaust]	<15	23	32	39	45	50	54
	Static Pressure [supply]	0.009	0.021	0.036	0.055	0.083	0.111	0.145
	NC [supply]	<15	<15	18	25	31	37	41
	Projection [supply]	8-18-37	14-28-47	18-38-55	23-44-61	30-48-70	34-52-74	38-56-83
16	cfm	559	838	1117	1396	1676	1955	2234
	Static Pressure [exhaust]	-0.029	-0.065	-0.116	-0.181	-0.260	-0.354	-0.465
	NC [exhaust]	<15	23	33	40	45	50	54
	Static Pressure [supply]	0.009	0.020	0.034	0.055	0.078	0.106	0.138
	NC [supply]	<15	<15	18	25	31	37	41
	Projection [supply]	10-20-40	15-30-53	22-44-65	28-50-72	34-54-80	40-60-85	45-64-90
18	cfm	707	1060	1414	1767	2121	2474	2828
	Static Pressure [exhaust]	-0.028	-0.064	-0.114	-0.177	-0.255	-0.346	-0.454
	NC [exhaust]	<15	23	33	40	45	50	54
	Static Pressure [supply]	0.008	0.020	0.033	0.052	0.075	0.103	0.133
	NC [supply]	<15	<15	19	26	32	38	42
	Projection [supply]	11-22-44	18-36-61	25-50-72	31-57-80	40-63-89	45-67-95	50-71-101
20	cfm	873	1309	1746	2182	2618	3055	3491
	Static Pressure [exhaust]	-0.028	-0.063	-0.111	-0.174	-0.250	-0.342	-0.446
	NC [exhaust]	<15	25	35	41	47	52	56
	Static Pressure [supply]	0.008	0.019	0.033	0.051	0.073	0.099	0.128
	NC [supply]	<15	<15	19	26	32	38	42
	Projection [supply]	12-24-49	20-40-68	27-53-80	35-63-89	44-68-99	51-74-105	56-78-112
22	cfm	1056	1584	2112	2640	3168	3696	4224
	Static Pressure [exhaust]	-0.027	-0.061	-0.110	-0.171	-0.246	-0.336	-0.439
	NC [exhaust]	<15	25	35	41	47	52	56
	Static Pressure [supply]	0.008	0.018	0.031	0.049	0.070	0.096	0.125
	NC [supply]	<15	<15	20	27	33	39	43
	Projection [supply]	13-27-54	22-44-74	30-57-85	37-68-98	47-76-110	57-85-120	60-87-123
24	cfm	1257	1885	2514	3142	3770	4399	5027
	Static Pressure [exhaust]	-0.027	-0.061	-0.108	-0.170	-0.244	-0.331	-0.435
	NC [exhaust]	<15	25	35	41	47	52	56
	Static Pressure [supply]	0.008	0.018	0.031	0.049	0.070	0.094	0.123
	NC [supply]	<15	<15	21	28	35	40	44
	Projection [supply]	14-29-60	24-48-81	33-66-95	41-75-106	50-84-116	58-88-124	66-95-130

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Projection: Projection distance [THROW] in feet from the Nozzle discharge at which the maximum velocity has been reduced to specified terminal velocity [Vt].
3. Terminal Velocity: Maximum velocity [Vt] in feet per minute at the specified distance from the outlet face [THROW] 200 fpm, 100fpm and 50 fpm respectively.
4. Air flow cfm: Based on standard air density and isothermal conditions.
5. Static Pressure: in. w.g. required.
6. Noise Criteria: Noise criteria [NC] curve which is not exceeded with a Room Attnuation of 10db and based on Sound Power Level Re: 10^{-12} watts.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Price Round Perforated series Grille (RPG) is designed for use in commercial and industrial applications as an exhaust, return or supply grille. The RPG series is offered in aluminum construction and in a wide selection of sizes ranging from 4 in. to 16 in. All sizes are available with two attractive frame / panel styles for ceiling or wall mount and a round duct frame for mounting on exposed duct work.

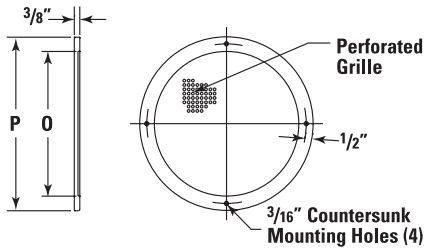
Features

- Aluminum construction
- 3 attractive frames to choose from
- Wall, ceiling or exposed duct mount
- Can be used as supply, return or exhaust grille
- Offered in 4 in., 5 in., 6 in., 8 in., 10 in., 12 in., 14 in. and 16 in. sizes.

RPG with Exposed Duct Frame

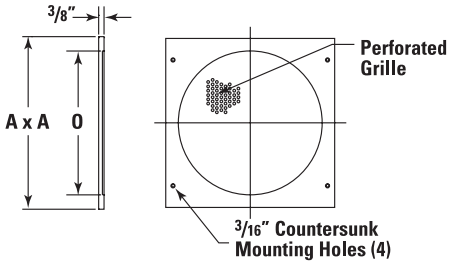
RPG with Wall / Ceiling Mount Frame

RPG - Wall / Ceiling Mount (SM Frame)



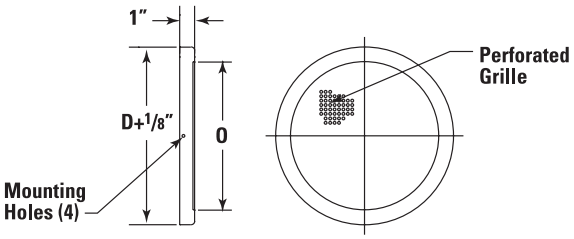
Opening Size O	Duct Size D	Panel Size P
4	4	6
5	5	8
6	6	8
8	8	10
10	10	12
12	12	14
14	14	16
16	16	18

RPG - Wall / Ceiling Mount (SMP Frame)



Opening Size O	Duct Size DxD	Panel Size AxA
4	4x4	6x6
5	5x5	8x8
6	6x6	8x8
8	8x8	10x10
10	10x10	12x12
12	12x12	14x14
14	14x14	16x16
16	16x16	18x18

RPG - Exposed Round Duct (RD Frame)



Opening Size O	Duct Size D
4	6
5	6
6	8
8	10
10	12
12	14
14	16
16	18

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Exhaust Air Flow Data

Size	Opening Size Diameter "O"	Opening Area	Opening Velocity Static Pressure	400 -0.05	500 -0.08	600 -0.12	700 -0.16	800 -0.21	1000 -0.32	1200 -0.48
4	4	0.087	cfm	35	44	52	61	70	87	105
			NC	--	--	--	--	22	28	34
5	5	0.136	cfm	55	68	82	95	109	136	164
			NC	--	--	--	21	24	30	36
6	6	0.196	cfm	79	98	118	137	157	196	236
			NC	--	--	--	23	26	32	38
8	8	0.349	cfm	140	175	209	244	279	349	419
			NC	--	--	20	25	28	34	40
10	10	0.545	cfm	218	273	327	382	436	545	655
			NC	--	--	23	27	30	36	42
12	12	0.786	cfm	314	393	471	550	628	786	943
			NC	--	--	24	29	32	38	44
14	14	1.069	cfm	428	535	641	748	855	1069	1283
			NC	--	20	25	30	33	39	45
16	16	1.396	cfm	559	698	838	978	1117	1396	1676
			NC	--	21	26	31	34	40	46

Performance Data - Supply Air Flow Data

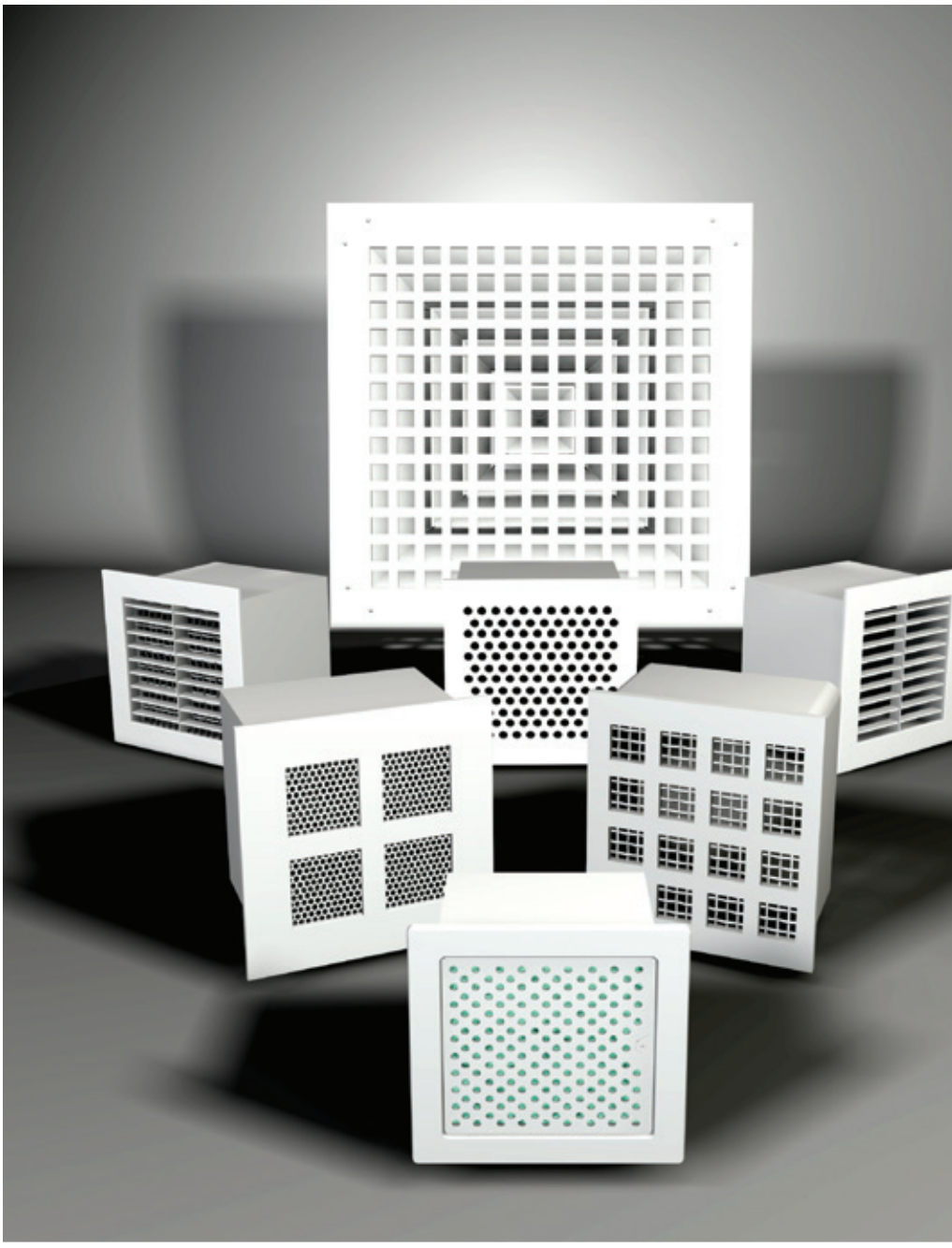
Size	Opening Size Diameter "O"	Opening Area	Opening Velocity Static Pressure	400 0.06	500 0.09	600 0.13	700 0.17	800 0.22	1000 0.35	1200 0.50
4	4	0.087	cfm	35	44	52	61	70	87	105
			NC	--	--	--	--	--	23	28
			Projection	2-4-8	3-6-10	4-8-13	4-10-14	5-11-16	7-12-16	8-13-19
5	5	0.136	cfm	55	68	82	95	109	136	164
			NC	--	--	--	--	--	25	30
			Projection	3-6-11	4-9-14	5-10-15	6-12-17	7-14-19	8-15-21	10-17-24
6	6	0.196	cfm	79	98	118	137	157	196	236
			NC	--	--	--	--	20	27	32
			Projection	4-9-13	5-11-16	6-13-18	8-15-20	9-16-23	10-18-26	12-21-29
8	8	0.349	cfm	140	175	209	244	279	349	419
			NC	--	--	--	--	22	29	34
			Projection	5-11-19	7-13-21	8-15-24	10-19-26	11-22-30	14-25-34	
10	10	0.545	cfm	218	273	327	382	436	545	655
			NC	--	--	--	20	24	31	36
			Projection	6-12-22	9-16-29	11-20-32	12-24-35	13-27-38	17-31-43	20-34-48
12	12	0.786	cfm	314	393	471	550	628	786	943
			NC	--	--	--	22	26	33	37
			Projection	7-14-28	10-19-33	12-24-36	14-27-39	18-31-45	20-34-48	24-40-55
14	14	1.069	cfm	428	535	641	748	855	1069	1283
			NC	--	--	--	24	28	34	39
			Projection	8-17-33	12-22-37	15-28-44	16-32-48	18-37-56	23-42-60	28-45-62
16	16	1.396	cfm	559	698	838	978	1117	1396	1676
			NC	--	--	20	25	29	35	40
			Projection	9-20-38	14-28-46	17-32-52	20-37-58	23-40-62	27-45-65	30-50-70

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Projection: Projection distance [THROW] in feet from the Nozzle discharge at which the maximum velocity has been reduced to specified terminal velocity [Vt].
3. Terminal Velocity: Maximum velocity [Vt] in feet per minute at the specified distance from the outlet face [THROW] 200 fpm, 100fpm and 50 fpm respectively.
4. Air flow cfm: Based on standard air density and isothermal conditions.
5. Static Pressure: in. w.g. required.
6. Noise Criteria: Noise criteria [NC] curve which is not exceeded with a Room Attnuation of 10db and based on Sound Power Level Re: 10^{-12} watts.
7. Blanks (--) indicate an NC value less than 15.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

SECTION **D**



Security Products

Application Guidelines

Overview

This section presents a full range of security products. The performance objective of a security grille is to provide an air pattern in the occupied space that is conducive to providing occupant comfort. It must achieve this while preventing the storage of contriband in the ventilation system, as well as access to ductwork, which is a means to injuring their own person or others. Many models have been developed in response to specific air distribution and security requirements. The application guidelines contained in this section are based on industry practices, laboratory test results and field experience.

While designed for correctional facilities, these products are also excellent choices for rest stops, park facilities, schools, or sports venues where supervision is minimal and vandalism is a risk.

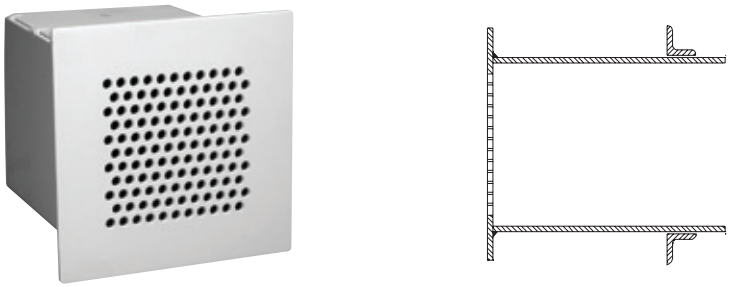
Maximum Security Perforated Face Grilles

The MSPG is one of the more popular styles of security products. It possesses a high effective free area while restricting storage of contraband by use of 5/16 in. holes. The grille utilizes a 3/16 in. thick faceplate to prevent damage to the occupied side. The back of this faceplate is welded to a steel sleeve that can be ordered according to the wall thickness and is fixed by use of a steel angle on the secured side. The MSPG can be ordered in a number of construction levels that include material choices, perforation sizes, fastening methods, and barrier bars. The MSPG is useful where maximum security and minimum supervision is required such as cells and isolated areas.

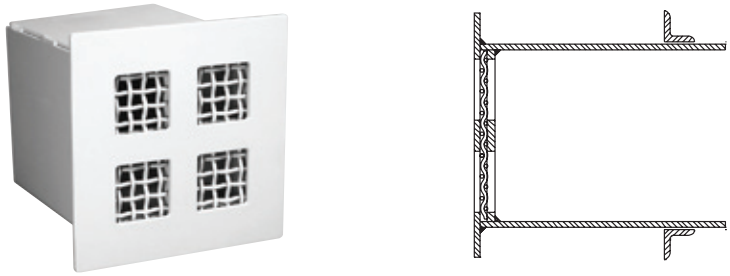
Maximum Security 3 Tier Lattice Face Grilles

Price MSLG provides 3 tier steel construction for maximum opposition against penetration. The faceplate is constructed of one layer of 3/16 in. hot rolled steel with a 1/4 in. hot rolled steel backer plate. These plates are manufactured with 2 in. square openings for air distribution. Sandwiched between the two plates is a 10 gauge x 3/8 in. wire mesh to counter the insertion of articles into the duct. The wall sleeve is standard with the MSLG and can be ordered with bent out rear flanges for poured in wall construction. Other gauges of materials, hardened steel, and various hole sizes make the 3 tier lattice face grilles a flexible choice for maximum security design with construction as per ASTM standards. MSLG grilles are an excellent choice where occupant access to the air outlet is long term and unrestricted, such as in cells.

MSPG



MSLG



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Maximum Security 3 Tier Lattice/ Perforated Face Grilles

Price MSLGP provides three tiers of steel construction for maximum opposition against penetration. The faceplate is constructed of one layer of 3/16 in. hot rolled steel with 2 in. square openings for air distribution and one layer 12 gauge hot rolled steel with 3/16 in. holes. A second plate of perforated hot rolled steel is set 1 in. deep in the sleeve and is set at an offset so visual and insertion lines are obstructed. The wall sleeve is standard with the MSLGP. MSLPG grilles are an excellent choice where occupant access to the air outlet is long term and unrestricted, such as in cells.

Minimum Security Lattice Face Grilles

The Price MSL is an economical way to provide air distribution in minimum security areas where access to the ductwork must be restricted. The MSL is constructed of 14 gauge hot rolled steel and 3/4 in. square holes. The wall sleeve is an integral part of the product and moves the fastening to the protected side of the wall. Screens, dampers, and barrier bars can be added as options. These units can also be ordered as a transfer grille with a face on both ends of the sleeve for poured in place construction. MSL can be used in cafeterias, corridors, and common areas in secured institutions without the risk of disassembly and damage associated with a blade type grille.

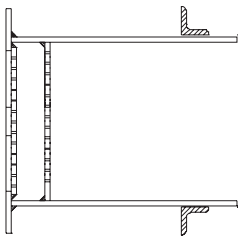
Minimum Security Lattice Faceplates

MSLP Lattice faceplate security grilles can be used wherever additional security is required. The MSLP can be used to substitute conventional double deflection grilles for supply and return or if the situation requires a directional air pattern, can be installed over the existing grille. With the 13/16 in. square holes, the lattice faceplate prevents access to ductwork and other mechanical systems. 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.

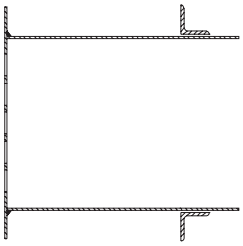
Medium Security Screened Face Grilles with Barrier Bars

The Price MSSG Series is a screen face grille ideal for minimum to medium security areas where high volume is required, such as dining areas, corridors, or exercise facilities. The 10 gauge x 3/8 in. mesh is held in place by steel angles that are welded to the sleeve, which contains 3/4 in. barrier bars.

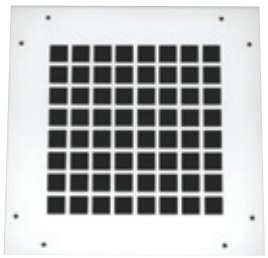
MSLGP



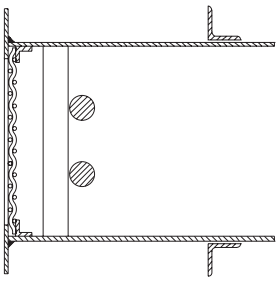
MSL



MSLP



MSSG



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Medium Security Straight Louver Grilles

For a straight directional air flow in medium security applications, Price offers the MSSL Fixed Louver Grille. This unit features all-welded construction with 1/8 in. thick louvers set in 14 gauge vertical supports. A screen set behind the louver blades provides additional security. The sleeve can be ordered with either the angle for field welding or bent out flanges for pour in place construction. The MSSL can be used in holding cells, psychiatric facilities, and common areas.

Medium Security Bent Louvered Grilles

Price MSBL bent louver security grilles combine strength and safety with reduced see-through and pleasing appearance. The bent louvers are set at a 45 degree deflection and are supported by a 14 gauge interlocking support. A wire mesh is set behind the blade for increased duct security. The fine visual appearance of the MSBL makes it an excellent choice for interview offices, dormitories, locker rooms, and schools.

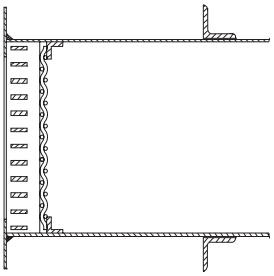
Maximum Security Grille with Steel Rod

Price MSGS steel security grilles are engineered for use in maximum security applications and offer the appearance and performance of a linear bar diffuser. The linear bars are available with a 0° or 15° deflection and are locked in place with hardened steel rods to resist cutting. The MSGS can be mounted with either a wall sleeve and rear angle combination or a cast in place masonry frame. This grille can be used in any maximum security environment, such as a cell or any other secure area where a deflection is required for supply air.

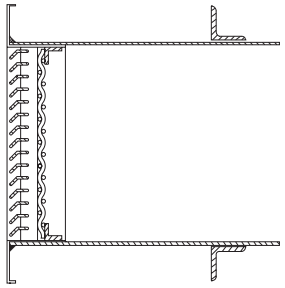
Minimum Security Lattice Face Diffusers

For minimum security areas where overhead air distribution is required, MSD Series combines the protection of a lattice faceplate with the high performance of the Price SMD directional diffuser. The lattice face protects the pattern controllers of the grille from bending and removal, as well as prevents access to the ductwork. The MSD can be ordered with a variety of air pattern settings to suit the layout of the space. The MSD is mounted using either security screws or the optional rear angle frame with tamperproof bolts. The MSD is an excellent choice for overhead air distribution in mental health facilities, offices, infirmaries, and public areas.

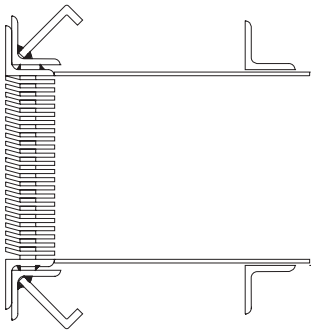
MSSL



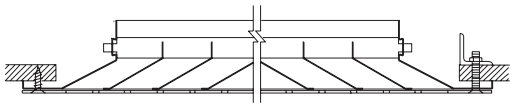
MSBL



MSGS



MSD



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Maximum Security Bar Grilles Duct / Barrier Grilles

Where openings between secure and non-secured areas require restriction, Price MSBG Duct / Barrier grilles reduce the maximum single opening to 6 in. x 12 in. by use of ½ in. steel or stainless steel round bars. The MSBG is mounted to the wall using a welded frame with optional mounting flanges. Wire mesh can also be specified to further reduce the opening size.

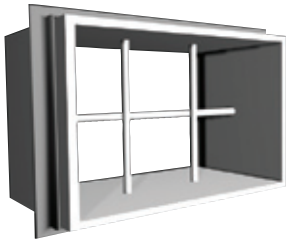
MSDRBG / MSTRBG Maximum Security Double Ribbed Bar Grille

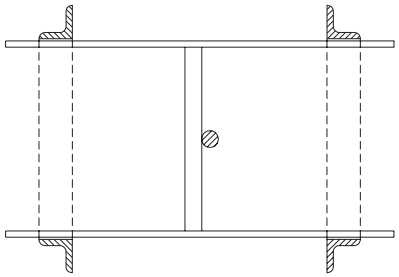
Where openings between secure and non-secured areas require restriction, Price MSDRBG / MSTRBG Duct/Barrier grilles reduce the maximum single opening to 5 in. x 12 in. by use of 7/8 in. 1065 steel grade double ribbed bars. The duct barrier grille is mounted to the wall using a welded frame with optional mounting flanges.

MSRRG Maximum Security Risk Resistant Grilles

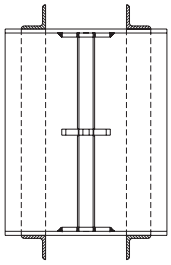
The Price MSRRG Series Risk Resistant Grille is an excellent choice for the maximum security application where the potential for suicide is a concern. The non-vision core inhibits the use of threaded hanging devices or storage of contraband while still providing air distribution. For correctional institutions there is great expense incurred through legal and medical expenses when an inmate dies or is injured in a suicide attempt. In mental health facilities, patients may injure themselves through their own confusion and depression. Wherever these conditions may exist, MSRRG should be applied.

MSBG

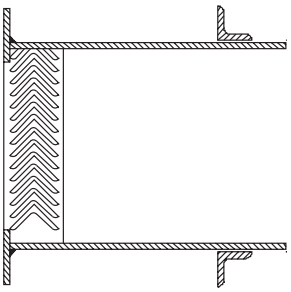




MSDRBG /MSTRBG



MSRRG



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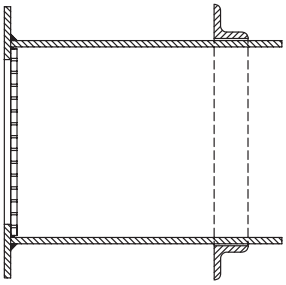
Maximum Security Risk Resistant Perforated Grilles

The Price MSRRP Series is another choice for risk resistant air distribution.The perforated face is designed to resist the threading of hanging devices. The small perforations limit the size of objects that can be hooked through the face.The MSRRP is an excellent alternative to MSRRG when perpendicular air distribution is required. This grille is an economical alternative that can supply higher air volumes than the MSRRG.

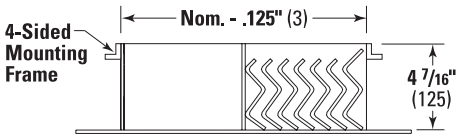
Maximum Security Risk Resistant Ceiling Diffusers

The Price MSRRCD series features a suicide inhibiting core that uses a unique w-shaped blade. The MSRRCD impedes efforts of threading while providing effective air distribution in a variety of blow patterns.

MSRRP



MSRRCD



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MSPG Series

Product Information

Model

Perforated Face **MSPG**

Price MSPG Series perforated face steel maximum security grilles present an impregnable barrier to ductwork behind the grille. Features all-welded construction and integral wall sleeves for one of the industry's most popular grilles.

Construction

- **Faceplate:** 3/16 in. [5] hot rolled steel with 5/16 in. [8] diameter holes staggered 60° on 7/16 in. [11] centers. Optional Thickness: 1/4 in. [6], 10 gauge or 12 gauge hot rolled steel available. For optional faceplate patterns, see page D186.
- **Sleeve:** 3/16 in. [5] hot rolled steel, length as required, stitch welded seams. Optional Thickness: 1/4 in. [6], 10 gauge or 12 gauge hot rolled steel. Additional options include continuously welded seams and bent out rear flange (see option S5, page D188).
- **4 Sided Mounting Frame:** 1 in. x 1 in. x 3/16 in. [25 x 25 x 5] hot rolled steel angle frame shipped loose for field welding. For optional mounting frames (Options MF2, MF3, MF4) see page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Material: All-aluminum (minimum security), or all 304 stainless steel. Only available in 10 gauge construction.

Fastening Methods: Options MR6, MR7, CS (see page D188).

Dampers: Options 3BF, 3BR (see page D188).

Barrier Bars: Options BB16, BB17, BB18, BB19, BB20, BB21, BB22, and BB23 (see page D189).

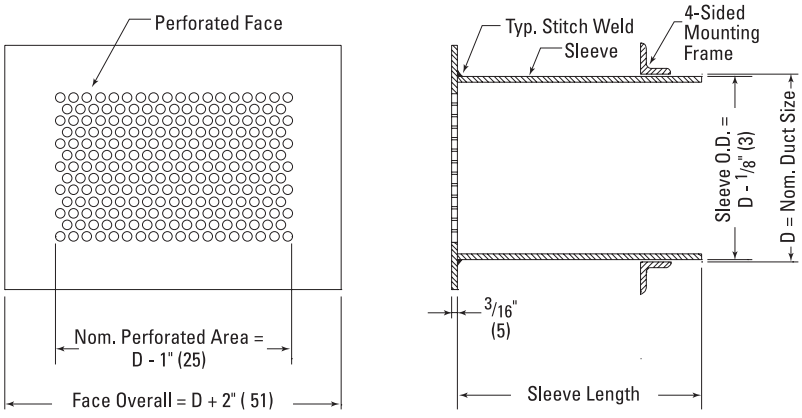
Wire Mesh: Option WM (see page D188).

Transfer Grille Construction: Option TG14, TG15 (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
4] Specify Wall Thickness.
5] Select Finish.

Example: 12 x 12 / MSPG / 22 / 8 in. / B12

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Performance Data - Supply

	Neck Velocity	100	200	300	400	500	600	700	800	900
	Velocity Pressure	**0.001**	**0.002**	**0.006**	**0.010**	**0.016**	**0.022**	**0.031**	**0.040**	**0.050**
	Total Pressure	**0.005**	**0.020**	**0.046**	**0.081**	**0.127**	**0.182**	**0.248**	**0.324**	**0.410**
6 x 6	**cfm**	**25**	**50**	**75**	**100**	**125**	**150**	**175**	**200**	**225**
	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
	Total Pressure	**0.004**	**0.016**	**0.036**	**0.064**	**0.100**	**0.144**	**0.196**	**0.256**	**0.324**
8 x 8	**cfm**	**44**	**89**	**133**	**178**	**222**	**267**	**311**	**356**	**400**
	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
	Total Pressure	**0.003**	**0.013**	**0.030**	**0.053**	**0.083**	**0.120**	**0.163**	**0.213**	**0.270**
10 x 10	**cfm**	**69**	**139**	**208**	**278**	**347**	**417**	**486**	**556**	**625**
	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
	Total Pressure	**0.003**	**0.011**	**0.026**	**0.046**	**0.072**	**0.103**	**0.141**	**0.184**	**0.232**
12 x 12	**cfm**	**100**	**200**	**300**	**400**	**500**	**600**	**700**	**800**	**900**
	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
	Total Pressure	**0.003**	**0.010**	**0.023**	**0.040**	**0.063**	**0.091**	**0.124**	**0.162**	**0.205**
14 x 14	**cfm**	**136**	**272**	**408**	**544**	**681**	**817**	**953**	**1089**	**1225**
	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
	Total Pressure	**0.002**	**0.009**	**0.020**	**0.036**	**0.057**	**0.082**	**0.111**	**0.145**	**0.183**
16 x 16	**cfm**	**178**	**356**	**533**	**711**	**889**	**1067**	**1244**	**1422**	**1600**
	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
	Total Pressure	**0.002**	**0.008**	**0.019**	**0.033**	**0.051**	**0.074**	**0.101**	**0.132**	**0.167**
18 x 18	**cfm**	**225**	**450**	**675**	**900**	**1125**	**1350**	**1575**	**1800**	**2025**
	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
	Total Pressure	**0.002**	**0.008**	**0.017**	**0.030**	**0.047**	**0.068**	**0.092**	**0.121**	**0.153**
20 x 20	**cfm**	**278**	**556**	**833**	**1111**	**1389**	**1667**	**1944**	**2222**	**2500**
	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
	Total Pressure	**0.002**	**0.007**	**0.016**	**0.028**	**0.044**	**0.063**	**0.085**	**0.112**	**0.141**
22 x 22	**cfm**	**336**	**672**	**1008**	**1344**	**1681**	**2017**	**2353**	**2689**	**3025**
	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
	Total Pressure	**0.002**	**0.006**	**0.015**	**0.026**	**0.041**	**0.058**	**0.080**	**0.104**	**0.132**
24 x 24	**cfm**	**400**	**800**	**1200**	**1600**	**2000**	**2400**	**2800**	**3200**	**3600**
	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
	Total Pressure	**0.002**	**0.006**	**0.014**	**0.024**	**0.038**	**0.055**	**0.075**	**0.097**	**0.123**
26 x 26	**cfm**	**469**	**939**	**1408**	**1878**	**2347**	**2817**	**3286**	**3756**	**4225**
	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
	Total Pressure	**0.001**	**0.006**	**0.013**	**0.023**	**0.036**	**0.052**	**0.070**	**0.092**	**0.116**
28 x 28	**cfm**	**544**	**1089**	**1633**	**2178**	**2722**	**3267**	**3811**	**4356**	**4900**
	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
	Total Pressure	**0.001**	**0.005**	**0.012**	**0.022**	**0.034**	**0.049**	**0.066**	**0.087**	**0.110**
30 x 30	**cfm**	**625**	**1250**	**1875**	**2500**	**3125**	**3750**	**4375**	**5000**	**5625**
	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.

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Performance Data - Return

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

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.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Maximum Security 3 Tier Lattice Face Grilles
MSLG Series

Product Information

Model

3Tier Lattice Face **MSLG**

Price MSLG Series 3 tier steel maximum security grilles feature all-welded construction and integral wall sleeves for one of the industry's most popular grilles. Construction per ASTM standards.

Construction

- **Faceplate:** 3/16 in. [5] hot rolled steel with 2 in. [51] square holes and 1 in. [25] fret. Optional Thickness: 1/4 in. [6], 10 gauge or 12 gauge hot rolled steel available. For optional faceplate patterns, see page D186.
- **Backer Plate:** 1/4 in. [6] hot rolled steel with matching faceplate pattern. Optional Thickness: 3/16 in. [5], 10 gauge, 12 gauge hot rolled steel, or hardened steel available.
- **Wire Mesh Barrier Bar:** 10 gauge x 3/8 in. [10] clear opening steel wire mesh sandwiched between faceplate and backer plate.
- **Sleeve:** 3/16 in. [5] hot rolled steel, length as required, stitch welded seams. Optional Thickness: 1/4 in. [6], 10 gauge, 12 gauge hot rolled steel available. Additional options include continuously welded seams and bent out rear flange (see option S5, page D188).
- **4 Sided Mounting Frame:** 1 in. x 1 in. x 3/16 in. [25 x 25 x 5] hot rolled steel angle frame shipped loose for field welding. For optional mounting frames see Options MF2, MF3, MF4 on page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Material: All-aluminum (minimum security), or all 304 stainless steel construction.

Fastening Methods: Options MR6, MR7, CS (see page D188).

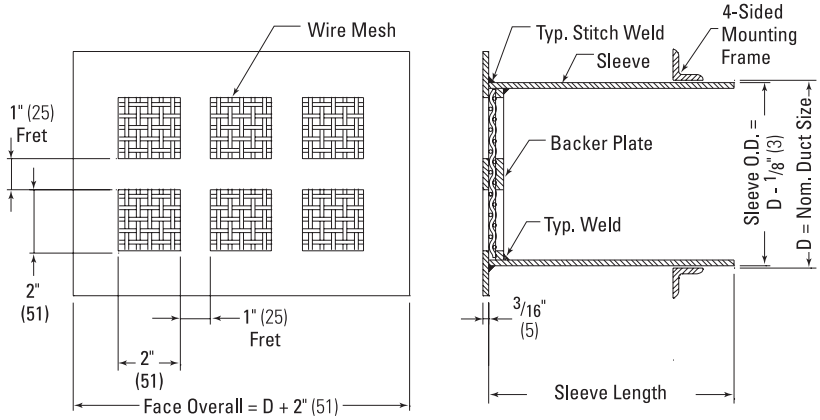
Dampers: Options 3BF, 3BR, (see page D188).

Barrier Bars: Options BB16, BB17, BB18, BB19, BB20, BB21, BB22, BB23 (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
5] Specify Wall Thickness.
6] Select Finish.

Example: 12 x 12 / MSLG / Option 12 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Neck Velocity / Velocity Pressure / Total Pressure	50 / 0.000 / 0.002	100 / 0.001 / 0.009	150 / 0.001 / 0.020	200 / 0.002 / 0.035	250 / 0.004 / 0.055	300 / 0.006 / 0.079	350 / 0.008 / 0.107	400 / 0.010 / 0.140	450 / 0.013 / 0.177	500 / 0.016 / 0.218
6 x 6	cfm	13	25	38	50	63	75	88	100	113	125
	NC	–	–	–	–	–	19	24	29	33	37
	Throw,ft	1-1-6	3-6-9	6-8-11	8-9-13	8-10-15	9-11-16	10-12-17	11-13-18	11-14-20	12-15-21
8 x 8	cfm	22	44	67	89	111	133	156	178	200	222
	NC	–	–	–	–	–	21	26	31	35	39
	Throw,ft	1-2-8	4-8-12	8-11-15	10-12-17	11-14-19	12-15-21	13-16-23	14-17-25	15-18-26	16-19-27
10 x 10	cfm	35	69	104	139	174	208	243	278	313	347
	NC	–	–	–	–	16	22	28	33	37	41
	Throw,ft	1-3-10	5-10-15	10-13-19	13-15-22	14-17-24	15-19-27	17-20-29	18-22-31	19-23-33	20-24-34
12 x 12	cfm	50	100	150	200	250	300	350	400	450	500
	NC	–	–	–	–	17	24	29	34	38	42
	Throw,ft	1-3-12	6-12-18	12-16-23	15-18-26	17-21-29	18-23-32	20-24-34	21-26-37	23-28-39	24-29-41
14 x 14	cfm	68	136	204	272	340	408	476	544	613	681
	NC	–	–	–	–	18	25	30	35	39	43
	Throw,ft	2-4-14	7-14-21	14-19-26	18-21-30	20-24-34	21-26-37	23-28-40	25-30-43	26-32-46	28-34-48
16 x 16	cfm	89	178	267	356	444	533	622	711	800	889
	NC	–	–	–	–	19	26	31	36	40	44
	Throw,ft	2-4-16	8-16-25	16-21-30	20-25-35	22-27-39	25-30-42	26-32-46	28-35-49	30-37-52	32-39-55
18 x 18	cfm	113	225	338	450	563	675	788	900	1013	1125
	NC	–	–	–	–	20	26	32	37	41	45
	Throw,ft	2-5-18	9-18-28	18-24-34	23-28-39	25-31-44	28-34-48	30-36-52	32-39-55	34-41-59	36-44-62
20 x 20	cfm	139	278	417	556	694	833	972	1111	1250	1389
	NC	–	–	–	–	21	27	33	38	42	46
	Throw,ft	2-5-20	10-20-31	20-27-38	25-31-43	28-34-48	31-38-53	33-41-57	35-43-61	38-46-65	40-48-69
22 x 22	cfm	168	336	504	672	840	1008	1176	1344	1513	1681
	NC	–	–	–	–	21	28	33	38	42	46
	Throw,ft	3-6-22	11-22-34	22-29-41	28-34-48	31-38-53	34-41-58	36-45-63	39-48-67	41-51-72	44-53-75
24 x 24	cfm	200	400	600	800	1000	1200	1400	1600	1800	2000
	NC	–	–	–	–	22	28	34	39	43	47
	Throw,ft	3-7-24	12-24-37	24-32-45	30-37-52	34-41-58	37-45-64	40-49-69	42-52-74	45-55-78	**47-58-82**
26 x 26	cfm	235	469	704	939	1174	1408	1643	1878	2113	2347
	NC	–	–	–	–	22	29	35	39	44	47
	Throw,ft	3-7-26	13-26-40	26-34-49	33-40-56	36-45-63	40-49-69	43-53-75	46-56-80	49-60-85	51-63-89
28 x 28	cfm	272	544	817	1089	1361	1633	1906	2178	2450	2722
	NC	–	–	–	–	23	29	35	40	44	48
	Throw,ft	4-8-28	14-28-43	28-37-53	35-43-61	39-48-68	43-53-74	46-57-80	50-61-86	53-64-91	55-68-96
30 x 30	cfm	313	625	938	1250	1563	1875	2188	2500	2813	3125
	NC	–	–	–	15	23	30	36	40	45	48
	Throw,ft	4-9-30	15-30-46	30-40-56	38-46-65	42-51-73	46-56-80	50-61-86	53-65-92	56-69-98	59-73-103

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 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.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Maximum Security 3 Tier Lattice / Perforated Face Grilles
MSLGP Series

Product Information

Model

3Tier Lattice / Perforated Face **MSLGP**

Price MSLGP Series 3 tier steel security grilles feature all-welded construction and integral wall sleeves for maximum security sidewall applications.

Construction

- **Faceplate:** 3/16 in. [5] hot rolled steel with 2 in. [51] square holes and 1 in. [25] fret. 12 gauge hot rolled steel perforated plate with 3/16 in. [5] diameter holes continuously welded to lattice face.
- **Backer Plate:** 12 gauge hot rolled steel perforated plate with 3/16 in. [5] diameter holes continuously welded to sleeve 1 in. from faceplate. Hole pattern of backer plate is offset to obstruct visual and insertion lines.
- **Sleeve:** 3/16 in. [5] hot rolled steel, length as required, continuously welded seams.
- **4 Sided Mounting Frame:** 1 in. x 1 in. x 3/16 in. [25 x 25 x 5] hot rolled steel angle frame shipped loose for field welding.

Finish

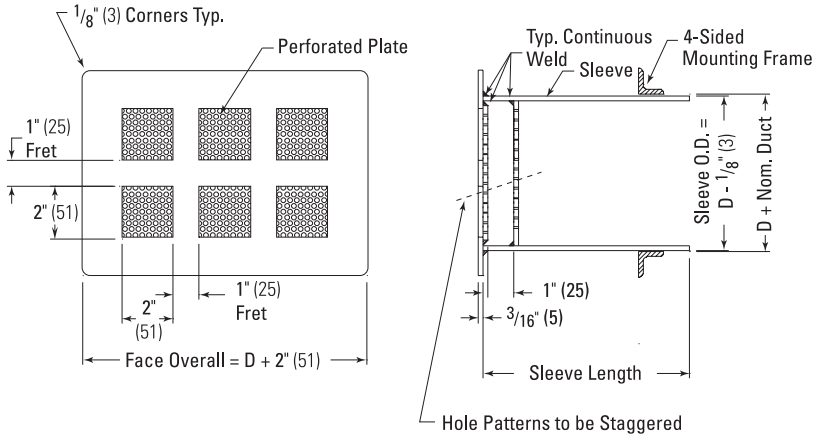
White Powder Coat **B12**

For optional and special finishes see color matrix.

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
4] Specify Wall Thickness.
5] Select Finish.

Example: 12 x 12 / MSLGP / Option 12 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Neck Velocity	100	150	200	250	300	350	400	450
	Velocity Pressure	0.001	0.001	0.002	0.004	0.006	0.008	0.010	0.013
	Total Pressure	0.027	0.062	0.110	0.171	0.247	0.336	0.439	0.555
6 x 6	cfm	25	38	50	63	75	88	100	113
	NC	–	–	19	24	29	33	36	39
	Throw,ft	2-4-8	4-6-10	5-8-12	7-9-13	8-10-15	9-11-16	10-12-17	10-13-18
8 x 8	cfm	44	67	89	111	133	156	178	200
	NC	–	15	22	28	32	36	39	42
	Throw,ft	2-5-11	5-8-14	7-11-16	9-13-18	11-14-20	12-15-21	13-16-23	14-17-24
10 x 10	cfm	69	104	139	174	208	243	278	313
	NC	–	18	25	30	35	39	42	45
	Throw,ft	3-7-14	7-10-17	9-14-20	11-16-22	14-17-24	15-19-26	16-20-28	17-21-30
12 x 12	cfm	100	150	200	250	300	350	400	450
	NC	–	20	27	33	37	41	44	47
	Throw,ft	4-8-16	8-12-21	11-16-24	14-19-27	16-21-29	18-22-32	20-24-34	21-25-36
14 x 14	cfm	136	204	272	340	408	476	544	613
	NC	–	22	29	35	39	43	46	49
	Throw,ft	4-9-19	9-14-24	13-19-28	16-22-31	19-24-34	21-26-37	23-28-40	24-30-42
16 x 16	cfm	178	267	356	444	533	622	711	800
	NC	–	24	31	36	41	45	48	51
	Throw,ft	5-11-22	11-16-28	15-22-32	18-25-36	22-28-39	24-30-42	26-32-45	28-34-48
18 x 18	cfm	225	338	450	563	675	788	900	1013
	NC	–	25	32	38	42	46	49	52
	Throw,ft	5-12-24	12-18-31	16-24-36	20-28-40	24-31-44	27-34-48	29-36-51	31-38-54
20 x 20	cfm	278	417	556	694	833	972	1111	1250
	NC	16	26	33	39	43	47	51	53
	Throw,ft	6-13-27	13-20-35	18-27-40	23-32-45	27-35-49	31-37-53	33-40-57	35-42-60
22 x 22	cfm	336	504	672	840	1008	1176	1344	1513
	NC	17	27	35	40	45	48	52	55
	Throw,ft	6-15-30	15-22-38	20-30-44	25-35-49	30-38-54	34-41-58	36-44-62	38-47-66
24 x 24	cfm	400	600	800	1000	1200	1400	1600	1800
	NC	18	28	36	41	46	49	53	56
	Throw,ft	7-16-33	16-24-42	22-33-48	27-38-54	33-42-59	37-45-63	39-48-68	42-51-72
26 x 26	cfm	469	704	939	1174	1408	1643	1878	2113
	NC	19	29	37	42	47	50	54	57
	Throw,ft	8-17-35	17-27-45	24-35-52	29-41-58	35-45-64	40-49-69	42-52-74	45-55-78
28 x 28	cfm	544	817	1089	1361	1633	1906	2178	2450
	NC	20	30	37	43	47	51	55	58
	Throw,ft	8-18-38	18-29-48	25-38-56	32-44-63	38-48-69	43-52-74	46-56-79	48-59-84
30 x 30	cfm	625	938	1250	1563	1875	2188	2500	2813
	NC	21	31	38	44	48	52	55	58
	Throw,ft	9-20-41	20-31-52	27-41-60	34-47-67	41-52-73	46-56-79	49-60-85	52-64-90

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 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: add 8 to listed NC; multiply listed total pressure by 2.0 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.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Minimum Security Lattice Face Grilles
MSL Series

Product Information

Model

Lattice Face **MSL**

Price MSL Series features all-welded construction and integral wall sleeves with economical lighter gauges for minimum security applications.

Construction

- **Faceplate:** 14 gauge hot rolled steel with 3/4 in. [19] square holes and 1/4 in. [6] fret. Optional Thickness: 3/16 in. [5], 10 gauge or 12 gauge hot rolled steel. For optional faceplate patterns, see page D186. Note: Patterns not available where material thickness exceeds hole size.
- **Sleeve:** 14 gauge hot rolled steel, length as required, stitch welded seams. Optional Thickness: 3/16 in. [5], 10 gauge or 12 gauge hot rolled steel. Additional options include continuously welded seams, and bent out rear flange (see option S5, page D188).
- **4 Sided Mounting Frame:** 1 in. x 1 in. x 1/8 in. [25 x 25 x 3] hot rolled steel angle frame shipped loose for field welding. For optional mounting frames (Options MF1, MF2, MF4) see page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Material: All-aluminum, or all 304 stainless steel. Only available in 10 gauge construction.

Fastening Methods: Options MR6, MR7, CS (see page D188).

Dampers: Options 3BF, 3BR (see page D188).

Barrier Bars: Options BB16, BB17, BB18, BB19, BB20, BB21, BB22, and BB23 (see page D189).

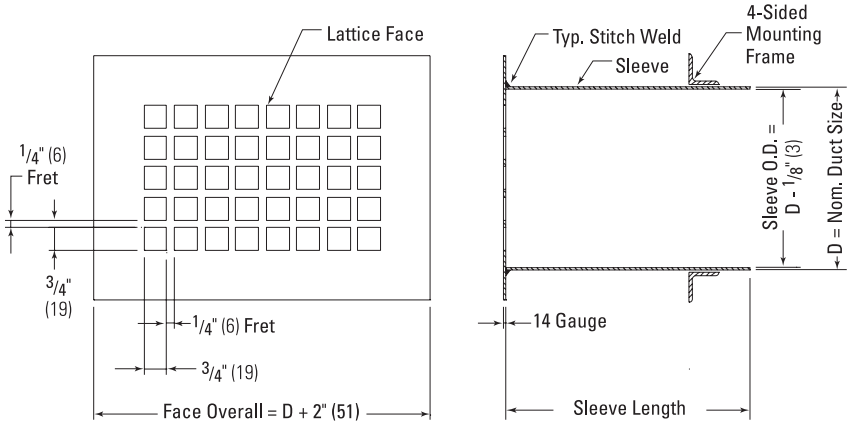
Wire Mesh: Option WM (see page D188).

Transfer Grille Construction: Option TG14, TG15 (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
4] Specify Wall Thickness.
5] Select Finish.

Example: 12 x 12 / MSL / Option 10 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Duct Size	Neck Velocity	300	400	500	600	700	800	900	1000
	Velocity Pressure	0.006	0.010	0.016	0.022	0.031	0.040	0.050	0.062
	Total Pressure	0.030	0.053	0.083	0.119	0.163	0.212	0.269	0.332
	cfm	75	100	125	150	175	200	225	250
6 x 6	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
	cfm	133	178	222	267	311	356	400	444
8 x 8	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
	cfm	208	278	347	417	486	556	625	694
10 x 10	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
	cfm	300	400	500	600	700	800	900	1000
12 x 12	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
	cfm	408	544	681	817	953	1089	1225	1361
14 x 14	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
	cfm	533	711	889	1067	1244	1422	1600	1778
16 x 16	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
	cfm	675	900	1125	1350	1575	1800	2025	2250
18 x 18	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
	cfm	833	1111	1389	1667	1944	2222	2500	2778
20 x 20	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
	cfm	1008	1344	1681	2017	2353	2689	3025	3361
22 x 22	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
	cfm	1200	1600	2000	2400	2800	3200	3600	4000
24 x 24	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
	cfm	1408	1878	2347	2817	3286	3756	4225	4694
26 x 26	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
	cfm	1633	2178	2722	3267	3811	4356	4900	5444
28 x 28	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
	cfm	1875	2500	3125	3750	4375	5000	5625	6250
30 x 30	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:

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 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.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Lattice Faceplates
MSLP Series

Product Information

Model

Minimum Security Lattice Face **MSLP**

Price MSLP Series can be used in any area where additional security is required.

Construction

- **Faceplate:** 14 gauge hot rolled steel with $^{13}/_{16}$ in. [21] square holes and $^{3}/_{16}$ in. [5] fret. Countersunk screw holes are located on the face on maximum 10 in. [254] centers. Unit includes tamperproof screws. Optional Thickness: $^{3}/_{16}$ in. [5], 10 gauge or 12 gauge hot rolled steel. For optional faceplate patterns, see page D186.

Note: Round hole patterns available.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Material: All-aluminum, or all 304 stainless steel. Only available in 10 gauge construction.

Available Sizes

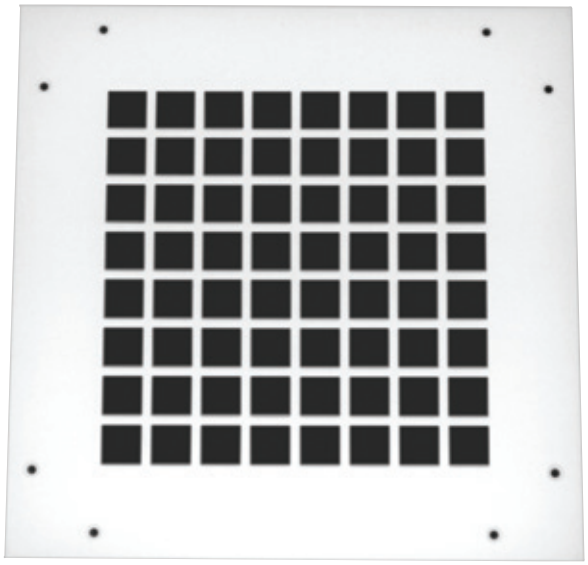
Minimum	Maximum*
8 in. x 8 in. [203 x 203]	**32 in. x 32 in.** [813 x 813]

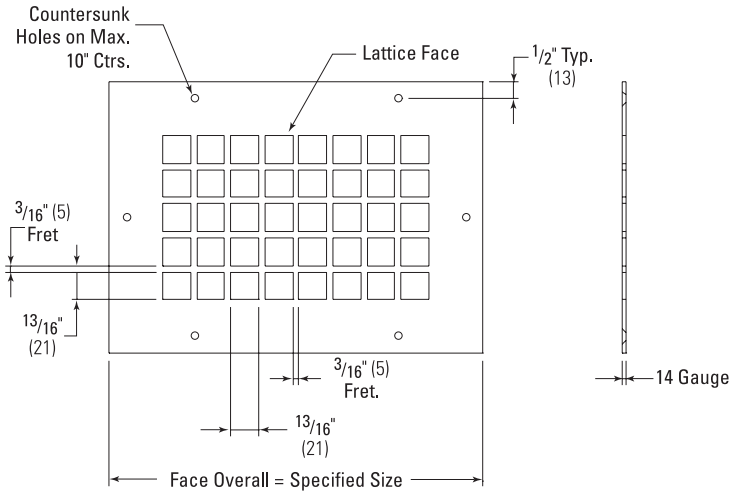
* for oversize grilles see page D189.

This product sized as overall.

MSLP Size	Duct Size
8 in. x 8 in.	6 in. x 6 in.
10 in. x 10 in.	8 in. x 8 in.
12 in. x 12 in.	10 in. x 10 in.
14 in. x 14 in.	12 in. x 12 in.
16 in. x 16 in.	14 in. x 14 in.
18 in. x 18 in.	16 in. x 16 in.
20 in. x 20 in.	18 in. x 18 in.
22 in. x 22 in.	20 in. x 20 in.
24 in. x 24 in.	22 in. x 22 in.
26 in. x 26 in.	24 in. x 24 in.
28 in. x 28 in.	26 in. x 26 in.
30 in. x 30 in.	28 in. x 28 in.
32 in. x 32 in.	30 in. x 30 in.

Performance is based on duct size.





✓ Product Selection Checklist

1] Select Unit Size based on required dimensions.
2] Select Outlet Type by model number.
3] Select Optional Material if required.
4] Select Finish.

Example: 12 x 12 / MSLP / Aluminum / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Medium Security Screened Face Grilles
MSSG Series

Product Information

Model

Screened Face **MSSG**

Price MSSG Series screened face security grilles feature all-welded construction and integral wall sleeves for medium security applications.

Construction

- **Faceplate:** 10 gauge hot rolled steel. Optional Thickness: 3/16 in. [5], 12 gauge or 14 gauge hot rolled steel.
- **Wire Mesh:** 10 gauge x 3/8 in. [10] clear opening steel wire mesh secured by angles behind faceplate.
- **Sleeve:** 10 gauge hot rolled steel, length as required, stitch welded seams. Optional Thickness: 3/16 in. [5], 12 gauge or 14 gauge hot rolled steel. Additional options include continuously welded seams, bent out rear flange (see option S5, page D188).
- **Barrier Bars:** 3/4 in. [19] hot rolled steel bars welded inside sleeve on maximum 6 in. [152] vertical and 12 in. [305] horizontal centers. Bars welded at all crossings. For optional barrier bar styles and sizes, see page D189.
- **4 Sided Mounting Frame:** 1 in. x 1 in. x 1/8 in. [25 x 25 x 3] hot rolled steel angle frame is shipped loose for field welding. For optional mounting frames (Options MF1, MF2, MF4) see page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Material: All-aluminum (minimum security), or all 304 stainless steel. Only available in 10 gauge construction.

Fastening Methods: Options MR6, MR7, CS (see page D188).

Dampers: Options 3BF, 3BR (see page D188).

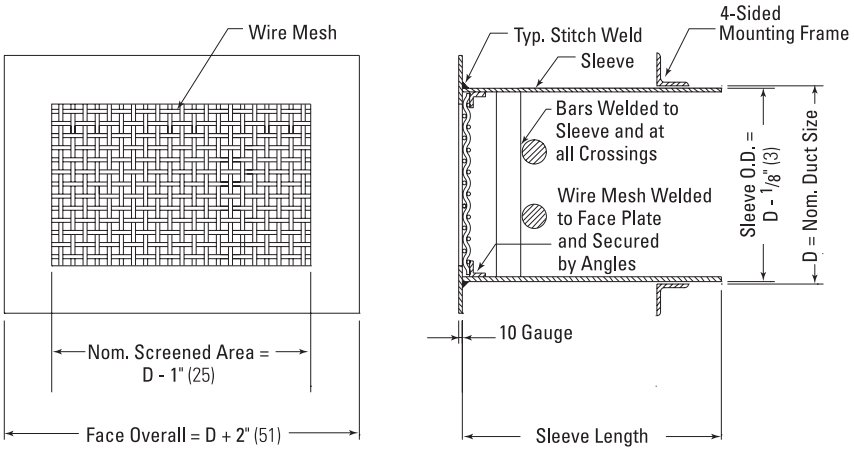
Transfer Grille Construction: Option TG14, TG15 (see page D189).

Barrier Bars: Options BB16, BB18, BB19, BB20, BB21, BB22 and BB23 (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
4] Specify Wall Thickness.
5] Select Finish.

Example: 12 x 12 / MSSG / Option 14 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size		Neck Velocity Velocity Pressure Total Pressure	300 0.006 0.028	400 0.010 0.050	500 0.016 0.078	600 0.022 0.112	700 0.031 0.153	800 0.040 0.200	900 0.050 0.252	1000 0.062 0.312
6 x 6	**cfm**		**75**	**100**	**125**	**150**	**175**	**200**	**225**	**250**
	NC		–	–	–	–	19	23	27	31
	Throw,ft		7-10-16	9-13-18	11-15-21	13-16-23	14-17-24	15-18-26	16-20-28	17-21-29
8 x 8	**cfm**		**133**	**178**	**222**	**267**	**311**	**356**	**400**	**444**
	NC		–	–	–	–	20	25	29	32
	Throw,ft		5-8-15	7-11-17	9-13-19	11-15-21	12-16-22	14-17-24	15-18-25	15-19-27
10 x 10	**cfm**		**208**	**278**	**347**	**417**	**486**	**556**	**625**	**694**
	NC		–	–	–	16	21	26	30	33
	Throw,ft		7-10-18	9-13-21	11-16-24	13-18-26	15-20-28	17-21-30	18-23-32	19-24-34
12 x 12	**cfm**		**300**	**400**	**500**	**600**	**700**	**800**	**900**	**1000**
	NC		–	–	–	17	22	26	30	34
	Throw,ft		8-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	22-27-38	23-28-40
14 x 14	**cfm**		**408**	**544**	**681**	**817**	**953**	**1089**	**1225**	**1361**
	NC		–	–	–	17	23	27	31	35
	Throw,ft		9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	26-32-45	27-33-47
16 x 16	**cfm**		**533**	**711**	**889**	**1067**	**1244**	**1422**	**1600**	**1778**
	NC		–	–	–	18	23	28	32	35
	Throw,ft		11-16-29	14-21-34	18-26-38	21-29-42	25-32-45	28-34-48	29-36-51	31-38-54
18 x 18	**cfm**		**675**	**900**	**1125**	**1350**	**1575**	**1800**	**2025**	**2250**
	NC		–	–	–	18	24	28	32	36
	Throw,ft		12-18-33	16-24-38	20-30-43	24-33-47	28-36-51	31-38-54	33-41-57	35-43-60
20 x 20	**cfm**		**833**	**1111**	**1389**	**1667**	**1944**	**2222**	**2500**	**2778**
	NC		–	–	–	19	24	29	33	36
	Throw,ft		13-20-37	18-26-42	22-33-47	26-37-52	31-40-56	35-42-60	37-45-64	39-47-67
22 x 22	**cfm**		**1008**	**1344**	**1681**	**2017**	**2353**	**2689**	**3025**	**3361**
	NC		–	–	–	19	25	29	33	37
	Throw,ft		14-22-40	19-29-47	24-36-52	29-40-57	34-44-62	38-47-66	40-50-70	43-52-74
24 x 24	**cfm**		**1200**	**1600**	**2000**	**2400**	**2800**	**3200**	**3600**	**4000**
	NC		–	–	–	20	25	29	33	37
	Throw,ft		16-24-44	21-32-51	26-39-57	32-44-62	37-48-67	42-51-72	44-54-76	46-57-80
26 x 26	**cfm**		**1408**	**1878**	**2347**	**2817**	**3286**	**3756**	**4225**	**4694**
	NC		–	–	–	20	25	30	34	37
	Throw,ft		17-26-48	23-34-55	28-43-62	34-48-68	40-52-73	45-55-78	48-59-83	50-62-87
28 x 28	**cfm**		**1633**	**2178**	**2722**	**3267**	**3811**	**4356**	**4900**	**5444**
	NC		–	–	–	20	26	30	34	38
	Throw,ft		18-28-51	25-37-59	31-46-66	37-51-73	43-56-79	48-59-84	51-63-89	54-66-94
30 x 30	**cfm**		**1875**	**2500**	**3125**	**3750**	**4375**	**5000**	**5625**	**6250**
	NC		–	–	–	21	26	30	34	38
	Throw,ft		20-30-55	26-39-64	33-49-71	39-55-78	46-60-84	52-64-90	55-68-95	58-71-101

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 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: add 10 to listed NC; multiply listed total pressure by 1.20 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.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

MSSL Series

Product Information

Model

Straight Fixed Louver **MSSL**

Price MSSL Series straight louver security grilles feature all-welded construction and integral wall sleeves for medium security sidewall applications.

Construction

- **Faceplate:** 14 gauge hot rolled steel. Optional Thickness: 3/16 in. [5], 10 gauge or 12 gauge hot rolled steel.
- **Louvers:** 1/8 in. [3] x 1/2 in. [13] (cold rolled steel CRS) louvers, 0° deflection (Core C1) through 14 gauge vertical support mullions located on 6 in. [152] centers. For optional cores, see page D187.
- **Wire Mesh**: 10 gauge x 3/8 in. [10] clear opening steel wire mesh secured by angles behind core.
- **Sleeve:** 14 gauge hot rolled steel, length as required, stitch welded seams. Optional Thickness: 3/16 in. [5], 10 gauge or 12 gauge hot rolled steel. Additional options include continuously welded seams, bent out rear flange (see option S5, page D188).
- **4 Sided Mounting Frame:**
  1 in. x 1 in. x 1/8 in. [25 x 25 x 3] hot rolled steel angle frame shipped loose for field welding. For optional mounting frames (options MF1, MF2, MF4) see page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Material: All-aluminum (minimum security), or all 304 stainless steel. Only available in 10 gauge construction.

Fastening Methods: Options MR6, MR7, CS (see page D188).

Dampers: Options 3BF, 3BR (see page D188).

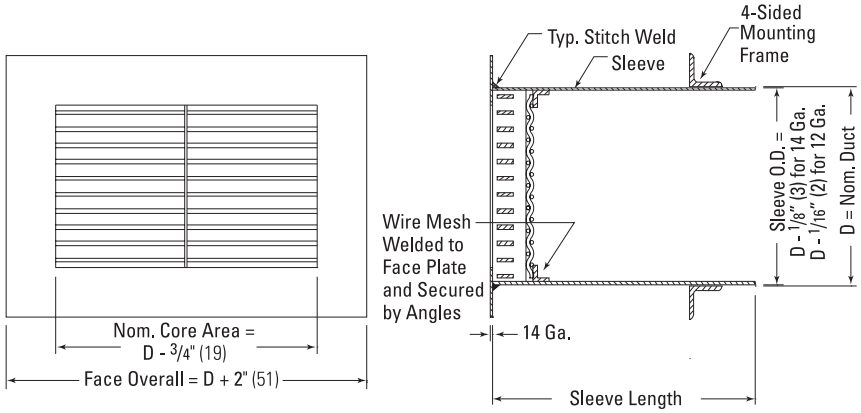
Barrier Bars: Options BB16, BB17, BB18, BB19, BB20, BB21, BB22, and BB23 (see page D189).

Transfer Grille Construction: Option TGCS (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
4] Specify Wall Thickness.
5] Select Finish.

Example: 12 x 12 / MSSL / Core C2 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Neck Velocity / Velocity Pressure / Total Pressure	300 / 0.006 / 0.025	400 / 0.010 / 0.045	500 / 0.016 / 0.070	600 / 0.022 / 0.101	700 / 0.031 / 0.137	800 / 0.040 / 0.180	900 / 0.050 / 0.227	1000 / 0.062 / 0.281
6 x 6	cfm	75	100	125	150	175	200	225	250
	NC	–	–	17	23	27	31	35	38
	Throw,ft	6-9-17	8-12-20	10-15-22	12-17-24	14-19-26	16-20-28	17-21-30	18-22-31
8 x 8	cfm	133	178	222	267	311	356	400	444
	NC	–	–	18	23	28	32	36	39
	Throw,ft	8-12-23	11-16-26	14-20-30	16-23-32	19-25-35	22-26-37	23-28-40	24-30-42
10 x 10	cfm	208	278	347	417	486	556	625	694
	NC	–	–	18	24	29	33	36	40
	Throw,ft	10-15-29	14-20-33	17-25-37	20-29-40	24-31-44	27-33-47	29-35-49	30-37-52
12 x 12	cfm	300	400	500	600	700	800	900	1000
	NC	–	–	19	24	29	33	37	40
	Throw,ft	12-18-34	16-24-40	20-31-44	24-34-48	29-37-52	32-40-56	34-42-59	36-44-63
14 x 14	cfm	408	544	681	817	953	1089	1225	1361
	NC	–	–	19	25	30	34	37	40
	Throw,ft	14-21-40	19-29-46	24-36-52	29-40-57	33-43-61	38-46-65	40-49-69	42-52-73
16 x 16	cfm	533	711	889	1067	1244	1422	1600	1778
	NC	–	–	20	25	30	34	38	41
	Throw,ft	16-24-46	22-33-53	27-41-59	33-46-65	38-49-70	43-53-75	46-56-79	48-59-83
18 x 18	cfm	675	900	1125	1350	1575	1800	2025	2250
	NC	–	–	20	26	30	34	38	41
	Throw,ft	18-27-51	24-37-59	31-46-66	37-51-73	43-56-79	48-59-84	51-63-89	54-66-94
20 x 20	cfm	833	1111	1389	1667	1944	2222	2500	2778
	NC	–	–	20	26	30	35	38	41
	Throw,ft	20-31-57	27-41-66	34-51-74	41-57-81	48-62-87	54-66-93	57-70-99	60-74-104
22 x 22	cfm	1008	1344	1681	2017	2353	2689	3025	3361
	NC	–	–	21	26	31	35	38	42
	Throw,ft	22-34-63	30-45-73	37-56-81	45-63-89	52-68-96	59-73-103	63-77-109	66-81-115
24 x 24	cfm	1200	1600	2000	2400	2800	3200	3600	4000
	NC	–	–	21	26	31	35	39	42
	Throw,ft	24-37-69	33-49-79	41-61-89	49-69-97	57-74-105	65-79-112	69-84-119	72-89-125
26 x 26	cfm	1408	1878	2347	2817	3286	3756	4225	4694
	NC	–	–	21	26	31	35	39	42
	Throw,ft	26-40-74	35-53-86	44-66-96	53-74-105	62-80-113	70-86-121	74-91-129	78-96-136
28 x 28	cfm	1633	2178	2722	3267	3811	4356	4900	5444
	NC	–	–	21	27	31	35	39	42
	Throw,ft	29-43-80	38-57-92	48-71-103	57-80-113	67-86-122	75-92-131	80-98-139	84-103-146
30 x 30	cfm	1875	2500	3125	3750	4375	5000	5625	6250
	NC	–	–	21	27	32	36	39	42
	Throw,ft	31-46-86	41-61-99	51-76-111	61-86-121	71-93-131	81-99-140	86-105-148	90-111-157

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 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 1.6 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.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

MSBL Series

Product Information

Model

Bent Fixed Louver **MSBL**

Price MSBL Series bent louver security grilles feature all-welded construction and integral wall sleeves for medium security sidewall applications.

Construction

- **Frame:** 16 gauge hot rolled steel with reinforced mitered corners. Optional Thickness: 14 gauge.
- **Louvers:** 14 gauge hot rolled steel bent louvers on 3/8 in. [10] centers, 45° deflection (Core C7) with 14 gauge interlocking vertical support mullions on 6 in. [152] centers. For optional Core C8, see page D187.
- **Wire Mesh:** 10 gauge x 3/8 in. [10] clear opening steel wire mesh secured by angles behind core.
- **Sleeve:** 14 gauge hot rolled steel, length as required, stitch welded seams. Optional Thickness: 12 gauge. Additional options include continuously welded seams, bent out rear flange (see option S5, page D188).
- **4 Sided Mounting Frame:**
  1 in. x 1 in. x 1/8 in. [25 x 25 x 3] hot rolled steel angle frame shipped loose for field welding. For optional mounting frames (options MF1, MF2, MF4) see page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Fastening Methods: Options MR6, MR7, CS (see page D188).

Dampers: Options 3BR (see page D188).

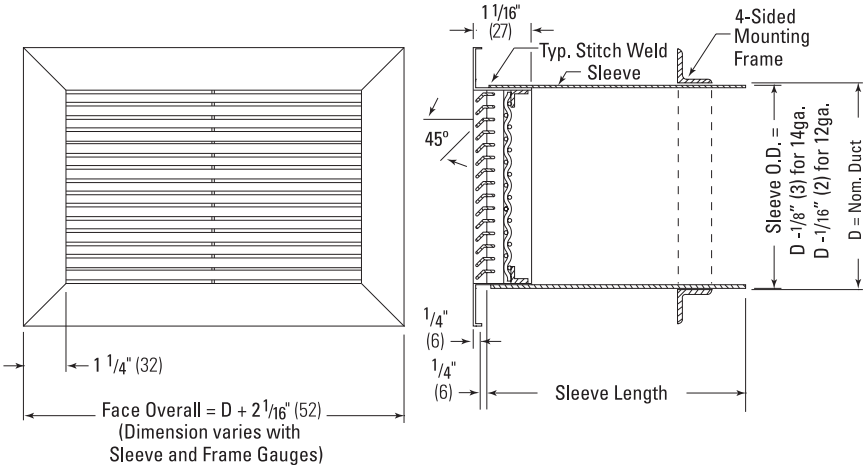
Barrier Bars: Options BB16, BB17, BB18, BB19, BB20, BB21, BB22, and BB23 (see page D189).

Transfer Grille Construction: Option TGCS (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
4] Specify Wall Thickness.
5] Select Finish.

Example: 12 x 12 / MSBL / Option 12 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Neck Velocity	300	400	500	600	700	800	900	1000
	Velocity Pressure	0.006	0.010	0.016	0.022	0.031	0.040	0.050	0.062
	Total Pressure	0.031	0.055	0.086	0.123	0.168	0.219	0.278	0.343
6 x 6	cfm	75	100	125	150	175	200	225	250
	NC	–	–	17	23	28	33	36	40
	Throw,ft	4-6-11	5-7-13	6-9-14	7-11-16	9-12-17	10-13-18	11-14-19	12-14-20
8 x 8	cfm	133	178	222	267	311	356	400	444
	NC	–	–	19	25	30	34	38	42
	Throw,ft	5-7-15	7-10-17	8-12-19	10-15-21	12-16-22	13-17-24	15-18-25	15-19-27
10 x 10	cfm	208	278	347	417	486	556	625	694
	NC	–	–	20	26	31	36	39	43
	Throw,ft	6-9-18	8-12-21	10-15-24	12-18-26	14-20-28	16-21-30	18-23-32	19-24-34
12 x 12	cfm	300	400	500	600	700	800	900	1000
	NC	–	–	21	27	32	37	41	44
	Throw,ft	7-11-22	10-15-25	12-19-28	15-22-31	17-24-34	20-25-36	22-27-38	23-28-40
14 x 14	cfm	408	544	681	817	953	1089	1225	1361
	NC	–	15	22	28	33	38	42	45
	Throw,ft	9-13-26	12-17-30	14-22-33	17-26-36	20-28-39	23-30-42	26-32-45	27-33-47
16 x 16	cfm	533	711	889	1067	1244	1422	1600	1778
	NC	–	16	23	29	34	38	42	46
	Throw,ft	10-15-29	13-20-34	16-25-38	20-29-42	23-32-45	26-34-48	29-36-51	31-38-54
18 x 18	cfm	675	900	1125	1350	1575	1800	2025	2250
	NC	–	17	24	30	35	39	43	46
	Throw,ft	11-17-33	15-22-38	19-28-43	22-33-47	26-36-51	30-38-54	33-41-57	35-43-60
20 x 20	cfm	833	1111	1389	1667	1944	2222	2500	2778
	NC	–	17	25	30	35	40	44	47
	Throw,ft	12-19-37	16-25-42	21-31-47	25-37-52	29-40-56	33-42-60	37-45-64	39-47-67
22 x 22	cfm	1008	1344	1681	2017	2353	2689	3025	3361
	NC	–	18	25	31	36	40	44	48
	Throw,ft	14-20-40	18-27-47	23-34-52	27-40-57	32-44-62	36-47-66	40-50-70	43-52-74
24 x 24	cfm	1200	1600	2000	2400	2800	3200	3600	4000
	NC	–	18	26	32	37	41	45	48
	Throw,ft	15-22-44	20-30-51	25-37-57	30-44-62	35-48-67	40-51-72	44-54-76	46-57-80
26 x 26	cfm	1408	1878	2347	2817	3286	3756	4225	4694
	NC	–	19	26	32	37	41	45	49
	Throw,ft	16-24-48	21-32-55	27-40-62	32-48-68	37-52-73	43-55-78	48-59-83	50-62-87
28 x 28	cfm	1633	2178	2722	3267	3811	4356	4900	5444
	NC	–	19	27	33	38	42	46	49
	Throw,ft	17-26-51	23-35-59	29-43-66	35-51-73	40-56-79	46-59-84	51-63-89	54-66-94
30 x 30	cfm	1875	2500	3125	3750	4375	5000	5625	6250
	NC	–	20	27	33	38	42	46	50
	Throw,ft	19-28-55	25-37-64	31-46-71	37-55-78	43-60-84	49-64-90	55-68-95	58-71-101

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 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: add 16 To listed NC; multiply listed total pressure by 1.80 to obtain negative static pressure.
9. Throw data is based on louver deflection oriented towards ceiling. Throw is based on wall mounting grille within 18 in. of ceiling, therefore ceiling effect is included in throw values.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Maximum Security Grille with Steel Rod
MSGS Series

Product Information

Model

Steel Rod Type **MSGS**

Price MSGS Series steel security grilles with steel rod are engineered for use in maximum security applications and offer the appearance and performance of a linear bar diffuser.

Construction

- **Frame:** 3/16 in. [5] hot rolled steel.
- **Louvers:** 1/8 [3] x 1 1/2 in. [38] hot rolled steel bars on 1/4 in. [6] centers at 0° or 15° deflection with hardened steel rod mullions.
- **Sleeve:** 12 gauge hot rolled steel, length as required. Stitch welded seams.
- **4 Sided Mounting Frame:** 1 1/2 in. x 1 1/2 in. x 3/16 in. [38 x 38 x 5] hot rolled steel angle frame shipped loose for field welding.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Fastening Methods: Options MR6, MR7 (see page D188).

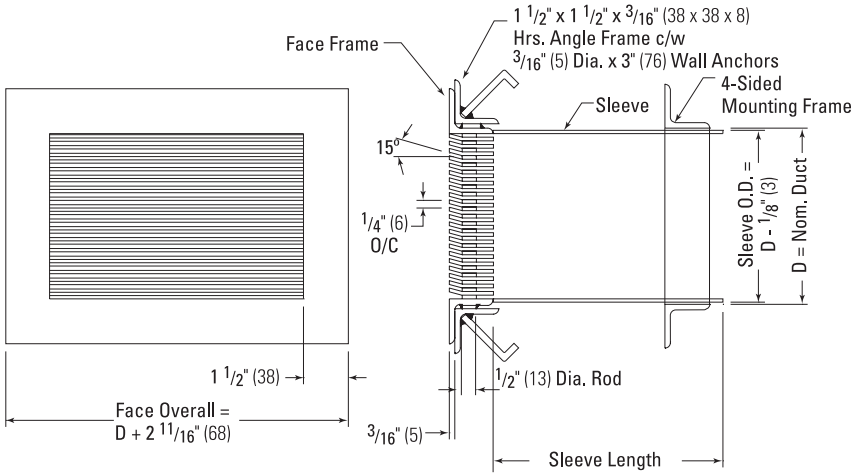
Dampers: Options 3BR (see page D188).

Barrier Bars: Options BB16, BB17, BB18, BB19, BB20, BB21, BB22, and BB23 (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**24 in. x 12 in** [610 x 305]

* for oversize grilles see page D189



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
4] Specify Wall Thickness.
5] Select Finish.

Example: 12 x 12 / MSBL / Option 12 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size	Neck Velocity / Velocity Pressure / Total Pressure	300 / 0.006 / 0.050	400 / 0.010 / 0.090	500 / 0.016 / 0.140	600 / 0.022 / 0.202	700 / 0.031 / 0.275	800 / 0.040 / 0.359	900 / 0.050 / 0.454	1000 / 0.062 / 0.561
6 x 6	cfm	14 **75**	**100**	**125**	**150**	**175**	**200**	**225**	**250**
	NC	–	–	20	26	30	34	37	40
	Throw,ft	6-9-12	8-10-14	9-11-16	10-12-17	11-13-19	12-14-20	12-15-21	13-16-22
8 x 8	cfm	**133**	**178**	**222**	**267**	**311**	**356**	**400**	**444**
	NC	–	15	22	27	32	35	39	42
	Throw,ft	8-12-16	11-13-19	12-15-21	13-16-23	14-18-25	15-19-27	16-20-28	17-21-30
10 x 10	cfm	**208**	**278**	**347**	**417**	**486**	**556**	**625**	**694**
	NC	–	16	23	28	33	37	40	43
	Throw,ft	10-14-20	14-17-24	15-19-26	17-20-29	18-22-31	19-24-33	20-25-35	22-26-37
12 x 12	cfm	**300**	**400**	**500**	**600**	**700**	**800**	**900**	**1000**
	NC	–	17	24	29	34	38	41	44
	Throw,ft	13-17-24	16-20-28	18-22-32	20-24-35	22-26-37	23-28-40	24-30-42	26-32-45
14 x 14	cfm	**408**	**544**	**681**	**817**	**953**	**1089**	**1225**	**1361**
	NC	–	18	25	30	34	38	42	45
	Throw,ft	15-20-29	19-23-33	21-26-37	23-29-40	25-31-44	27-33-47	29-35-49	30-37-52
16 x 16	cfm	**533**	**711**	**889**	**1067**	**1244**	**1422**	**1600**	**1778**
	NC	–	19	25	31	35	39	42	45
	Throw,ft	17-23-33	22-27-38	24-30-42	27-33-46	29-35-50	31-38-53	33-40-57	34-42-60
18 x 18	cfm	**675**	**900**	**1125**	**1350**	**1575**	**1800**	**2025**	**2250**
	NC	–	19	26	31	36	40	43	46
	Throw,ft	19-26-37	24-30-42	27-34-47	30-37-52	32-40-56	35-42-60	37-45-64	39-47-67
20 x 20	cfm	**833**	**1111**	**1389**	**1667**	**1944**	**2222**	**2500**	**2778**
	NC	–	20	26	32	36	40	44	47
	Throw,ft	21-29-41	27-33-47	30-37-53	33-41-58	36-44-62	38-47-67	41-50-71	43-53-75
22 x 22	cfm	**1008**	**1344**	**1681**	**2017**	**2353**	**2689**	**3025**	**3361**
	NC	–	20	27	32	37	41	44	47
	Throw,ft	23-32-45	30-37-52	33-41-58	37-45-64	40-49-69	42-52-73	45-55-78	47-58-82
24 x 24	cfm	**1200**	**1600**	**2000**	**2400**	**2800**	**3200**	**3600**	**4000**
	NC	–	21	27	33	37	41	45	48
	Throw,ft	25-35-49	33-40-57	37-45-63	40-49-69	43-53-75	46-57-80	49-60-85	52-63-89
26 x 26	cfm	**1408**	**1878**	**2347**	**2817**	**3286**	**3756**	**4225**	**4694**
	NC	–	21	28	33	38	42	45	48
	Throw,ft	27-38-53	35-43-61	40-48-69	43-53-75	47-57-81	50-61-87	53-65-92	56-69-97
28 x 28	cfm	**1633**	**2178**	**2722**	**3267**	**3811**	**4356**	**4900**	**5444**
	NC	–	22	28	34	38	42	45	48
	Throw,ft	29-40-57	38-47-66	43-52-74	47-57-81	50-62-87	54-66-93	57-70-99	60-74-104
30 x 30	cfm	**1875**	**2500**	**3125**	**3750**	**4375**	**5000**	**5625**	**6250**
	NC	–	22	29	34	38	42	46	49
	Throw,ft	31-43-61	41-50-71	46-56-79	50-61-87	54-66-94	58-71-100	61-75-106	65-79-112

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 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 1.2 to obtain negative static pressure.
9. Throw data is based on louver deflection oriented towards ceiling. Throw is based on wall mounting grille within 18 in. of ceiling, therefore ceiling effect is included in throw values.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

MSD Series

Product Information

Model

Lattice Face Diffuser **MSD**

Price MSD Series lattice face directional diffusers features Price SMD Series high capacity louvered face directional diffusers with lattice faceplates for additional security.

Construction

- **Faceplate:** 12 gauge hot rolled steel with $^{13}/_{16}$ in. [21] square holes and $^{3}/_{16}$ in. [5] fret. Countersunk screw holes are located on the face on maximum 10 in. [254] centers. Unit includes tamperproof screws. Optional Thickness: 10 gauge or 14 gauge hot rolled steel. For optional faceplate patterns, see page D186 Note: Round hole patterns available.* Additional options include rear angle frame with weldnuts and tamperproof bolts (option CS8, page D188).
- **Diffuser:** Price Model SMD diffuser, 4 way air pattern, Type 1 surface mount border. Optional 1, 2 and 3 way core styles, Price Model SMD modular core diffuser.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Material: All-aluminum. Only available in 10 gauge construction. For aluminum units, Price AMD Series diffusers are supplied.

Dampers: Options 3 (see page D188).

Available Sizes

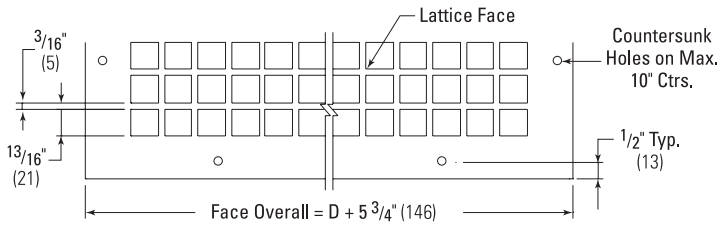
Minimum	Maximum
6 in. x 6 in. [152 x 152]	**24 in. x 24 in.** [610 x 610]

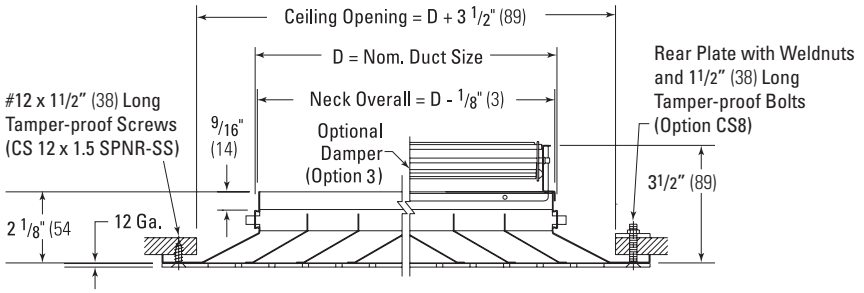
* Round hole faceplate pattern produces a vertical throw.

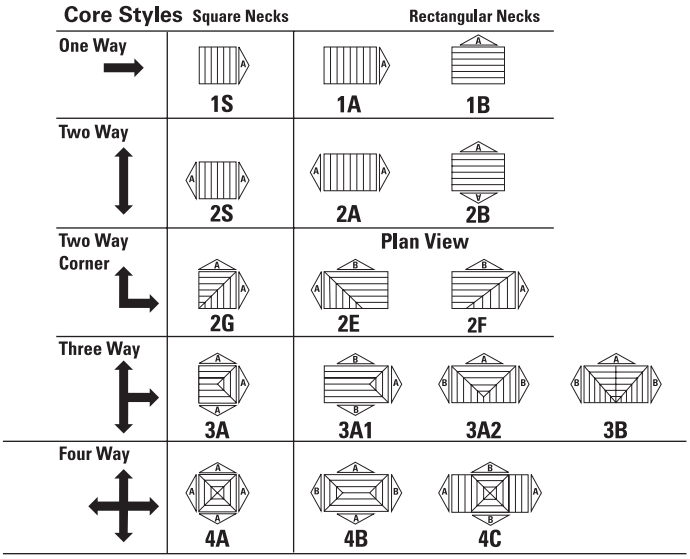
✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet type by model number.
3] Select Faceplate Pattern according to requirements.
4] Select Core style based on application.
5] Select Options & Accessories if required.
6] Select Finish.

Example: 9 x 9 / MSD / L4 / 4A / B12







All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Neck Size	Neck Velocity / Velocity Pressure / Total Pressure	300 / 0.006 / 0.042	400 / 0.010 / 0.074	500 / 0.016 / 0.115	600 / 0.022 / 0.166	700 / 0.031 / 0.226	800 / 0.040 / 0.296	900 / 0.050 / 0.374
6 x 6	cfm	75	100	125	150	175	200	225
	NC	–	–	21	28	33	38	42
	Throw,ft	2-5-9	4-6-10	5-8-11	6-9-13	7-10-14	8-10-15	9-11-15
9 x 9	cfm	169	225	281	338	394	450	506
	NC	–	18	26	33	38	43	47
	Throw,ft	3-5-11	5-7-15	6-9-17	7-11-19	9-13-20	10-15-22	11-16-23
12 x 12	cfm	300	400	500	600	700	800	900
	NC	–	22	30	36	41	46	50
	Throw,ft	3-6-13	5-8-17	7-10-21	8-13-25	10-15-27	11-17-29	13-19-31
15 x 15	cfm	469	625	781	938	1094	1250	1406
	NC	–	24	32	39	44	49	53
	Throw,ft	3-7-14	6-9-19	8-12-23	9-14-28	11-16-32	12-19-36	14-21-38
18 x 18	cfm	675	900	1125	1350	1575	1800	2025
	NC	17	27	35	41	46	51	55
	Throw,ft	4-8-15	6-10-20	8-13-25	10-15-30	12-18-35	13-20-40	15-23-45
21 x 21	cfm	919	1225	1531	1838	2144	2450	2756
	NC	18	29	36	43	48	53	57
	Throw,ft	4-8-16	7-11-22	9-14-27	11-16-32	13-19-38	14-22-43	16-24-49
24 x 24	cfm	1200	1600	2000	2400	2800	3200	3600
	NC	20	30	38	44	50	55	59
	Throw,ft	4-9-17	7-12-23	10-14-29	12-17-35	13-20-40	15-23-46	17-26-52

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on a room absorption of -10 dB, re 10^{-12} watt s and one diffuser.
7. Performance data is tabulated for supply air applications.
8. Blanks (—) indicate an NC level below 15.
9. Corrections for return application: add 5 To listed NC; multiply listed total pressure by 1.40 to obtain negative static pressure.
10. Performance data is based on L4 faceplate pattern.

Product Information

Model

Duct / Barrier Grille **MSBG**

Price MSBG Series Duct / Barrier grilles features all-welded construction to provide additional security in openings between secure and non-secure areas. Duct Barrier Grilles should be placed in every opening through a secure wall.

Construction

- **Sleeve:** 3/16 in. [5] hot rolled steel flat bar frame (Frame F1). For optional 4 sided mounting frame styles, see page D188.
- **Barrier Bars:** 1/2 in. [13] diameter hot rolled steel bars located on maximum 6 in. [152] vertical and 12 in. [305] horizontal centers. Bars welded to frame and at all crosspoints. For optional barrier bars (options BB17, BB18, BB19, BB20, BB21, BB22, BB23) see page D189.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Material: All 304 stainless steel.

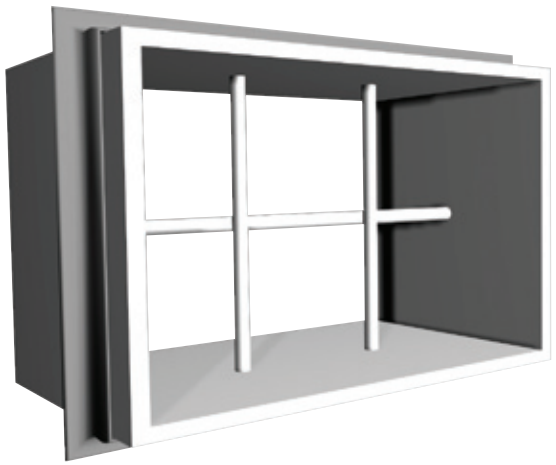
Fastening Methods: Options MR6, MR7 (see page D188).

Wire Mesh: Option WM (see page D188).

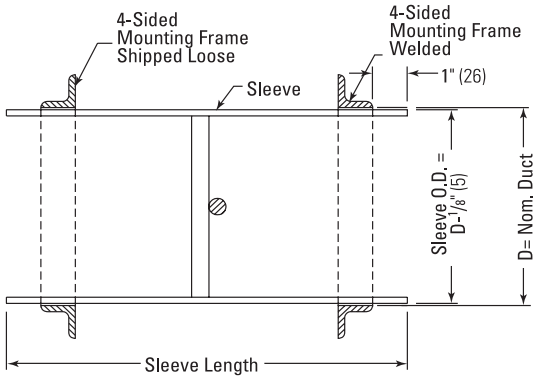
Available Sizes

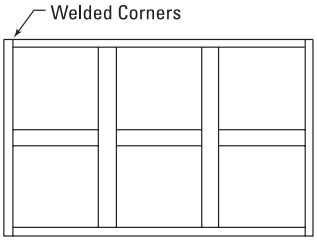
Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



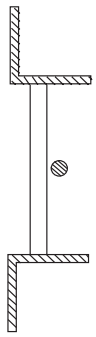
Sleeve F1





Sleeve F2

2-1/2" x 2-1/2" x 1/4"
(64 x 64 x 6)
angle frame



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Frame & Bar Style.
4] Select Options & Accessories if required.
5] Specify Wall Thickness.
6] Select Finish.

Example: 12 x 12 / MSBG / F1 / 16, 17, 18 / 6 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Model

Duct / Barrier Grille **MSDRBG**

Price MSDRBG Series Double Ribbed Duct / Barrier grille features all-welded construction and Double Rib Bar technology. The MSDRBG provides maximum opposition against penetration for openings between secure and non-secure areas.

Construction

- **Sleeve:** 1/4 in. [6] hot rolled steel flat bar frame (Frame F1).
- **Barrier Bars:** 7/8 in. [22] diameter hot rolled steel bars located on maximum 5 in. [127] vertical centers. Bars inserted in 3 in. square plates that are welded to the sleeve.

Finish

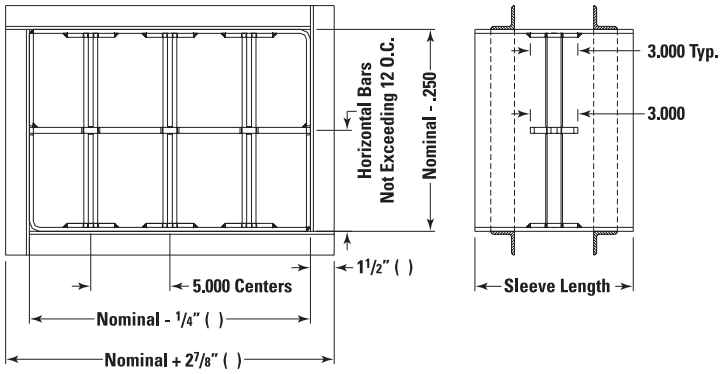
White Powder Coat **B12**

For optional and special finishes see color matrix.

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Frame & Bar Style.
4] Select Options & Accessories if required.
5] Specify Wall Thickness.
6] Select Finish.

Example: 12 x 12 / MSDRBG / F1 / 16, 17, 18 / 6 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Product Information

Model

Duct / Barrier Grille **MSTRBG**

Price MSTRBG Series Tool Resisting Barrier Grille features all-welded construction and Double Rib Bar technology. The MSTRBG provides maximum opposition against penetration for openings between secure and non-secure areas. Carefully selected carbon steel, combined with innovative heat treating technology produces a grille that adheres to the latest industry specifications for materials used in construction of grilles for security applications (ASTM A 627-03). Double rib and 2 1/4 in. [57] x 3/8 in. [10] flat bars adhere to ASTM A 627-03.

Construction

- **Sleeve:** 1/4 in. [6] hot rolled steel flat bar frame (Frame F1).
- **Barrier Bars:** 7/8 in. [22] diameter tool-resisting steel bars located on maximum 5 in. [127] vertical centers. Bars inserted into tool-resisting flat bar.
- **Flat Bars:** 2 1/4 in. [57] x 3/8 in. [10] tool-resisting flat bars are welded to sleeve on 12 in. horizontal centers.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Mounting Frames:
MF1, MF2 (see page D188).

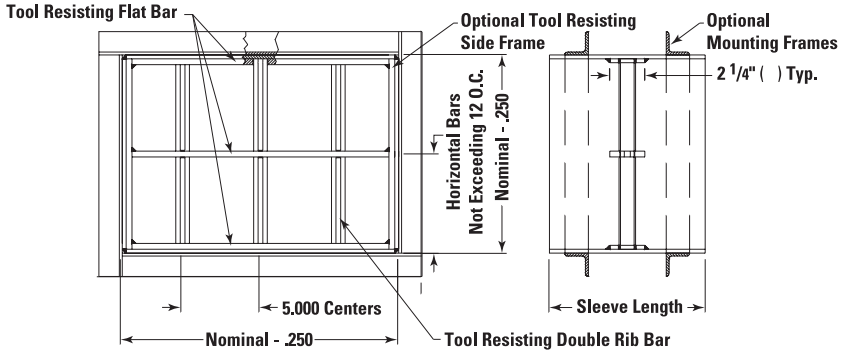
Masonary Rods:
MR6, MR7 (see page D188).

Tool Resisting Side Frame:
TRSF

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189.



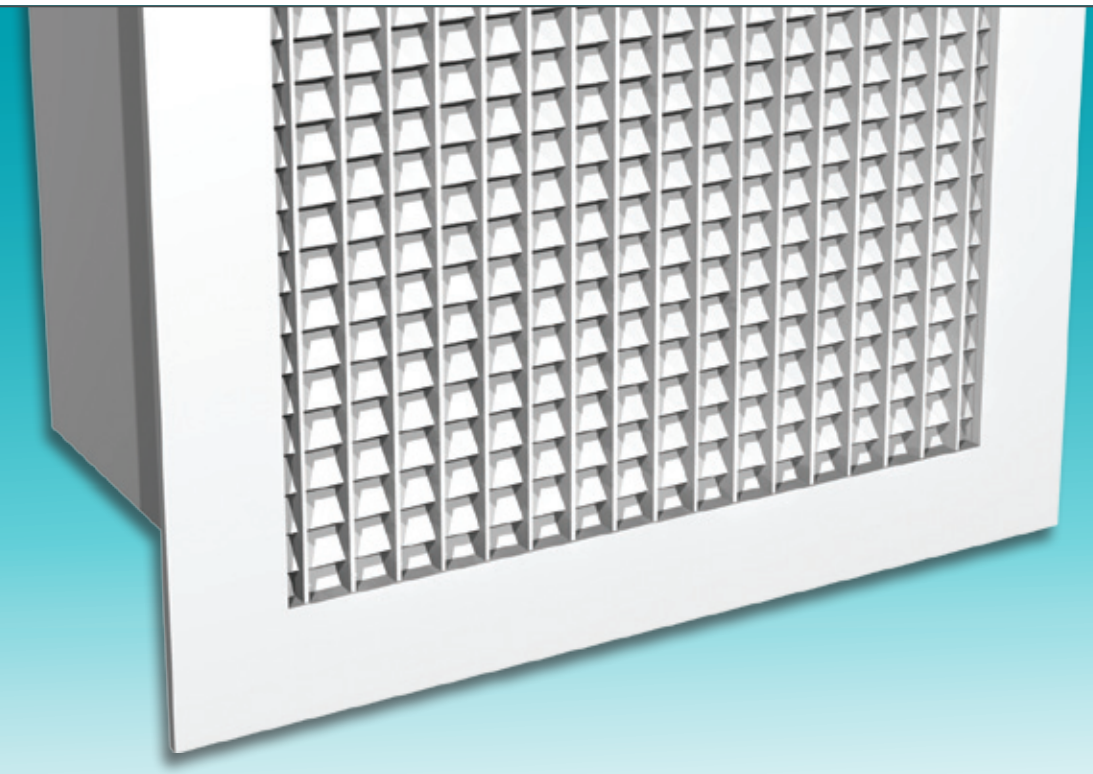
Complies with ASTM A 627-03

✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Frame & Bar Style.
4] Select Options & Accessories if required.
5] Specify Wall Thickness.
6] Select Finish.

Example: 12 x 12 / MSTRBG / F1 / 16, 17, 18 / 6 / 8 in. / B12

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

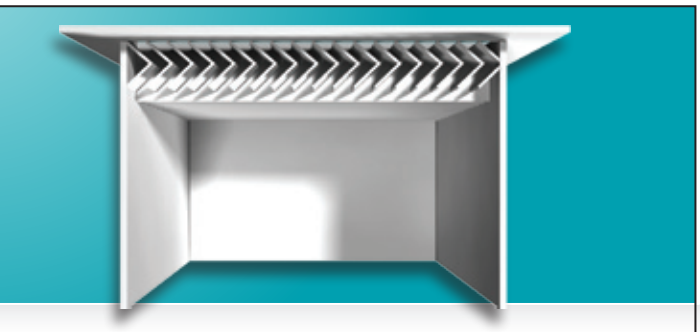


MSRRG Diffuser

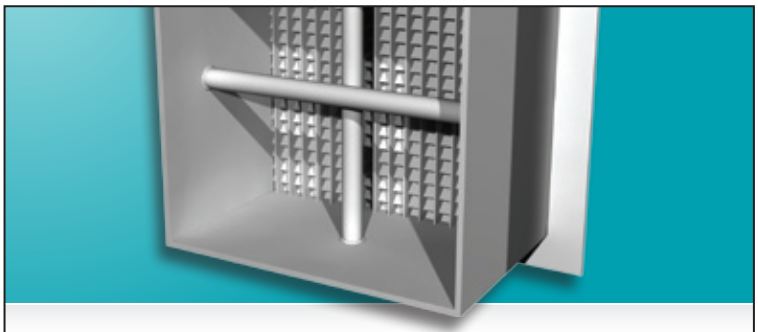
MAXIMUM SECURITY RISK RESISTANT GRILLE

The Price MSRRG Series Risk Resistant Grilles feature a non-vision core in all-welded steel construction for maximum security. The MSRRG diffuser impedes the ability to thread objects or store contraband.

Utilizing the most recent industry guidelines and design practices for security products.



Sightproof core inhibits threading



Optional barrier bars

www.priceindustries.com for additional product information, including product videos and brochures.

Product Information

Model

Risk Resistant **MSRRG**

Price MSRRG Series Risk Resistant Grilles feature a non-vision core in all-welded steel construction for maximum security. MSRRG inhibits the likelihood of an inmate threading hanging devices or contraband through the face, while still providing air distribution.

Construction

- **Faceplate:** 3/16 in. [5] hot rolled steel.
- **Louvers:** 1 in. [25] angle, 45° deflection on 1/4 in. [6] centers.
- **Vertical Mullions:** 1 3/4 in. [44] x 12 gauge hot rolled steel bar pierces louvers on 1/2 in. [13] centers.
- **Sleeve:** 3/16 in. [5] hot rolled steel, length as required, stitch welded seams. Optional Thickness: 1/4 in. [6], 10 gauge or 12 gauge hot rolled steel. Additional options include continuously welded seams and bent out rear flange (see option S5, page D188).
- **4 Sided Mounting Frame:**
  1 in. x 1 in. x 3/16 in. [25 x 25 x 5] hot rolled steel angle frame is shipped loose for field welding. For optional mounting frames (Options MF2, MF3, MF4) see page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Fastening Methods: Options MR6, MR7, CS (see page D188).

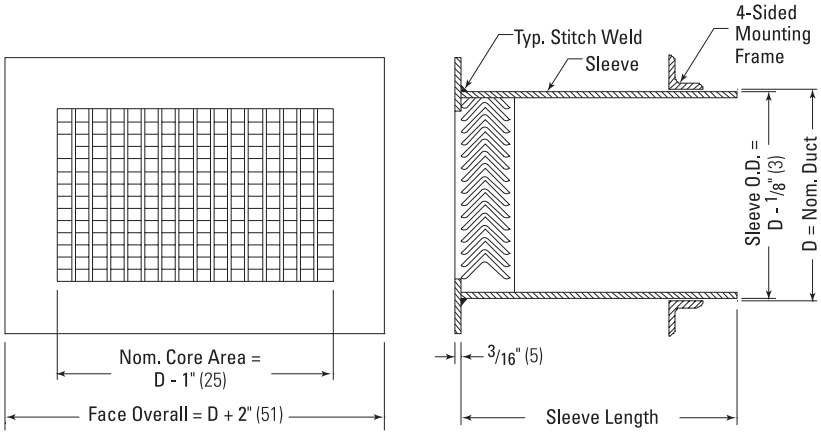
Dampers: Options 3BR (see page D188).

Barrier Bars: Options BB16, BB17, BB18, BB19, BB20, BB21, BB22, and BB23 (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**24 in. x 24 in.** [610 x 610]

* for oversize grilles see page D189.



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
5] Specify Wall Thickness.
6] Select Finish.

Example: 12 x 12 / MSRRG / Option 6 / 8 in. / B12

The Model MSRRG is designed to reasonably limit the risk of injury to inmates or other persons by utilizing the most recent known industry guidelines and design practices for security products. The product is also designed to reasonably reduce the likelihood of an inmate threading hanging devices or storing contraband through the face of the grille. However, it is not represented or implied that this product cannot be used in any manner or manipulated in any manner to inflict injury on self or others, or that it cannot be damaged or destroyed. Price warrants only the construction and air flow performance of the product as catalogued.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data

Size		Neck Velocity Velocity Pressure Total Pressure	100 0.001 0.022	150 0.001 0.050	200 0.002 0.090	250 0.004 0.140	300 0.006 0.202	350 0.008 0.275	400 0.010 0.359	450 0.013 0.454
6 x 6	cfm		25	38	50	63	75	88	100	113
	NC		–	–	19	25	30	34	37	40
	Throw,ft		1-1-4	1-3-6	2-4-8	4-5-9	4-6-10	5-7-11	6-8-11	6-8-12
8 x 8	cfm		44	67	89	111	133	156	178	200
	NC		–	–	20	26	31	35	39	42
	Throw,ft		1-2-6	2-4-9	3-6-11	5-7-12	6-9-13	7-10-14	8-11-15	9-11-16
10 x 10	cfm		69	104	139	174	208	243	278	313
	NC		–	–	21	27	32	36	40	43
	Throw,ft		1-2-7	2-5-11	4-7-13	6-9-15	7-11-16	8-12-18	10-13-19	11-14-20
12 x 12	cfm		100	150	200	250	300	350	400	450
	NC		–	–	22	28	33	37	40	43
	Throw,ft		1-3-9	3-6-13	5-9-16	7-11-18	9-13-20	10-15-21	11-16-23	13-17-24
14 x 14	cfm		136	204	272	340	408	476	544	613
	NC		–	–	22	28	33	37	41	44
	Throw,ft		1-3-10	3-7-15	6-10-19	8-13-21	10-15-23	12-17-25	13-19-26	15-20-28
16 x 16	cfm		178	267	356	444	533	622	711	800
	NC		–	15	23	29	34	38	42	45
	Throw,ft		2-4-11	4-8-17	7-11-21	10-14-24	11-17-26	13-20-28	15-21-30	17-23-32
18 x 18	cfm		225	338	450	563	675	788	900	1013
	NC		–	16	23	29	34	38	42	45
	Throw,ft		2-4-13	4-9-19	7-13-24	11-16-27	13-19-29	15-22-32	17-24-34	19-25-36
20 x 20	cfm		278	417	556	694	833	972	1111	1250
	NC		–	16	24	30	35	39	43	46
	Throw,ft		2-5-14	5-10-22	8-14-27	12-18-30	14-22-33	17-25-35	19-27-38	22-28-40
22 x 22	cfm		336	504	672	840	1008	1176	1344	1513
	NC		–	17	24	30	35	39	43	46
	Throw,ft		2-5-16	5-12-24	9-16-29	13-20-33	16-24-36	18-27-39	21-29-41	24-31-44
24 x 24	cfm		400	600	800	1000	1200	1400	1600	1800
	NC		–	17	25	31	36	40	43	47
	Throw,ft		2-6-17	6-13-26	10-17-32	14-22-36	17-26-39	20-30-42	23-32-45	26-34-48
26 x 26	cfm		469	704	939	1174	1408	1643	1878	2113
	NC		–	17	25	31	36	40	44	47
	Throw,ft		3-6-19	6-14-28	11-19-35	16-23-39	19-28-42	22-32-46	25-35-49	28-37-52
28 x 28	cfm		544	817	1089	1361	1633	1906	2178	2450
	NC		–	18	25	31	36	40	44	47
	Throw,ft		3-7-20	7-15-30	12-20-37	17-25-42	20-30-46	23-35-49	27-37-53	30-40-56
30 x 30	cfm		625	938	1250	1563	1875	2188	2500	2813
	NC		–	18	26	32	37	41	44	47
	Throw,ft		3-7-22	7-16-32	12-22-40	18-27-45	22-32-49	25-37-53	29-40-57	32-42-60

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal Velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one grille.
7. Blanks (–) indicate an NC value less than 15.
8. Corrections for return application: add 5 to listed NC; multiply listed total pressure by 2.0 to obtain negative static pressure.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

MSRRP Series

Product Information

Model

Risk Resistant Perforated Face **MSRRP**

Price MSRRP Series Risk Resistant Grilles feature ultra-small holes in a perforated face to inhibit the threading of hanging devices by an inmate. This maximum security grille also reduces the chance of contraband storage in the secured area. The MSRRP Series provides risk resistant air distribution in a perpendicular throw from the wall. MSRRP is an economical risk resistant grille that provides high air volumes.

Construction

- **Faceplate:** 3/16 in. [5] hot rolled steel with 3/16 in. [5] diameter holes staggered 60° on 9/32 in. [7] centers.
- **Sleeve:** 3/16 in. [5] hot rolled steel, length as required, stitch welded seams. Options include continuously welded seams and bent out rear flange (see option S5, page D188).
- **4 Sided Mounting Frame:** 1 in. x 1 in. x 3/16 in. [25 x 25 x 5] hot rolled steel angle frame is shipped loose for field welding. For optional mounting frames (options MF2, MF3, MF4) see page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Fastening Methods: Options MR6, MR7 (see page D188).

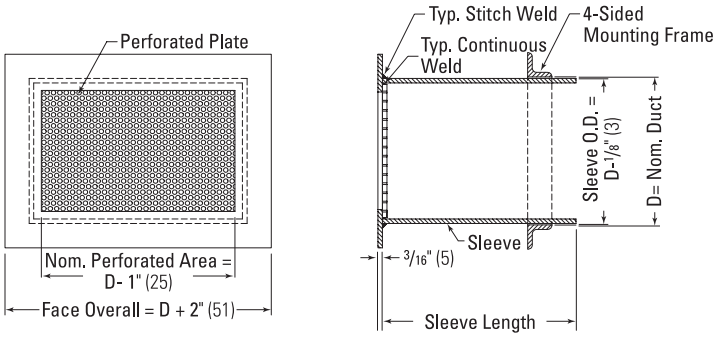
Dampers: Option 3BR (see page D188).

Barrier Bars: Options BB16, BB17, BB18, BB19, BB20, BB21, BB22, and BB23 (see page D189).

Available Sizes

Minimum	Maximum*
6 in. x 6 in. [152 x 152]	**30 in. x 30 in.** [762 x 762]

* for oversize grilles see page D189



✓ Product Selection Checklist

1] Select Unit Size based on desired performance characteristics.
2] Select Outlet Type by model number.
3] Select Options & Accessories if required.
4] Specify Wall Thickness.
5] Select Finish.

Example: 12 x 12 / MSRRP / 22 / 8 in. / B12

The Model MSRRP is designed to reasonably limit the risk of injury to inmates or other persons by utilizing the most recent known industry guidelines and design practices for security products. The product is also designed to reasonably reduce the likelihood of an inmate threading hanging devices or storing contraband through the face of the grille. However, it is not represented or implied that this product cannot be used in any manner or manipulated in any manner to inflict injury on self or others, or that it cannot be damaged or destroyed. Price warrants only the construction and air flow performance of the product as catalogued.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Supply

Size		Neck Velocity	100	150	200	250	300	400	500	600	700
		Velocity Pressure	0.001	0.001	0.002	0.004	0.006	0.010	0.016	0.022	0.031
		Total Pressure	0.006	0.013	0.024	0.037	0.053	0.095	0.148	0.213	0.290
		cfm	25	38	50	63	75	100	125	150	175
6 x 6		NC	-	-	-	-	-	-	21	29	35
		Throw,ft	2-4-10	4-7-15	7-10-20	8-12-25	10-15-30	13-20-35	16-25-40	20-30-43	23-33-47
		cfm	56	84	113	141	169	225	281	338	394
9 x 9		NC	-	-	-	-	-	16	25	33	40
		Throw,ft	2-5-14	5-10-21	9-14-28	12-17-35	14-21-42	19-28-53	23-35-59	28-42-65	32-49-70
		cfm	69	104	139	174	208	278	347	417	486
10 x 10		NC	-	-	-	-	-	17	26	34	41
		Throw,ft	2-5-15	5-11-23	9-15-30	13-19-38	15-23-46	20-30-59	25-38-66	30-46-72	36-53-78
		cfm	100	150	200	250	300	400	500	600	700
12 x 12		NC	-	-	-	-	-	19	28	36	43
		Throw,ft	3-6-18	6-13-27	11-18-36	15-22-45	18-27-54	24-36-71	30-45-79	36-54-87	42-63-94
		cfm	136	204	272	340	408	544	681	817	953
14 x 14		NC	-	-	-	-	-	20	30	38	44
		Throw,ft	3-7-21	7-15-31	12-21-41	17-26-52	21-31-62	28-41-82	34-52-92	41-62-101	48-72-109
		cfm	178	267	356	444	533	711	889	1067	1244
16 x 16		NC	-	-	-	-	-	22	31	39	46
		Throw,ft	3-7-23	7-17-35	13-23-47	20-29-59	23-35-70	31-47-94	39-59-105	47-70-115	55-82-125
		cfm	225	338	450	563	675	900	1125	1350	1575
18 x 18		NC	-	-	-	-	-	23	32	40	47
		Throw,ft	4-8-26	8-19-39	15-26-52	22-33-65	26-39-78	35-52-105	44-65-119	52-78-130	61-92-140
		cfm	278	417	556	694	833	1111	1389	1667	1944
20 x 20		NC	-	-	-	-	-	24	34	41	48
		Throw,ft	4-9-29	9-20-43	16-29-58	24-36-72	29-43-87	39-58-116	48-72-132	58-87-144	67-101-156
		cfm	336	504	672	840	1008	1344	1681	2017	2353
22 x 22		NC	-	-	-	-	-	25	35	42	49
		Throw,ft	4-10-32	10-22-47	17-32-63	26-40-79	32-47-95	42-63-126	53-79-145	63-95-159	74-111-171
		cfm	400	600	800	1000	1200	1600	2000	2400	2800
24 x 24		NC	-	-	-	-	-	26	35	43	50
		Throw,ft	5-11-34	11-24-52	19-34-69	29-43-86	34-52-103	46-69-137	57-86-158	69-103-173	80-120-187
		cfm	469	704	939	1174	1408	1878	2347	2817	3286
26 x 26		NC	-	-	-	-	-	27	36	44	51
		Throw,ft	5-11-37	11-25-56	20-37-74	31-46-93	37-56-111	49-74-148	62-93-171	74-111-188	87-130-203
		cfm	544	817	1089	1361	1633	2178	2722	3267	3811
28 x 28		NC	-	-	-	-	15	27	37	45	51
		Throw,ft	5-12-40	12-27-60	21-40-80	33-50-100	40-60-120	53-80-159	66-100-184	80-120-202	93-139-218
		cfm	625	938	1250	1563	1875	2500	3125	3750	4375
30 x 30		NC	-	-	-	-	16	28	38	46	52
		Throw,ft	6-13-43	13-29-64	23-43-85	35-53-106	43-64-128	57-85-170	71-106-198	85-128-217	99-149-234

Performance Notes:

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

Performance Data - Return

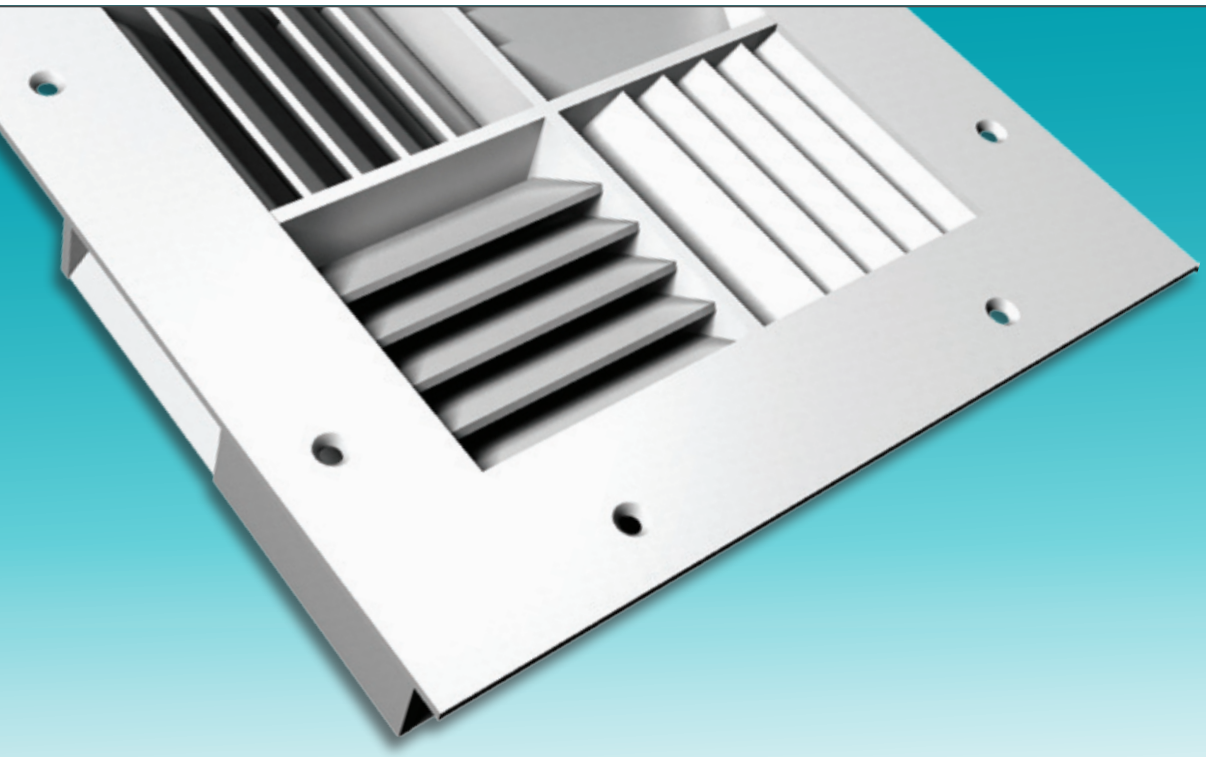
Size		Neck Velocity	100	150	200	250	300	400	500	600
		Velocity Pressure	0.001	0.001	0.002	0.004	0.006	0.010	0.016	0.022
		Negative Static Pressure	0.008	0.017	0.031	0.048	0.070	0.124	0.193	0.278
	cfm		25	38	50	63	75	100	125	150
6 x 6	NC		-	-	-	-	-	18	28	36
	cfm		56	84	113	141	169	225	281	338
9 x 9	NC		-	-	-	-	-	23	32	40
	cfm		69	104	139	174	208	278	347	417
10 x 10	NC		-	-	-	-	-	24	33	41
	cfm		100	150	200	250	300	400	500	600
12 x 12	NC		-	-	-	-	-	26	35	43
	cfm		136	204	272	340	408	544	681	817
14 x 14	NC		-	-	-	-	-	27	37	45
	cfm		178	267	356	444	533	711	889	1067
16 x 16	NC		-	-	-	-	16	29	38	46
	cfm		225	338	450	563	675	900	1125	1350
18 x 18	NC		-	-	-	-	17	30	39	47
	cfm		278	417	556	694	833	1111	1389	1667
20 x 20	NC		-	-	-	-	19	31	41	48
	cfm		336	504	672	840	1008	1344	1681	2017
22 x 22	NC		-	-	-	-	20	32	42	49
	cfm		400	600	800	1000	1200	1600	2000	2400
24 x 24	NC		-	-	-	-	20	33	42	50
	cfm		469	704	939	1174	1408	1878	2347	2817
26 x 26	NC		-	-	-	-	21	34	43	51
	cfm		544	817	1089	1361	1633	2178	2722	3267
28 x 28	NC		-	-	-	-	22	34	44	52
	cfm		625	938	1250	1563	1875	2500	3125	3750
30 x 30	NC		-	-	-	-	23	35	45	53

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 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.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

price Patented

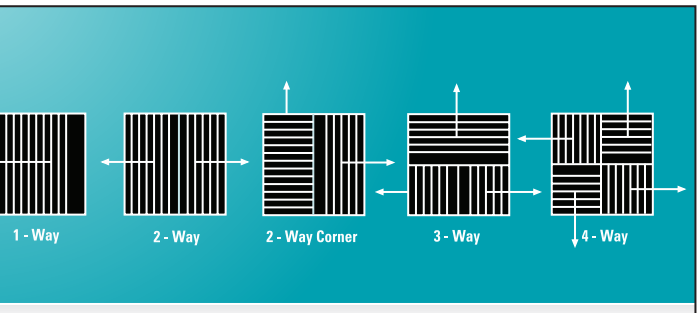


MSRRCD Series

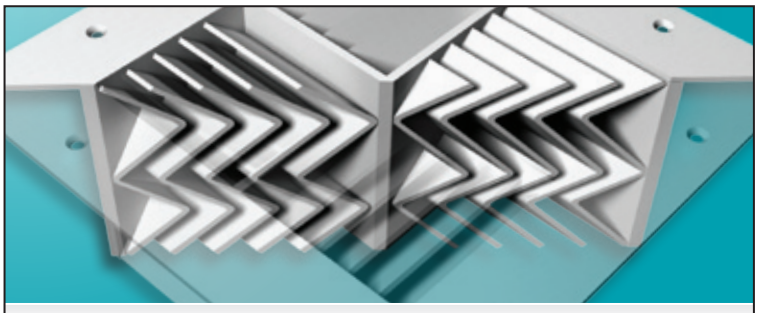
MAXIMUM SECURITY RISK RESISTANT CEILING DIFFUSER

The Price MSRRCD Series features heavy duty all-welded construction ideally suited for high security applications. Its uniquely designed W-shaped blade impedes the ability to thread objects or store contraband while supplying air at low sound levels and pressure drop.

Impedes threading while providing effective air distribution in a variety of blow patterns.



Available in 5 air patterns



Special core inhibits threading

www.priceindustries.com for additional product information, including product videos and brochures.

MSRRCD Series

Product Information

Model

Risk Resistant **MSRRCD**

Price MSRRCD Series Risk Resistant Ceiling Diffusers feature an injury inhibiting core which uses a unique w-shaped blade. The MSRRCD impedes efforts to threading while providing effective air distribution in a variety of blow patterns.

Construction

- **Faceplate:** 12 gauge hot rolled steel.
- **Louvers:** 12 gauge hot rolled steel, with 35° deflection.
- **Air Patterns:** 1 way, 2 way, 2 way corner, 3 way, and 4 way available.
- **Sleeve:** 12 gauge hot rolled steel, length as required.
- **4 Sided Mounting Frame:** 1 in. x 1 in. x 3/16 in. [25 x 25 x 5] hot rolled steel angle frame shipped loose for field welding. For optional mounting frames (options MF2, MF3, MF4) see page D188.

Finish

White Powder Coat **B12**

For optional and special finishes see color matrix.

Options & Accessories

Fastening Methods:

Countersunk srews through faceplate.

Options CS and CS8 (see page D188).

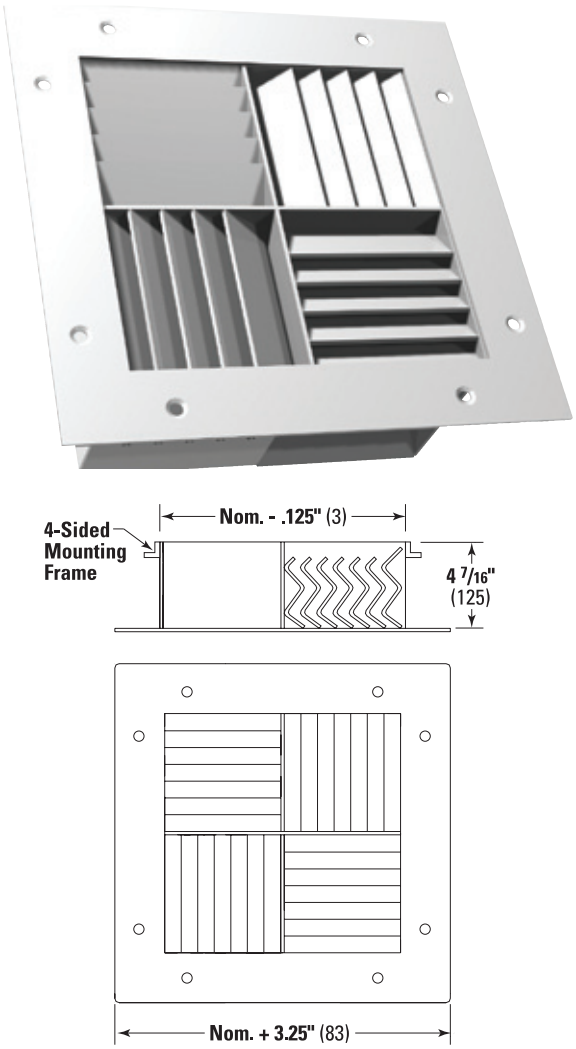
Available Sizes

6 in. x 6 in.	[152 x 152]
9 in. x 9 in.	[229 x 229]
12 in. x 12 in.	[305 x 305]
15 in. x 15 in.	[381 x 381]
18 in. x 18 in.	[457 x 457]

* Other sizes available as special

* 6 in. x 6 in. [152 x 152] available in 1 way pattern.

4 Way Air Pattern



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✓ Product Selection Checklist

1] Select Model
2] Select Unit Size based on desired performance characteristics.
3] Select Faceplate.
4] Select Air Pattern.
5] Select Face Panel Thickness.
6] Select Sleeve Length.
7] Select Options & Accessories if required.
8] Select Finish.

Example: MSRRCD / 12 x 12 / FP12 / 4W / S12 / 5 in. / HF1 / B12

The Model MSRRCD is designed to reasonably limit the risk of injury to inmates or other persons by utilizing the most recent known industry guidelines and design practices for security products. The product is also designed to reasonably reduce the likelihood of an inmate threading and attaching objects or storing contraband through the face of the grille. However, it is not represented or implied that this product cannot be used in any manner or manipulated in any manner to inflict injury on self or others, or that it cannot be damaged or destroyed. Price warrants only the construction and air flow performance of the product as catalogued.

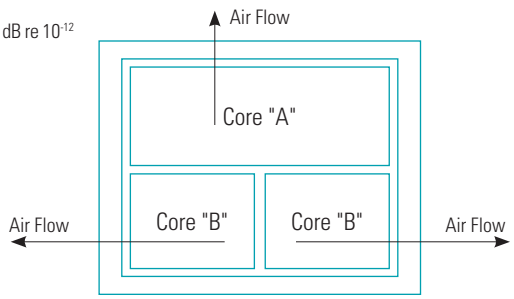
All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Performance Data - Supply

Size	Neck Velocity		50	100	150	200	250	300	350	400	500	600
	Velocity Pressure		0.000	0.001	0.001	0.002	0.004	0.006	0.008	0.010	0.016	0.022
6 x 6	cfm		13	25	38	50	63	75	88	100	125	150
	Total Pressure		0.004	0.015	0.033	0.059	0.091	0.132	0.179	0.234	0.366	0.527
	NC		-	-	-	-	-	-	16	20	26	31
	Throw, ft	1 way	1-2-5	3-5-8	5-7-10	7-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-13-18	12-14-20
8 x 8	cfm		22	44	67	89	111	133	156	178	222	267
	Total Pressure		0.003	0.012	0.026	0.047	0.073	0.105	0.143	0.187	0.292	0.421
	NC		-	-	-	-	-	-	19	23	29	34
	Throw, ft	1 way	1-2-6	3-6-11	6-9-13	8-11-15	10-12-17	11-13-19	12-14-20	13-15-22	14-17-24	15-19-27
	Total Pressure		0.005	0.020	0.044	0.078	0.123	0.176	0.240	0.314	0.490	0.706
	NC		-	-	-	-	17	22	27	32	39	44
		2 way	0-1-3	2-3-6	3-5-10	4-6-11	5-8-13	6-10-14	8-11-15	9-11-16	10-13-18	11-14-20
		3A way	0-1-2	1-2-6	2-4-8	4-6-10	5-7-11	6-8-12	6-9-13	7-10-14	9-11-15	10-12-17
		3B way	0-1-2	1-2-3	2-3-5	2-3-7	3-4-8	3-5-8	4-6-9	4-7-10	6-8-11	7-8-12
		4 way	0-1-2	1-2-4	2-3-7	3-4-8	4-6-9	4-7-10	5-8-11	6-8-12	7-9-13	8-10-14
9 x 9	cfm		28	56	84	113	141	169	197	225	281	338
	Total Pressure		0.003	0.011	0.024	0.043	0.067	0.096	0.131	0.171	0.267	0.384
	NC		-	-	-	-	-	15	20	24	30	36
	Throw, ft	1 way	1-2-6	3-6-12	6-9-15	8-12-17	10-14-19	12-15-21	13-16-23	14-17-24	16-19-27	17-21-30
	Total Pressure		0.004	0.017	0.039	0.069	0.107	0.154	0.210	0.274	0.429	0.618
	NC		-	-	-	-	17	23	28	32	39	45
		2 way	0-1-4	2-4-8	4-6-11	5-8-13	7-10-14	8-11-16	9-12-17	11-13-18	12-14-20	13-16-22
		3A way	0-1-3	1-3-7	3-5-9	5-7-11	6-9-12	7-9-13	8-10-14	9-11-15	10-12-17	11-13-19
		3B way	0-1-2	1-2-4	2-3-6	3-4-8	4-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-9-13
		4 way	0-1-3	1-3-5	3-4-8	3-5-9	4-6-10	5-8-11	6-9-12	7-9-13	8-10-14	9-11-16
12 x 12	cfm		50	100	150	200	250	300	350	400	500	600
	Total Pressure		0.002	0.009	0.019	0.034	0.053	0.077	0.104	0.136	0.213	0.307
	NC		-	-	-	-	-	19	23	27	33	39
	Throw, ft	1 way	1-2-7	3-7-13	7-10-20	9-13-23	11-16-26	13-20-28	15-22-30	18-23-33	21-26-36	23-28-40
	Total Pressure		0.003	0.012	0.028	0.050	0.077	0.111	0.152	0.198	0.310	0.446
	NC		-	-	-	-	19	25	30	34	41	47
		2 way	1-2-6	3-6-12	6-9-15	8-12-17	10-14-19	12-15-21	13-16-23	14-17-24	16-19-27	17-21-30
		3A way	1-1-6	3-6-10	6-9-12	8-10-14	9-11-16	10-12-18	11-13-19	12-14-20	13-16-23	14-18-25
		3B way	1-1-3	2-3-7	3-5-9	5-7-10	6-8-11	7-9-12	8-10-13	8-10-14	9-11-16	10-12-18
		4 way	1-2-4	2-4-7	4-6-11	5-7-12	6-9-14	7-11-15	9-11-16	10-12-17	11-14-19	12-15-21
15 x 15	cfm		78	156	234	313	391	469	547	625	781	938
	Total Pressure		0.002	0.007	0.016	0.029	0.045	0.064	0.088	0.115	0.179	0.258
	NC		-	-	-	-	16	21	25	29	36	41
	Throw, ft	1 way	1-2-7	3-7-14	7-11-21	9-14-28	12-18-32	14-21-35	17-25-38	19-28-41	24-32-45	28-35-50
	Total Pressure		0.002	0.010	0.022	0.038	0.060	0.087	0.118	0.154	0.241	0.346
	NC		-	-	-	-	20	26	31	35	42	48
		2 way	1-3-9	5-9-15	9-13-19	12-15-22	14-17-24	15-19-26	16-20-28	18-22-30	20-24-34	22-26-37
		3A way	1-2-9	4-9-13	9-11-16	10-13-18	12-14-20	13-16-22	14-17-24	15-18-25	16-20-28	18-22-31
		3B way	1-2-5	3-5-9	5-7-11	6-9-13	8-10-14	9-11-16	10-12-17	10-13-18	12-14-20	13-16-22
		4 way	1-2-5	3-5-9	5-7-13	6-9-15	8-12-17	9-13-19	11-14-20	12-15-22	14-17-24	15-19-26
18 x 18	cfm		113	225	338	450	563	675	788	900	1125	1350
	Total Pressure		0.002	0.006	0.014	0.025	0.039	0.056	0.076	0.099	0.155	0.224
	NC		-	-	-	-	17	23	27	31	38	43
	Throw, ft	1 way	1-2-7	3-7-15	7-11-22	10-15-30	12-19-37	15-22-42	17-26-46	20-30-49	25-37-55	30-42-60
	Total Pressure		0.002	0.008	0.018	0.031	0.049	0.070	0.096	0.125	0.196	0.282
	NC		-	-	-	-	21	27	32	36	43	49
		2 way	2-4-12	7-12-18	12-16-22	15-18-26	17-20-29	18-22-32	20-24-34	21-26-36	24-29-41	26-32-45
		3A way	2-4-11	7-11-15	11-13-19	12-15-22	14-17-24	15-19-26	16-20-29	18-22-31	20-24-34	22-26-37
		3B way	1-3-7	4-7-11	7-9-13	9-11-15	10-12-17	11-13-19	12-14-20	12-15-22	14-17-24	15-19-27
		4 way	1-3-6	4-6-12	6-9-16	8-12-18	10-14-20	12-16-22	14-17-24	15-18-26	17-20-29	18-22-32

Performance Notes:

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



All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Options & Accessories

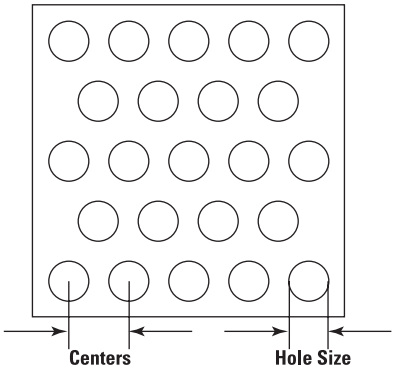
Faceplate Pattern Options

Model	P1	P2	P3	P4	L1	L2	L3	L4	L5	L6	L7	L8
MSPG	S		▼	▼								
MSLG					S	▼	▼	▼	▼	▼	▼	
MSLGP		S			S							
MSL					▼	▼	▼	▼	S	▼	▼	▼
MSLP	▼	▼	▼	▼	▼	▼	▼	S	▼	▼	▼	▼
MSD	▼	▼	▼	▼	▼	▼	▼	S	▼	▼	▼	▼
	S = Standard Faceplate Pattern											

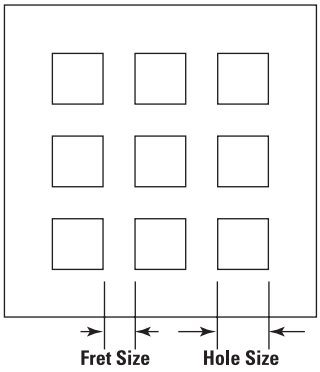
P1 = 5/16 in. [8] diameter holes staggered on 7/16 in. [11] centers
P2* = 3/16 in. [5] diameter holes staggered on 5/16 in. [8] centers
P3 = 1/4 in. [6] diameter holes staggered on 3/8 in. [10] centers
P4 = 7/16 in. [11] diameter holes staggered on 11/16 in. [17] centers

L1 = 2 in. [51] square holes, 1 in. [25] Fret
L2 = 1 1/2 in. [38] square holes, 1/2 in. [13] Fret
L3 = 1 in. [25] square holes, 1/4 in. [6] Fret
L4 = 13/16 in. [21] square holes, 3/16 in. [5] Fret
L5 = 3/4 in. [19] square holes, 1/4 in. [6] Fret
L6 = 9/16 in. [14] square holes, 3/16 in. [5] Fret
L7 = 1/2 in. [13] square holes, 3/16 in. [5] Fret
L8 = 1 x 1/4 in. [25 x 6] rectangular holes, 5/16 in. [8] Fret

* P2 pattern available only on 12 gauge steel, 12 gauge stainless steel and 10 gauge aluminum.



Faceplate Patterns	P1	P2	P3	P4	L1	L2	L3	L4	L5	L6	L7	L8
FP16	●	●	●	●	●	●	●	●	●	●	●	●
FP14	●	●	●	●	●	●	●	●	●	●	●	●
FP12	●	●	●	●	●	●	●	●	●	●	●	●
FP125	●	●	●	●	●	●	●	●	●	●	●	●
FP10	●		●	●	●	●	●	●	●	●	●	●
FP187	●		●	●	●	●	●	●	●	●	●	●
FP10AL	●	●	●	●	●	●	●	●	●	●	●	●
FP12SS	●	●	●	●	●	●	●	●	●	●	●	●

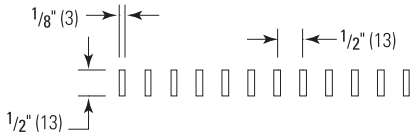


All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Core Styles - MSSL / MSBL / MSGS Series

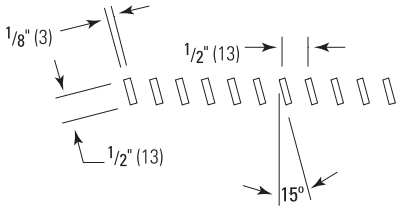
Core C1

1/8 in. [3] x 1/2 in. [13] Louvers CRS, 1/2 in. [13] Centers, 0° Deflection, Aluminum, Stainless Steel



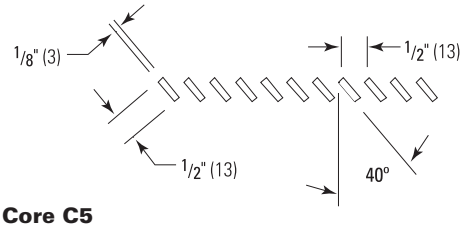
Core C2

1/8 in. [3] x 1/2 in. [13] Louvers CRS, 1/2 in. [13] Centers, 15° Deflection, Aluminum, Stainless Steel



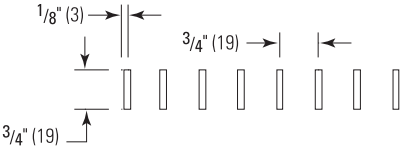
Core C3

1/8 in. [3] x 1/2 in. [13] Louvers, 1/2 in. [13] Centers, 40° Deflection



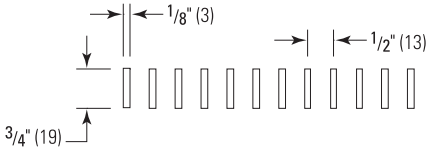
Core C4

1/8 in. [3] x 3/4 in. [19] Louvers CRS, 3/4 in. [19] Centers, 0° Deflection, Aluminum, Stainless Steel



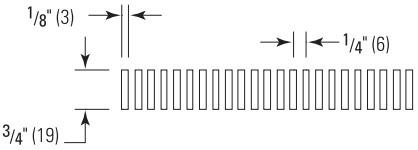
Core C5

1/8 in. [3] x 3/4 in. [19] Louvers CRS, 1/2 in. [13] Centers, 0° Deflection, Aluminum, Stainless Steel



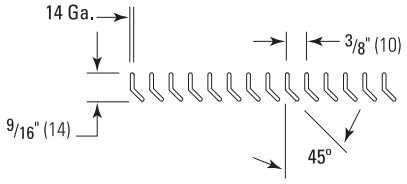
Core C6

1/8 in. [3] x 3/4 in. [19] Louvers CRS, 1/4 in. [6] Centers, 0° Deflection, Aluminum, Stainless Steel



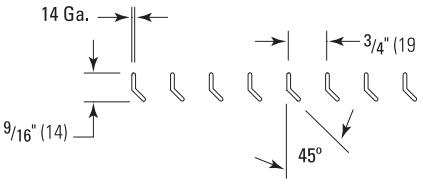
Core C7

14 Gauge Louvers CRS, 3/8 in. [10] Centers, 45° Deflection, Aluminum, Stainless Steel



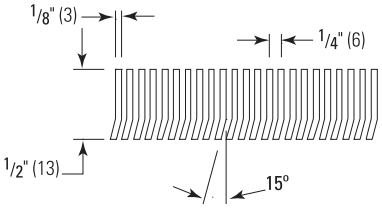
Core C8

14 Gauge Louvers CRS, 3/4 in. [19] Centers, 45° Deflection, Aluminum, Stainless Steel



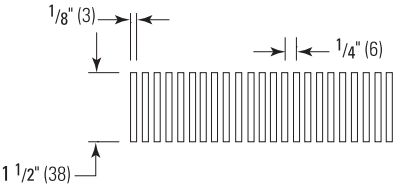
Core C9

1/8 in. [3] x 1 1/2 in. [38] CRS, 1/4 in. [6] Centers, 15° Deflection



Core C10

1/8 in. [3] x 1 1/2 in. [38] CRS, 1/4 in. [6] Centers, 0° Deflection



Note: Not all core styles are available for all products. Contact your Price sales rep for details.

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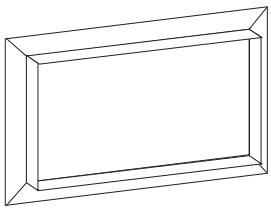
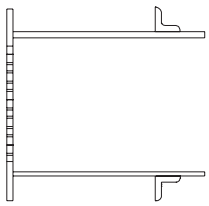
4 Sided Mounting Frames



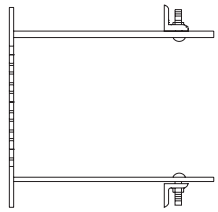
Option MF1

1 in. x 1 in. x 3/16 in. [25 x 25 x 5] hot rolled steel loose angle frame for field welding.



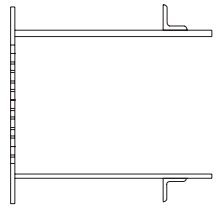
Option MF2

1 1/2 in. x 1 1/2 in. x 3/16 in. [38 x 38 x 5] hot rolled steel loose angle frame for field bolting.



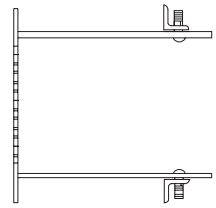
Option MF3

1 in. x 1 in. x 1/8 in. [25 x 25 x 3] hot rolled steel loose angle frame for field welding.



Option MF4

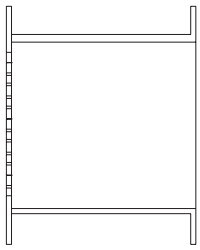
1 1/2 in. x 1 1/2 in. x 1/8 in. [38 x 38 x 3] hot rolled steel loose angle frame for field bolting.



Sleeve

Option S5

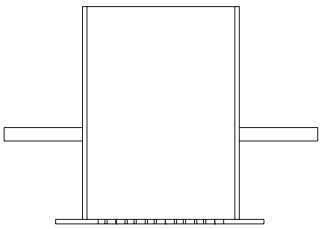
Bent Out Rear Flange



Fastening Methods

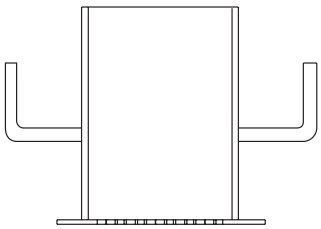
Option MR6

3/4 in. x 3 in. [19 x 76] diameter masonry rods



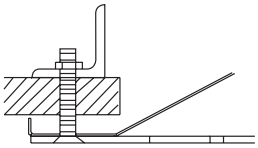
Option MR7

3/4 in. [19] diameter bent out masonry tabs



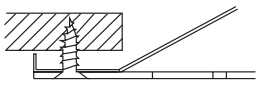
Option CS8

Rear angle frame or rear plate with weldnuts and tamperproof bolts



Option CS

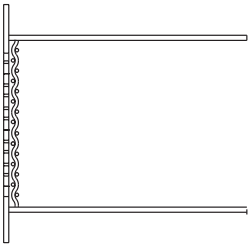
Countersunk holes in face with tamperproof screws



Wire Mesh

Option WM

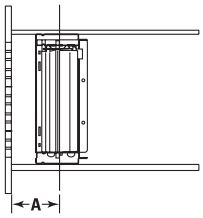
10 Gauge x 3/8 in. [10] clear opening steel wire mesh



Dampers

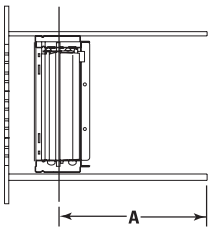
Option 3BF

Front operated opposed blade damper



Option 3BR

Rear operated opposed blade damper



A = 4 in. for sleeve length 10 in. and up.

Note: 3BF and 3BR dampers are intended for trim balancing only.

Use of these dampers for gross balancing will result in a significant increase in sound level.

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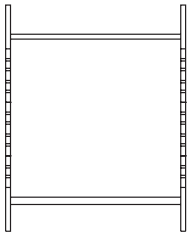
Transfer Grille

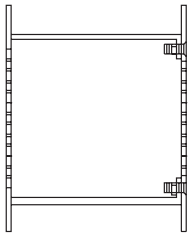
Option TG14

Matching welded rear plate



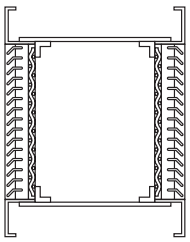
Option TG15

Matching rear plate with weldnuts and tamperproof bolts



Option TGCS

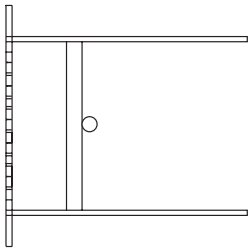
Matching rear grille with countersunk holes in frame with #8 x 1 1/4 in. (MSBL) or #12 x 1 1/4 in. (MSSL) long tamperproof screws. Only available on MSSL & MSBL.



Barrier Bar Styles

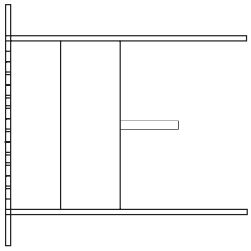
Options BB16 - 1/2 in. [13] diameter
Options BB17 - 3/4 in. [19] diameter
Options BB18 - 1 in. [25] diameter

Hot rolled steel bars on maximum 6 in. [152] vertical and 12 in. [305] horizontal centers.



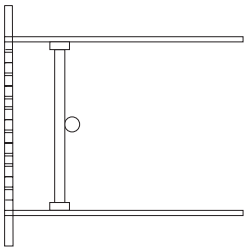
Option BB22

2 in. x 1/4 in. [51 x 6] flat hot rolled steel bars on maximum 6 in. [152] vertical and 12 in. [305] horizontal centers.



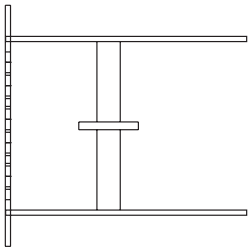
Options BB19 - 1/2 in. [13] diameter
Options BB20 - 3/4 in. [19] diameter
Options BB21 - 1 in. [25] diameter

Hardened steel bars in sockets on maximum 6 in. [152] vertical and 12 in. [305] horizontal centers.



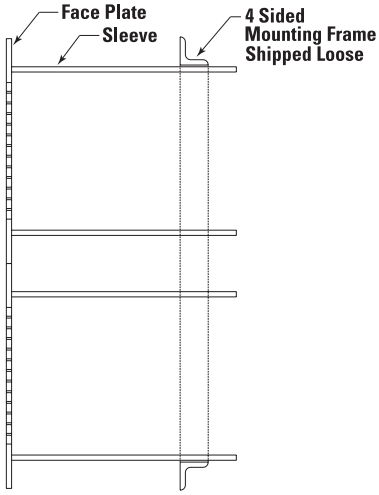
Option BB23

3/4 in. [19] diameter hot rolled steel vertical bars on maximum 6 in. [152] centers through 2 in. x 1/4 in. [51 x 6] flat horizontal bars on maximum 12 in. [305] centers.



Hardened steel bars are rated at 20 - 38 Rockwell C or 223 - 363 Brinell.

Oversize Grilles



Grilles larger than the maximum dimensions indicated are available in multiple sections. Structural support and fastening of multiple grille sections is the responsibility of the installing contractor. Price assumes no responsibility regarding the structural integrity of the assembly.

Oversize grilles supplied in multiple sections will be provided with a one-piece rear mounting frame sized to fit the overall duct dimension. The mounting frame is supplied loose for field welding.

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Quick Selection Guide - Product Configuration

Model	4 Sided Mounting Frames				Sleeve Option	Fastening Methods				Wire Mesh	Dampers		Transfer Grilles			Barrier Bar Styles							
	MF1	MF2	MF3	MF4	S5	MR6	MR7	CS8	CS	WM	3BF	3BR	TG14	TG15	TGCS	BB16	BB17	BB18	BB19	BB20	BB21	BB22	BB23
MSPG	S	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼		▼	▼	▼	▼	▼	▼	▼	▼
MSLG	S	▼	▼	▼	▼	▼	▼	▼	▼	S	▼	▼				▼	▼	▼	▼	▼	▼	▼	▼
MSLGP	S							▼	▼														
MSL	▼	▼	S	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼		▼	▼	▼	▼	▼	▼	▼	▼
MSLP									▼														
MSSG	▼	▼	S	▼	▼	▼	▼	▼	▼	S	▼	▼	▼	▼		▼	S	▼	▼	▼	▼	▼	▼
MSSL	▼	▼	S	▼	▼	▼	▼	▼	▼	S	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
MSBL	▼	▼	S	▼	▼	▼	▼	▼	▼[3]	S	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
MSGS		S				▼	▼					▼				▼	▼	▼	▼	▼	▼	▼	▼
MSD								▼	▼[2]		▼												
MSBG	S					▼	▼			▼						S	▼	▼	▼	▼	▼	▼	▼
MSRRG	S	▼	▼	▼	▼	▼	▼		▼			▼				▼	▼	▼	▼	▼	▼	▼	▼
MSDRBG		▼				▼	▼																
MSRRP	S	▼	▼	▼	▼	▼	▼					▼				▼	▼	▼	▼	▼	▼	▼	▼
MSRRCD	▼	▼	▼	▼				▼	▼														

1. Option CS supplied as #12 x 2″ long tamperproof screw with choice of Spanner or Torx with Pin drive and plated steel or stainless material.
2. MSD: #12 x 1.5″ long Spanner stainless steel tamperproof screw.
3. MSBL: #8 x 2″ long Spanner or Torx with Pin stainless steel tamperproof screw.

Quick Selection Guide - Construction Materials

Model	Face								Sleeve								Backer Plate				
	FP16	FP14	FP12	FP125AL	FP10	FP187	FP10AL min. security	FP12SS	S16	S14	S12	S125AL	S10	S187	S10AL min. security	S12SS	BP12	BP10	BP187	BP250	BP250HS
MSPG			▼	▼	▼	S	▼	▼	S	▼	▼	▼	▼	S	▼	▼					
MSLG			▼	▼	▼	S	▼	▼	S	▼	▼	▼		S	▼	▼	▼	S	▼	▼	▼
MSLGP						S								S			S				
MSL		▼	▼	▼	▼	S	▼	▼		▼	▼	▼	▼	S	▼	▼					
MSLP		S	▼	▼	▼	▼	▼	▼													
MSSG		▼	▼	▼	S	▼	▼	▼			▼	▼	S	▼	▼						
MSSL		S	▼	▼	▼	▼	▼	▼		S	▼	▼	▼	▼	▼						
MSBL	S	▼								S	▼	▼									
MSGS						S					S										
MSD		▼	S	▼	▼		▼														
MSBG														S	▼						
MSRRG						S					▼	▼	▼	S							
MSDRBG												S									
MSRRP						S								S							
MSRRCD			S								S										

S = Standard feature supplied with Model ▼ = Optional Blank = not available

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Suggested Specification

Louvered Face

510 / 610 / 710 — Supply Grilles

Furnish and install Price model (510 steel / 610 aluminum / 710 stainless steel) supply grilles of the sizes and mounting types indicated on the plans and outlets schedule. Grilles shall be single deflection type with one set of fully adjustable deflection blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long/short) dimension of the grille, as indicated in the outlet schedule. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

510D / 610D / 710D — Supply Registers

Furnish and install Price model (510 steel / 610 aluminum / 710 stainless steel) supply registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be single deflection type with one set of fully adjustable deflection blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long/short) dimension of the registers, as indicated in the outlet schedule. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 610DAL, optional stainless steel for 710DSS). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 610DAL, 304 stainless 710DSS). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

520 / 620 / 720 — Supply Grilles

Furnish and install Price model (520 steel / 620 aluminum / 720 stainless steel) supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be double deflection type with two sets of fully adjustable deflection blades spaced 3/4 in. [19] on center. The front set of blades shall run parallel to the (long/short) dimension of the grille, as indicated in the outlet schedule. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat).

520D / 620D / 720D — Supply Registers

Furnish and install Price model (520D steel / 620D aluminum / 720D stainless steel) supply registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be double deflection type with two sets of fully adjustable deflection blades spaced 3/4 in. [19] on center. The front set of blades shall run parallel to the (long/short) dimension of the register, as indicated in the outlet schedule. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 620DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 620DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

530 / 630 / 730 — Return Grille

Furnish and install Price model (530 steel / 630 aluminum / 730 stainless steel) return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

530D / 630D / 730D — Exhaust Registers

Furnish and install Price model (530 steel / 630 aluminum / 730 stainless steel) exhaust registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long / short) dimension of the register. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 630DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 630DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

535 / 635 / 735— Return Grille

Furnish and install Price model (535 steel / 635 aluminum / 735 stainless steel) exhaust grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center. The blades shall run parallel to the (long/short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

535D / 635D / 735D — Exhaust Registers

Furnish and install Price model (535 steel / 635 aluminum / 735 stainless steel) exhaust registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center. The blades shall run parallel to the (long / short) dimension of the register. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 635DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 630DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

540 / 540S / 640 / 640S — Supply Register

Furnish and install Price model (540 / 540S / 640 / 640S steel) supply registers of the sizes and mounting types indicated on the plans and outlets schedule. Registers shall be single deflection type with one set of fully adjustable deflection blades spaced 3/4 in. [19] on center. The blades shall run parallel to the short dimension of the register, as indicated in the outlet schedule. The volume control multi louver blades shall run parallel to the long dimension. The grille shall be finished in (B12 White Powder Coat).

All Metric dimensions ( ) are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Louvered Face

510Z / 610Z / 710Z — Return Grilles

Furnish and install Price model (510Z steel / 610Z aluminum / 710Z stainless steel) return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 0 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat / #4 finish on the frame with blades and damper being a 2B finish). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

510ZD / 610ZD / 710ZD — Exhaust Registers

Furnish and install Price model (510ZD steel / 610ZD aluminum / 710ZD stainless steel) exhaust registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be 0 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long / short) dimension of the register. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 610ZDAL / optional stainless steel 710ZDSS). The damper shall be operable from the diffuser face. The register shall be finished in (B12 White Powder Coat / #4 finish on the frame with blades and damper being a 2B finish). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SDG / SDGE — Spiral Duct Grille

Furnish and install Price model SDG/SDGE supply registers of sizes and mounting types indicated on the plans and outlet schedule. Register shall be double deflection type with two sets of fully adjustable deflection blades spaced 3/4 in. [19] on center. The front blades shall run parallel to the short dimension of the register, as indicated in the outlet schedule. The air-scoop shall be adjusted via the operator on the side frame. The register shall be finished in B12 White Powder Coat / galvanized steel / clear anodized. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SDGR / SDGER — Spiral Duct Grille (Return)

Furnish and install Price model SDGR/SDGER return grilles of sizes and mounting types indicated on the plans and outlet schedule. Perforated face shall be securely attached to steel, galvanized steel or aluminum grille frame. The grille shall be finished in B12 White Powder Coat / galvanized steel / clear anodized. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Louvered Face — Fire-Rated

530-FR — Return Grille, Fire-Rated

Furnish and install Price model 530-FR return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on centre. The blades shall run parallel to the (long / short) dimension of the grille. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.
- Optional T-bar Lay-in Panel.

535-FR — Return Grille, Fire-Rated

Furnish and install Price model 535-FR return grille of the sizes and mounting types indicated on the plans and outlet schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Grilles shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on centre. The blades shall run parallel to the (long/short) dimension of the grille. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 White Powder Coat.

Options

- Volume adjustment for balancing.
- 212 °F [100° C] fusible link.
- Optional finishes available.
- Optional T-bar Lay-in Panel.

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Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Eggcrate Face / Perforated Face / Filter Grilles

Eggcrate Face
80 — Return Grille

Furnish and install Price model 80 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be of aluminum construction, consisting of aluminum 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] grid (eggcrate core) and an extruded aluminum border. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- The intergral volume control damper shall be of the opposed blade type and shall be constructed of coated steel / aluminum.

81 — Return Grille

Furnish and install Price model 81 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be of aluminum construction, consisting of two aluminum ½ in. x ½ in. x ½ in. [13 x 13 x 13] grids (eggcrate core), stacked to make a ½ in. x ½ in. x 1 in. [13 x 13 x 25] core and an extruded aluminum border. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Optional core–one-piece ½ in. x ½ in. x 1 in. [13 x 13 x 25] aluminum grid (eggcrate).
- The integral volume control damper shall be of the opposed blade type and shall be constructed of coated steel / aluminum.

82 — Return Grille

Furnish and install Price model 82 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be of aluminum construction, consisting of aluminum 1 in. x 1 in. x 1 in. [25 x 25 x 25] grid (eggcrate core) and an extruded aluminum border. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- The intergral volume control damper shall be of the opposed blade type and shall be constructed of coated steel / aluminum.

85 — Return Grille

Furnish and install Price model 85 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be aluminum construction, consisting of aluminum grid (eggcrate core) and an extruded aluminum border. The grille shall be finished in B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Perforated Face
10 — Return Grille

Furnish and install Price model (10 steel/ 10A aluminum) return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall consist of a perforated core with 3/16 in. [5] holes on 1/4 in. [6] centers staggered 60 degrees and an extruded aluminum border. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Filter Grilles - Louvered
530FF / 630FF / 730FF
— Filter Return Grille

Furnish and install Price model (530FF steel / 630FF aluminum) filter return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long / short) dimension of the grille. The border shall be mounted to the filter frame with 1/4 turn quick-release fasteners. The mounting frame shall accept a standard 1 in. [25] filter media. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

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Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Eggcrate Face / Perforated Face / Filter Grilles

535FF / 635FF / 735FF — Filter Return Grille

Furnish and install Price model (535FF steel / 635FF aluminum / 735FF stainless steel) filter return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center. The blades shall run parallel to the (long / short) dimension of the grille. The border shall be mounted to the filter frame with 1/4 turn quick-release fasteners. The mounting frame shall accept a standard 1 in. [25] filter media. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Filter Grilles - Eggcrate 80FF — Filter Return Grilles

Furnish and install Price model 80FF filter return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall consist of aluminum 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] grid (eggcrate core) and a formed steel border and filter frame. The mounting frame shall be designed to accept a standard 1 in. [25] or 2 in. [51] filter media. Unit is to be complete with 1/4 turn quick-release fasteners. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Filter Grilles - Perforated 10FF — Filter Return Grille

Furnish and install Price model 10FF filter return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall consist of a perforated steel core with 3/16 in. [5] holes on 1/4 in. [6] centers staggered 60 degrees and a formed steel border and filter frame. The mounting frame shall be designed to accept a standard 1 in. [25] or 2 in. [51] filter media. Unit is to be complete with 1/4 turn quick-release fasteners. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

80-FR, 81-FR, 82-FR — Return Grille, Fire-Rated

Furnish and install Price model 80-FR return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Grilles shall consist of a formed steel border and filter frame, and an aluminum eggcrate core from the following: 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] 80 core, 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] stacked 81 core, 1 in. x 1 in. x 1 in. [25 x 25 x 25] 82 core. Diffuser shall incorporate a non-adjustable, non-asbestos, curtain-type ceiling radiation damper and a 165 °F [74 °C] fusible link. Finish shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- 212 °F [100° C] fusible link.
- Optional finishes available.
- Optional T-bar Lay in steel panel.

10-FR — Return Grille, Fire-Rated

Furnish and install Price model 10-FR return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Grilles shall consist of a perforated steel core with 3/16 in. [5] holes 1/4 in. [6] centers staggered 60 degrees and a steel frame. Diffuser shall incorporate a non-adjustable, non-asbestos, curtain-type ceiling radiation damper and a 165 °F [74 °C] fusible link. Finish shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- 212 °F [100° C] fusible link.
- Optional finishes available.

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Eggcrate Face / Perforated Face / Filter Grilles

530FF-FR — Filter Return Grille, Fire-Rated

Furnish and install Price model 530FF-FR filter return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on centre. The blades shall run parallel to the (long / short) dimension of the grille. The border shall be mounted to the filter frame with 1/4 turn quick-release fasteners and a hinge-tab mechanism. The mounting frame shall accept a standard 1 in. [25] filter media. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100° C] fusible link.
- Optional finishes available.

535FF-FR — Filter Return Grille, Fire-Rated

Furnish and install Price model 535FF-FR filter return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Grilles shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on centre. The blades shall run parallel to the (long / short) dimension of the grille. The border shall be mounted to the filter frame with 1/4 turn quick-release fasteners. The mounting frame shall accept a standard 1 in. [25] filter media. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100° C] fusible link.
- Optional finishes available.

80FF-FR, 81FF-FR, 82FF-FR — Filter Return Grille, Fire-Rated

Furnish and install Price model 80FF-FR filter return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Grilles shall consist of formed steel border and filter frame, and an aluminum eggcrate core from the following: 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] 80 core, 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] stacked 81 core, 1 in. x 1 in. x 1 in. [25 x 25 x 25] 82 core. A hinge-tab mechanism allows hinging or removal of the grille from the filter frame to ease cleaning of the grille. The mounting frame is designed to accept a standard 1 in. [25] filter media. Unit is to be complete with 1/4turn quick-release fasteners. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100° C] fusible link.
- Optional finishes available.

10FF-FR — Filter Return Grille, Fire-Rated

Furnish and install Price model 10FF-FR filter return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Grilles shall consist of a perforated steel core with 3/16 in. [5] holes on 1/4 in. [6] centres staggered 60 degrees and a formed steel border and filter frame. A hinge-tab mechanism allows hinging or removal of the grille from the filter frame to ease cleaning of the grille. The mounting frame is designed to accept a standard 1 in. [25] filter media. Unit is to be complete with 1/4 turn quick-release fasteners. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100° C] fusible link.
- Optional finishes available.

Reversible Core Grille

RCG

Furnish and install Price model RCG supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall have multiple deflection fixed louver type blades spaced $^{5}/_{16}$ in. [8] on center. The outlet shall have extruded aluminum border and blades held in place with aluminum mandrel tubes. The grille core shall be field removable from the border to facilitate inversion or reversing to modify the discharge deflection. The core shall be held into the border with steel spring clips. Blades shall run parallel to the long dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

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Imperial dimensions are converted to metric and rounded to the nearest millimeter.

Gym Grilles - Steel Construction

90 / 90FH Gym Return Grille

Furnish and install Price model 90 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 0 degree deflection fixed louver type with blades spaced 3/8 in. [10] on center. The outlet shall have 14 gauge steel blades and heavy duty steel support bars and frame. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional: The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

91 / 91FH Gym Return Grille

Furnish and install Price model 91 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/8 in. [10] on center. The outlet shall have 14 gauge steel blades and heavy duty steel support bars and frame. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional: The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

93 Gym Return Grille

Furnish and install Price model 93 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. grilles shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center. the outlet shall have 14 gauge steel blades and heavy duty steel support bars and frame. Blades shall run parallel to the (long / short) dimension of the grille. the grille shall be finished in (B12 White PowderCoat / B15 Aluminum Powder Coat).

Optional: The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

95 / 95FH Gym Return Grille

Furnish and install Price model 95 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 0 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The outlet shall have 14 gauge steel blades and heavy duty steel support bars and frame. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional: The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

96 / 96FH Gym Return Grille

Furnish and install Price model 96 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The outlet shall have 14 gauge steel blades and heavy duty steel support bars and frame. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional: The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

910 Single Deflection Grille

Furnish and install Price model 910 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 to –45 degree individually adjustable deflection blades spaced 1/2 in. [13] on center. The outlet shall have a 14 gauge steel blades and heavy duty steel support bars and frame. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional: The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be coated steel.

920 Double Deflection Grille

Furnish and install Price model 920 grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be double deflection. Front blades shall be individually adjustable from 45 to –45 degrees, spaced 1/2 in. [13] on center. Rear blades shall be individually adjustable, spaced 3/4 in. [19] on center. The outlet shall have 14 gauge steel blades and heavy duty steel support bars and frame. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional: The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be coated steel.

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Gym Grilles - Extruded Aluminum Heavy Duty

97 Return Grille

Furnish and install Price model 97 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 0 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center. The outlet shall have heavy extruded aluminum border and blades held in place with aluminum mandrel tubes not to exceed 12 in. [305] on center. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional: The model (VCS3 / VCS3AL) integral volume control damper shall be of the opposed blade type and shall be constructed of (cold rolled steel / rollformed aluminum). The damper shall be operable from the register face. The damper shall be (coated steel / mill finish aluminum).

98 Return Grille

Furnish and install Price model 98 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center. The outlet shall have heavy extruded aluminum border and blades held in place with aluminum mandrel tubes not to exceed 12 in. [305] on center. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional: The model (VCS3 / VCS3AL) integral volume control damper shall be of the opposed blade type and shall be constructed of (cold rolled steel / rollformed aluminum). The damper shall be operable from the register face. The damper shall be (coated steel / mill finish aluminum).

99 Return Grille

Furnish and install Price model 98 return grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 30 degree deflection fixed louver type with blades spaced 1/2" (13) on center. The outlet shall have heavy extruded aluminum border and blades held in place with aluminum mandrel tubes not to exceed 12" (305) on center. Blades shall run parallel to the (long / short) dimension of the grille. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat).

Optional: The model (VCS3 / VCS3AL) integral volume control damper shall be of the opposed blade type and shall be constructed of (cold rolled steel / rollformed aluminum). The damper shall be operable from the register face. The damper shall be (coated steel / mill finish aluminum).

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Airfoil Series Grilles - Extruded Aluminum

21 Supply Grilles

Furnish and install Price model 21 supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be single deflection type with one set of fully adjustable airfoil shaped deflection blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long/short) dimension of the grille. Both blades and border shall be of heavy extruded aluminum construction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

21D Supply Registers

Furnish and install Price model 21D supply registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be single deflection type with one set of fully adjustable airfoil shaped deflection blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long / short) dimension of the register. Both blades and border shall be of heavy extruded aluminum construction. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 21DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 21DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

22 Supply Grilles

Furnish and install Price model 22 supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be double deflection type with two sets of fully adjustable airfoil shaped deflection blades spaced 3/4 in. [19] on center. The front set of blades shall run parallel to the (long / short) dimensions of the grille. Both blades and border shall be of heavy extruded aluminum construction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

22D Supply Registers

Furnish and install Price model 22D supply registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be double deflection type with two sets of fully adjustable airfoil shaped deflection blades spaced 3/4 in. [19] on center. The front set of blades shall run parallel to the (long / short) dimension of the register. Both blades and border shall be of heavy extruded aluminum construction. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 22DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 22DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

31 Supply Grilles

Furnish and install Price model 31 supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be single deflection type with one set of fully adjustable airfoil shaped deflection blades spaced 1/2 in. [13] on center. The blades shall run parallel to the (long/short) dimension of the grille. Both blades and border shall be of heavy extruded aluminum construction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

31D Supply Registers

Furnish and install Price model 31D supply registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be single deflection type with one set of fully adjustable airfoil shaped deflection blades spaced 1/2 in. [13] on center. The blades shall run parallel to the (long / short) dimension of the register. Both blades and border shall be of heavy extruded aluminum construction. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 31DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 31DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

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Airfoil Series Grilles - Extruded Aluminum

32 Supply Grilles

Furnish and install Price model 32 supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be double deflection type with two sets of fully adjustable airfoil shaped deflection blades. The front set of blades shall be spaced 1/2 in. [13] on center and the rear set spaced 3/4 in. [19] on center. The front set of blades shall run parallel to the (long / short) dimension of the grille. Both blades and border shall be of heavy extruded aluminum construction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

32D Supply Registers

Furnish and install Price model 32D supply registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be double deflection type with two sets of fully adjustable airfoil shaped deflection blades. The front set of blades shall be spaced 1/2 in. [13] on center and the rear set spaced 3/4 in. [19] on center. The front set of blades shall run parallel to the (long/short) dimension of the register. Both blades and border shall be of heavy extruded aluminum construction. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 32DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 32DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

60 Series Return Grille

Furnish and install Price model 60 exhaust grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long/ short) dimension of the grille, as indicated in the outlet schedule. Both blades and border shall be of heavy extruded aluminum construction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

60D Series Exhaust Registers

Furnish and install Price model 60D exhaust registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long/short) dimension of the register, as indicated in the outlet schedule. Both blades and border shall be of heavy extruded aluminum construction. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 60DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 60DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

70 Series

Furnish and install Price model 70 exhaust grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center. The blades shall run parallel to the (long / short) dimension of the grille, as indicated in the outlet schedule. Both blades and border shall be of heavy extruded aluminum construction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

70D Series Exhaust Registers

Furnish and install Price model 70D exhaust registers of the sizes and mounting types indicated on the plans and outlet schedule. Registers shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. on center. The blades shall run parallel to the (long/short) dimension of the register, as indicated in the outlet schedule. Both blades and border shall be of heavy extruded aluminum construction. The integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel (optional aluminum construction 70DAL). The damper shall be operable from the register face. The damper shall be coated steel (mill finish aluminum 70DAL). The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

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Airfoil Series Filter Grilles - Extruded Aluminum

60FH Series Filter

Furnish and install Price model 60FH filter return grilles of the sizes indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/4 in. [19] on center. The blades shall run parallel to the (long/short) dimension of the grille, as indicated in the outlet schedule. Blades, border and filter frame shall be of heavy extruded aluminum construction. The grille shall use a continuous length piano type hinge and 1/4 turn quick-release fasteners for access. The filter frame shall accept 1 in. [25] filter media. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

70FH Series Filter

Furnish and install Price model 70FH filter return grilles of the sizes indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center. The blades shall run parallel to the (long/short) dimension of the grille, as indicated in the outlet schedule. Blades, border and filter frame shall be of heavy extruded aluminum construction. The grille shall use a continuous length piano type hinge and 1/4 turn quick-release fasteners for access. The filter frame shall accept 1 in. [25] filter media. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

80FH Filter Return Grilles

Furnish and install Price model 80 FH filter return grilles of the sizes indicated on the plans and outlet schedule. The grille core shall be 1/2 in. x 1/2 in. x 1/2 in. [13 x 13 x 13] aluminum grid (eggcrate core). The border and filter frame shall be of heavy extruded aluminum construction. The grille shall use a continuous length piano type hinge and 1/4 turn quick-release fasteners for access. The filter frame shall accept 1 in. [25] filter media. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

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Industrial Grilles - Louvered Face, Extruded Aluminum

151 Supply Grilles

Furnish and install Price model 151 supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be single deflection type with one set of fully adjustable 1 1/4 in. [32] deep streamlined deflection blades spaced 1 1/2 in. [38] on center. The blades shall run parallel to the (long/short) dimension of the grille, as indicated in the outlet schedule. Blades, border and mullions (where required) shall be of heavy extruded aluminum construction. Individually adjustable blades shall index and lock into position at 0, 15, 30 and 45 degree deflections in either direction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat / Mill Finish). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

The optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

Or: The optional Heavy Duty balancing damper shall be of opposed blade type and shall be constructed from a minimum 18 gage thick cold rolled steel. Damper frame corners shall overlap and be of welded construction for added strength. The damper shall be operable from the register face. The damper shall come fitted with a face accessible screw type blade locking mechanism. The damper shall be coated steel.

152, 152G Supply Grilles

Furnish and install Price model 152 supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be double deflection type with two sets of fully adjustable 1 1/4 in. [32] deep streamlined deflection blades spaced 1 1/2 in. [38] on center. The front set of blades shall run parallel to the (long/short) dimension of the grille, as indicated in the outlet schedule. Blades, border and mullions (where required) shall be of heavy extruded aluminum construction. Individually adjustable blades shall index and lock into position at 0, 15, 30 and 45 degree deflections in either direction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat / Mill Finish). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714. The optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

Or: The optional Heavy Duty balancing damper shall be of opposed blade type and shall be constructed from a minimum 18 gage thick cold rolled steel. Damper frame corners shall overlap and be of welded construction for added strength. The damper shall be operable from the register face. The damper shall come fitted with a face accessible screw type blade locking mechanism. The damper shall be coated steel. Note: For gang operated blades add: (Front / Rear) blades shall be linked and gang operable from a face mounted pole operator. Blades, frame, pole operator and movement bar shall be constructed from extruded aluminum.

301 Industrial Supply Grilles

Furnish and install Price model 301 supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be single deflection type with one set of fully adjustable, 3 in. [76] deep, AIRFOIL SHAPED deflection blades spaced 3 in. [76] on center. The blades shall run parallel to the (long/short) dimension of the grille, as indicated in the outlet schedule. The blades shall be of heavy extruded aluminum with a 1 1/4 in. [32] flat border of heavy gauge steel. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714. The optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

Or: The optional Heavy Duty balancing damper shall be of opposed blade type and shall be constructed from a minimum 18 gage thick cold rolled steel. Damper frame corners shall overlap and be of welded construction for added strength. The damper shall be operable from the register face. The damper shall come fitted with a face accessible screw type blade locking mechanism. The damper shall be coated steel.

302 / 302G Industrial Supply Grilles

Furnish and install Price model 302 supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be double deflection type with two sets of fully adjustable, 3 in. [72] deep, airfoil shaped deflection blades spaced 3 in. [72] on center. The front set of blades shall run parallel to the (long / short) dimension of the grille. The blades shall be of heavy extruded aluminum construction with a 1 1/4 in. [32] flat border of heavy gauge steel. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714. The optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

Or: The optional Heavy Duty balancing damper shall be of opposed blade type and shall be constructed from a minimum 18 gage thick cold rolled steel. Damper frame corners shall overlap and be of welded construction for added strength. The damper shall be operable from the register face. The damper shall come fitted with a face accessible screw type blade locking mechanism. The damper shall be coated steel. Note: For gang operated blades add - (Front/Rear) blades shall be linked and gang operable from a face mounted pole operator (Model 302G).

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Industrial Grilles

Modular Core MIG Industrial Supply Grilles

Furnish and install Price model MIG supply grilles of the sizes and mounting types indicated on the plans and outlet schedule. The outlets shall consist of single or multiple square double deflection grilles mounted to a heavy gauge steel frame with quick-release fasteners. Grilles shall be double deflection type with two sets of fully adjustable 1¼ in. [32] deep streamlined deflection blades spaced 1½ in. [38] on centre. The front set of blades shall run parallel to the (long/short) dimension of the grille, as indicated in the outlet schedule when shipped from the factory. Individually adjustable blades shall index and lock into position at 0, 15, 30 and 45 degree deflection. Blades and grille shall be of heavy extruded aluminum construction. The grille shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

High Capacity Drum Louvers HCD1

Furnish and install Price model HCD1 supply outlets of the sizes and models indicated on the plans and outlet schedule. The outlets shall consist of individually adjustable spread control vanes housed within a rotatable drum. Curved outer drum and vanes shall be extruded aluminum, other components shall be steel. The drum pivot mechanism shall incorporate a positive positioning detent device to hold field adjusted drum angles of up to 30° off center. Adjustable vanes are to pivot and maintain blade setting. The border shall be constructed of formed steel with welded, reinforced corners for extra strength. Screw holes shall be countersunk for aesthetic appeal. The unit shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714. The optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

Or: The optional Heavy Duty balancing damper shall be of opposed blade type and shall be constructed from a minimum 18 gage thick cold rolled steel. Damper frame corners shall overlap and be of welded construction for added strength. The damper shall be operable from the register face. The damper shall come fitted with a face accessible screw type blade locking mechanism. The damper shall be coated steel.

HCD2

Furnish and install Price model HCD2 supply outlets of the sizes and models indicated on the plans and outlet schedule. The outlets shall consist of individually adjustable spread control vanes housed within a rotatable drum. The vanes shall be bisected by a center divider, allowing separate adjustment of top and bottom blades. The end panels of the drum shall incorporate spread control members to enhance pattern control. Curved outer drum and vanes shall be extruded aluminum, other components shall be steel. The drum pivot mechanism shall incorporate a positive positioning detent device to hold field adjusted drum angles of up to 30° off center. Adjustable vanes are to pivot and maintain blade setting. The border shall be constructed of formed steel with welded, reinforced corners for extra strength. Screw holes shall be countersunk for aesthetic appeal. The unit shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714. The optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

Or: The optional Heavy Duty balancing damper shall be of opposed blade type and shall be constructed from a minimum 18 gage thick cold rolled steel. Damper frame corners shall overlap and be of welded construction for added strength. The damper shall be operable from the register face. The damper shall come fitted with a face accessible screw type blade locking mechanism. The damper shall be coated steel.

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Industrial Grilles

AHCD1

Furnish and install Price model AHCD1 supply outlets of the sizes and models indicated on the plans and outlet schedule. The outlets shall consist of individually adjustable spread control vanes housed within a rotatable drum. Drum, frame and vanes shall be aluminum construction. The drum pivot mechanism shall incorporate a positive positioning detent device to hold field adjusted drum angles of up to 30° off center. Adjustable vanes are to pivot and maintain blade setting. The border shall be constructed of formed steel with welded, reinforced corners for extra strength. Screw holes shall be countersunk for aesthetic appeal. The unit shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). The optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

Or: The optional Heavy Duty balancing damper shall be of opposed blade type and shall be constructed from a minimum 18 gage thick cold rolled steel. Damper frame corners shall overlap and be of welded construction for added strength. The damper shall be operable from the register face. The damper shall come fitted with a face accessible screw type blade locking mechanism. The damper shall be coated steel.

AHCD2

Furnish and install Price model AHCD2 supply outlets of the sizes and models indicated on the plans and outlet schedule. The outlets shall consist of individually adjustable spread control vanes housed within a rotatable drum. The vanes shall be bisected by a center divider, allowing separate adjustment of top and bottom blades. The end panels of the drum shall incorporate spread control members to enhance pattern control. Drum, frame and vanes shall be aluminum construction. The drum pivot mechanism shall incorporate a positive positioning detent device to hold field adjusted drum angles of up to 30° off center. Adjustable vanes are to pivot and maintain blade setting. The border shall be constructed of formed steel with welded, reinforced corners for extra strength. Screw holes shall be countersunk for aesthetic appeal. The unit shall be finished in (B12 White Powder Coat / B15 Aluminum Powder Coat). Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714. The optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be operable from the register face. The damper shall be coated steel.

Or: The optional Heavy Duty balancing damper shall be of opposed blade type and shall be constructed from a minimum 18 gage thick cold rolled steel. Damper frame corners shall overlap and be of welded construction for added strength. The damper shall be operable from the register face. The damper shall come fitted with a face accessible screw type blade locking mechanism. The damper shall be coated steel.

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Nozzles

Air Nozzle Diffuser

AND —

Furnish and install Price model AND air nozzle diffuser of sizes and mounting styles shown on the plans and air distribution schedule. Jet nozzle assembly shall be constructed of a series of concentric round nozzles and have the ability to swivel in the range of range of ± 30°. Air nozzle diffuser shall be steel construction with white powder coat finish. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

MSBL

Furnish and install Price model MSBL steel medium security (supply/return) bent fixed louver grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 45 degree deflection fixed louver type with blades spaced 3/8 in. [10] on center supported by 14 gauge vertical support mullions located on 6 in. centers with a 10 gauge wire mesh (2.5 mesh/inch - 44% free area). The face frame shall be 16 gauge hot rolled steel. Blades shall run parallel to the (long/short) dimension of the grille. The grille is to be attached to a steel wall sleeve with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the rear of the register.

MSGS

Furnish and install Price model MSGS steel maximum security (supply/return) straight fixed louver grilles with steel rods of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 0 / 15 degree deflection fixed louver type with blades spaced 1/4 in. [6] on center supported by hardened steel rods located on 6 in. centers. The face frame shall be 3/16 in. [5] hot rolled steel. Blades shall run parallel to the long dimension of the grille. The grille is to be attached to a 12 gauge hot rolled steel wall sleeve with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the (front/rear) of the register. 304 Stainless steel and aluminum (minimum security) grilles to use dampers of the same construction material.

MSD

Furnish and install Price model MSD steel minimum security supply diffuser of the sizes and mounting types indicated on the plans and outlet schedule. The faceplate shall consist of 12 gauge hot rolled steel with 13/16 in. x 13/16 in. [21 x 21] square holes and 3/16 in. [5] frets. The faceplate is to be attached with tamperproof screws in countersunk screw holes at a maximum distance of 10 in. [254]. The diffuser shall be Price model SMD steel directional louvered face diffuser. Diffusers shall consist of an outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the frame assembly. An inner core assembly consisting of fixed louvers capable of producing the air flow discharge pattern indicated on the plans shall be fully removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck. The inner core assemblies shall be identically constructed so that directional core assemblies providing different air flow discharge patterns may be interchanged between frames, provided the frame duct connections are of the same size. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. 304 stainless steel and aluminum grilles to use dampers of the same construction material.

MSBG

Furnish and install Price model MSBG duct / barrier grille of the sizes and mounting types indicated on the plans and outlet schedule. 3/16 in. [5] sleeve with two 1 in. x 1 in. x 3/16 in. [25 x 25 x 5] 4 sided angle frames (one frame welded 1 in. [25] from one end, one frame shipped loose for field welding). Barrier bars shall be 1/2 in. [13] hot rolled steel bars located on maximum 6 in.x 12 in. [152 x 304] centers. Bars are to be welded to frame and at all crosspoints. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

MSDRBG

Furnish and install Price model MSDRBG duct/barrier grille of the sizes and mounting types indicated on the plans and outlet schedule. 1/4 in. [6] sleeve with two 1½ in. x 1½ in. x 3/16 in. [38 x 38 x 5] 4 sided angle frames (one frame welded 1 in. [25] from one end, one frame shipped loose for field welding). Double- Ribbed barrier bars shall be 7/8 in. [22] steel bars and shall be located on maximum 5 in. [127] centers. The flat intermediate plate shall be 3/8 in. [10] thick hot rolled steel and be mounted into the sleeve on 12 in. [304] centers. Bars are to be inserted into square inserts that are welded to the sleeve. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

MSTRBG

Furnish and install Price model MSTRBG tool resisting duct/barrier grille of the sizes and mounting types indicated on the plans and outlet schedule. The sleeve shall be 1/4 in. [6] steel construction. Double-ribbed barrier bars shall be 7/8 in. [22] diameter tool resisting steel, located on maximum 5 in. [127] centers. Double ribbed bars shall be inserted into 3/8 in. [10] tool resisting steel bars welded along the sleeve. Flat intermediate bars shall be 3/8 in. [10] tool resisting steel welded to the sleeve at maximum 12 in. [304] centers. The tool resisting steel used in the double ribbed bars and flat intermediate bars shall conform to ASTM A627-03 specification. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional 4 sided angle frames shall be provided – the first frame welded 1 in. [25] from one end, the second frame shipped loose for field welding.

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MSRRG

Furnish and install Price model MSRRG risk resistant steel maximum security (supply/return) grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 1 in. [25] angle 45 degree deflection fixed louver type with blades spaced on 1/4 in. [6] centers. Vertical mullions shall be 1 3/4 in. [44] and 12 gauge hot rolled steel bars. The grille is to be attached to a wall sleeve of 3/16 in. [5] hot rolled steel with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the rear of the register.

MSRRCD

Furnish and install Price model MSRRCD maximum security risk resistant ceiling diffuser of the sizes, discharge patterns and mounting types indicated on the plans and outlet schedule. The diffuser shall be constructed of 12 gauge hot rolled steel. Louver blades shall be spaced for 5/16 in. channel width at the diffuser face, with a 35 degree air discharge angle. The louvers shall be fixed in place and shall follow a zigzag pattern through the diffuser. The diffuser shall be painted with a powder coat process and finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

MSRRP

Furnish and install Price model MSRRP risk resistant perforated steel maximum security (supply/return) grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 3/16 in. [5] hot rolled steel faceplate with 3/16 in. [5] perforated staggered 60° on 9/32 in. [7] centers. The grille is to be attached to a wall sleeve of 3/16 in. [5] hot rolled steel with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the rear of the register.

MSPG

Furnish and install Price model MSPG perforated faced steel maximum security (supply/return) grilles of the sizes and mounting types indicated on the plans and outlet schedule. The grille face shall consist of 3/16 in. [5] hot rolled steel with 5/16 in. [8] diameter holes spaced on 7/16 in. [11] centers staggered 60 degrees. The grille is to be attached to a wall sleeve of 3/16 in. [5] hot rolled steel with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the (front/rear) of the register. 304 stainless steel and aluminum (minimum security) grilles to use dampers of the same construction material.

MSLG

Furnish and install Price model MSLG maximum security 3 tier lattice faced steel (supply/return) grilles of the sizes and mounting types indicated on the plans and outlet schedule. The grille shall meet or exceed ASTM specifications for detention area outlets. The grille face shall be a laminated assembly consisting of 3/16 in. [5] hot rolled steel with 2 in. x 2 in. [51 x 51] square holes and 1 in. [25] frets, a 10 gauge wire mesh (2.5 mesh/inch - 44% free area) and a backer plate of 1/4 in. [6] hot rolled steel with 2 in. x 2 in. [51 x 51] square holes and 1 in. [25] frets. The grille is to be attached to a wall sleeve of 3/16 in. [5] hot rolled steel with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the (front/rear) of the register. 304 stainless steel and aluminum (minimum security) grilles to use dampers of the same construction material.

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MSLGP

Furnish and install Price model MSLGP maximum security 3 tier lattice/perforated face steel (supply/return) grilles of the sizes and mounting types indicated on the plans and outlet schedule. The grille face shall be an assembly consisting of one 3/16 in. [5] hot rolled steel lattice with 2 in. x 2 in. [51 x 51] square holes and one 12 gauge hot rolled steel perforated plate with 3/16 in. [5] diameter holes on 5/16 in. [8] centers on a 60 degree stagger. The perforated plate shall be continuously welded to the lattice face. A second face of 12 gauge hot rolled steel perforated plate with 3/16 in. [5] diameter holes on 5/16 in. [8] centers on a 60 degree stagger shall be continuously welded to the sleeve 1 in. [25] from the face assembly. The second perforated face shall be mounted at an offset to the first to obstruct visual and insertion lines. The grille is to be attached to a wall sleeve of 3/16 in. [5] hot rolled steel with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the rear of the register.

MSL

Furnish and install Price model MSL lattice faced steel minimum security (supply/return) grilles of the sizes and mounting types indicated on the plans and outlet schedule. The grille face shall consist of 14 gauge hot rolled steel with 3/4 in. [19] x 3/4 in. [19] x 1 in. [25] square holes and frets. The grille is to be attached to a wall sleeve of 14 gauge hot rolled steel with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the (front/rear) of the register. 304 stainless steel and aluminum grilles to use dampers of the same construction material.

MSLP

Furnish and install Price model MSLP lattice faced steel minimum security plates of the sizes and mounting types indicated on the plans and outlet schedule. The faceplate shall consist of 14 gauge hot rolled steel with 13/16 in. x 13/16 in. [21 x 21] square holes and 3/16 in. [5] frets. The faceplate is to be attached with tamperproof screws in countersunk screw holes. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

MSSG

Furnish and install Price model MSSG screened faced steel medium security (supply/return) grilles of the sizes and mounting types indicated on the plans and outlet schedule. The grille face shall be a 10 gauge wire mesh (2.5 mesh/inch - 44% free area) and a backer angle of hot rolled steel. The grille is to be attached to a wall sleeve of 10 gauge hot rolled steel with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the (front/rear) of the register. 304 stainless steel and aluminum (minimum security) grilles to use dampers of the same construction material.

MSSL

Furnish and install Price model MSSL steel medium security (supply/return) straight fixed louver grilles of the sizes and mounting types indicated on the plans and outlet schedule. Grilles shall be 0 degree deflection fixed louver type with blades spaced 1/2 in. [13] on center supported by 14 gauge vertical support mullions located on 6 in. centers with a 10 gauge wire mesh (2.5 mesh/inch - 44% free area). The faceplate shall be 14 gauge hot rolled steel. Blades shall run parallel to the (long/short) dimension of the grille. The grille is to be attached to a steel wall sleeve with a rear mounting frame for a concealed and secure fastening. The grille shall be painted with a powder coat process and be finished in white. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Optional integral volume control damper shall be of the opposed blade type and shall be constructed of cold rolled steel. The damper shall be mounted in the wall sleeve and be operable from the (front/rear) of the register. 304 stainless steel and aluminum (minimum security) grilles to use dampers of the same construction material.

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Index by Product Name

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Index by Product Code

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