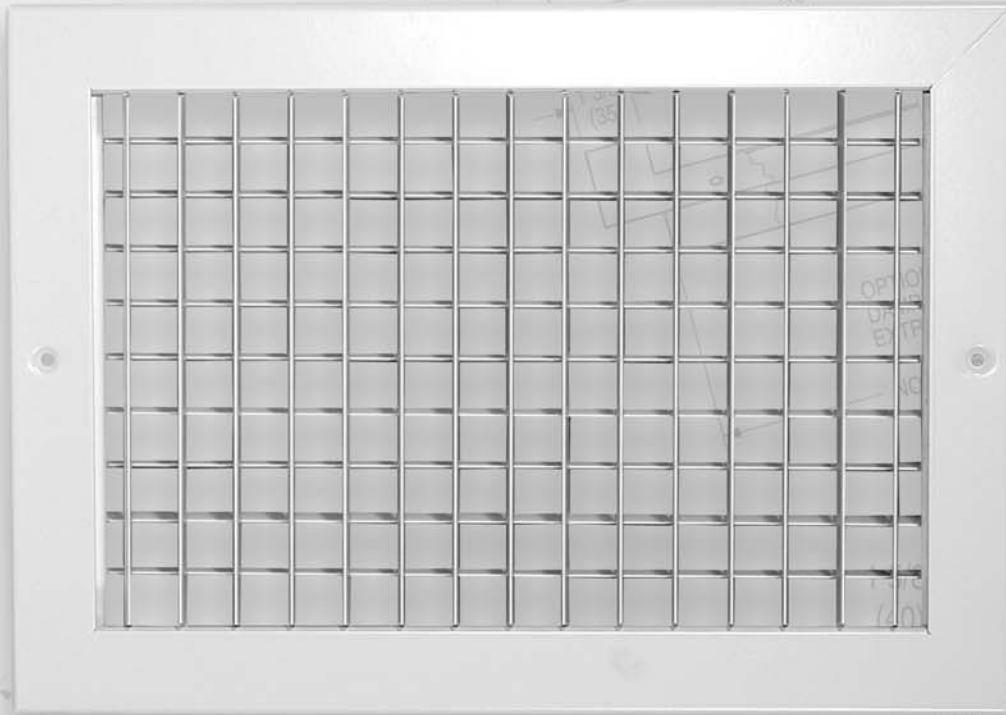




Nailor
Industries Inc.

GRILLES AND REGISTERS

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GENERAL PRODUCT OVERVIEW

Grilles and Registers

Quality Assured Products, unobtrusive clean lines for appearance, careful engineering and professional workmanship with the backing of an industry leader – these add up to true value; prime reasons for specifying **Nailor** Grilles and Registers. Architectural excellence and engineering selections demand high quality products and shipping schedules demand service; all part of the package.

- Comprehensive range of models and styles to choose from.
- Versatile selection and sizing ensures the correct product for any specific application.
- Material choice of premium quality extruded aluminum, cost-effective steel or stainless steel. Unique in our manufacturing process is the

exclusive use of corrosion-resistant coated steel as used in the auto industry. The material has superb forming qualities and outlasts painted cold-rolled steel and galvanized steel by up to three times.

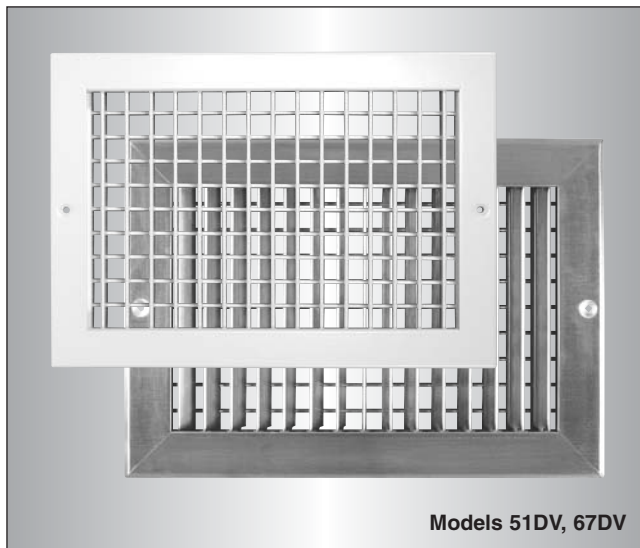
- Various border/frame types, combinations and mounting options.
- Balancing accessories.

- Superior finishes.
- Performance data in accordance with current international test standards and the back-up of one of the finest 'in-house' testing laboratories in North America.

Louvered Face Grilles and Registers

This series of grilles and registers are available in cost effective, corrosion-resistant steel, premium quality extruded aluminum or stainless steel construction. The blades are formed to a streamlined engineered contoured cross-section. Rigid, reinforced frames feature hairline-mitered corners. Optional opposed blade dampers have a screwdriver slot or lever operator for adjustment through the face of the register. As standard, the grilles and registers have countersunk screw holes in the frame, which make for an architecturally pleasing appearance.

Louvered Face — Supply Air



Double Deflection

A dual set of individually adjustable blades are friction pivoted and can be easily adjusted to provide maximum control of the air pattern for spread and deflection in two planes. Blades are spaced on 3/4" (19) centers.

Aluminum – Models 51DV, 51DH See page G14

Suffix '-O' adds a steel OBD

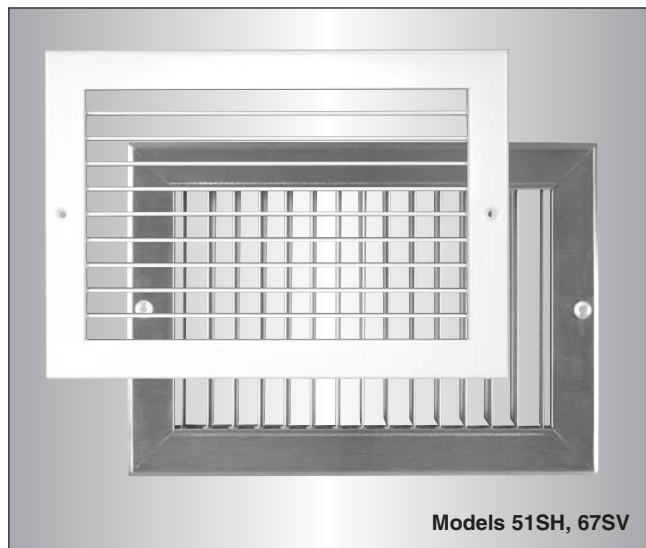
Suffix '-OA' adds an aluminum OBD

Steel – Models 61DV, 61DH See page G16

Suffix '-O' adds a steel OBD

Stainless Steel – Models 67DV, 67DH See page G18

Suffix '-O' adds a stainless steel OBD



Single Deflection

A single set of individually adjustable blades are friction pivoted and can be easily adjusted to provide the desired spread or deflection in a single plane. Blades are spaced on 3/4" (19) centers.

Aluminum – Models 51SV, 51SH See page G15

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Steel – Models 61SV, 61SH See page G17

Suffix '-O' adds a steel OBD

Stainless Steel – Models 67SV, 67SH See page G19

Suffix '-O' adds a stainless steel OBD

Louvered Face — Return Air



45° Deflection, 3/4" (19) Blade Spacing

The blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with grille blade deflection facing away from the line of sight. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Aluminum – Models 5145H, 5145V See page G28

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Steel – Models 6145H, 6145V See page G32

Suffix '-O' adds a steel OBD

Stainless Steel – Models 6745H, 6745V See page G36

Suffix '-O' adds a stainless steel OBD

45° Deflection, 1/2" (13) Blade Spacing

The blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with the grille blade deflection facing away from the line of sight, and when viewed from straight ahead. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Aluminum – Models 5155H, 5155V See page G30

Suffix '-O' adds a steel OBD

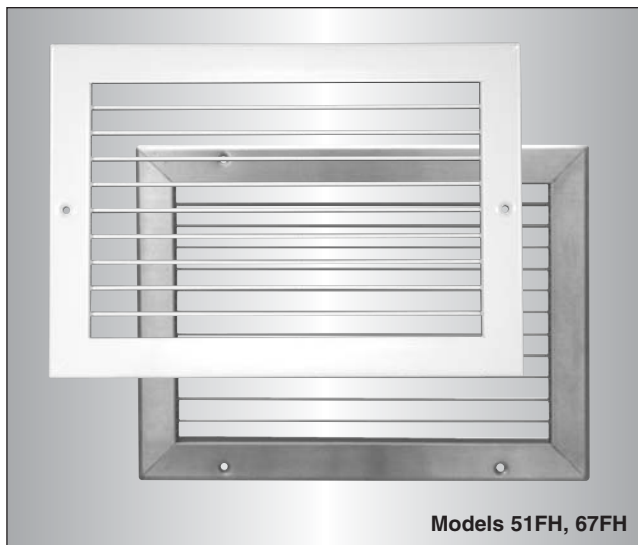
Suffix '-OA' adds an aluminum OBD

Steel – Models 6155H, 6155V See page G34

Suffix '-O' adds a steel OBD

Stainless Steel – Models 6755H, 6755V See page G37

Suffix '-O' adds a stainless steel OBD



0° Deflection, 3/4" (19) Blade Spacing

The blades are fixed at 0°. Their appearance compliments the supply grilles and registers of the same series. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Aluminum – Models 51FH, 51FV See page G28

Suffix '-O' adds a steel OBD

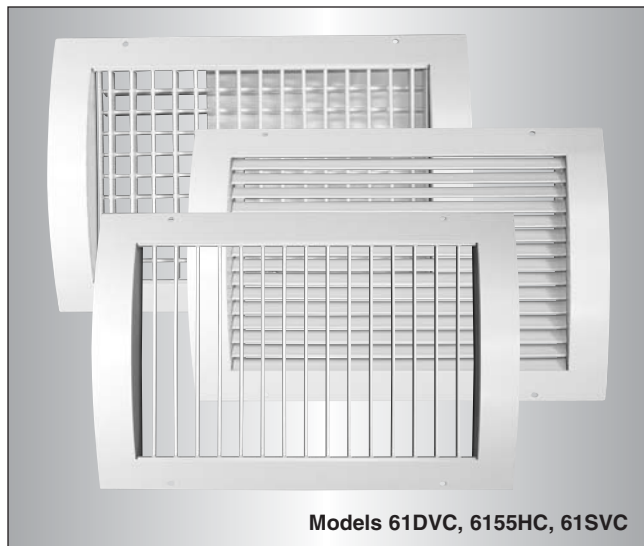
Suffix '-OA' adds an aluminum OBD

Steel – Models 61FH, 61FV See page G32

Suffix '-O' adds a steel OBD

Stainless Steel – Models 67FH, 67FV See page G36

Suffix '-O' adds a stainless steel OBD



Models 61DVC, 6155HC, 61SVC

Curved Spiral Duct Grilles

Nailor's unique curved spiral duct grille design offers an architecturally superior appearance and saves installation time and money by directly mounting to the duct. This eliminates the need to fabricate stand-off saddles required for installing standard grilles. These grilles are available for both supply and return air applications.

Double Deflection – Models 61DVC, 61DHC See page G47

Single Deflection – Models 61SVC, 61SHC See page G48

Linear Slot Face – Models 61L50C, 61L75C, 61L10C See page G53

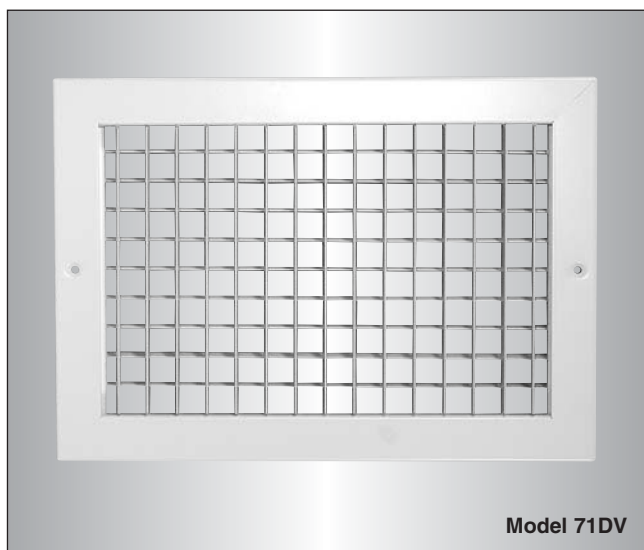
Perforated – Model 61PRC See page G57

45° Fixed Blade – Models 6145HC, 6155HC See page G58

Airfoil Blade Grilles and Registers

Sleek design, premium performance and a true extruded aluminum airfoil blade is what makes this series superior to the industry standard. The models in this series are designed for engineers and architects who require exceptional quality and performance. As standard, the grilles and registers have countersunk screw holes in the extruded aluminum frame, which make for a neat clean appearance. Optional opposed blade dampers have a screwdriver slot operator for adjustment through the face of the register.

Airfoil Blade – Supply Air



Model 71DV

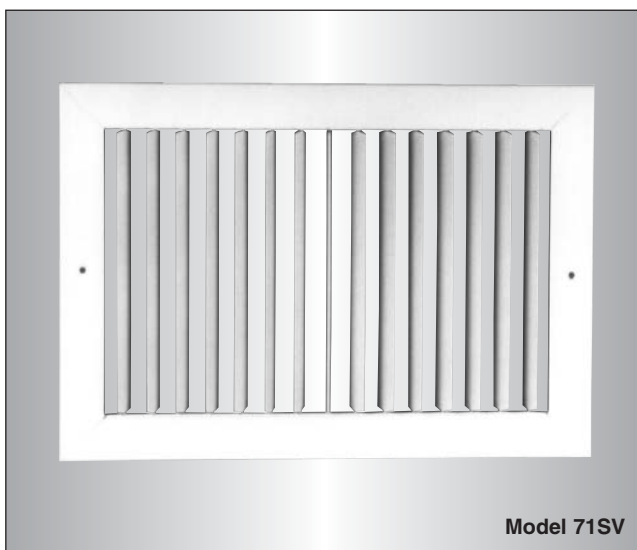
Double Deflection

A dual set of individually adjustable airfoil blades are friction pivoted and can be easily adjusted to provide maximum control of the air pattern for spread and deflection in two planes. The airfoil blades are spaced on 3/4" (19) centers.

Aluminum – Models 71DV, 71DH See page G62

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD



Model 71SV

Single Deflection

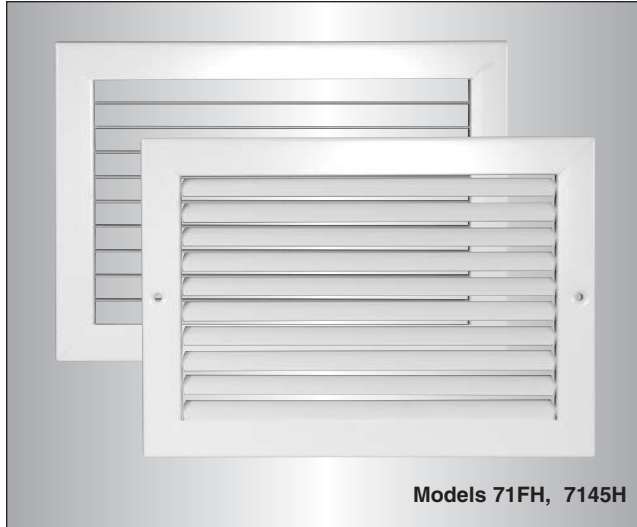
A single set of individually adjustable airfoil blades are friction pivoted and can be easily adjusted to provide desired spread or deflection in a single plane. The airfoil blades are spaced on 3/4" (19) centers.

Aluminum – Models 71SV, 71SH See page G63

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Airfoil Blade – Return Air



Models 71FH, 7145H

45° Deflection, 3/4" (19) Blade Spacing

The airfoil blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with grille blade deflection facing away from the line of sight. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Models 7145H, 7145V

See page G70

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

0° Deflection, 3/4" (19) Blade Spacing

The airfoil blades are set at 0°. Their appearance compliments the supply grilles and registers of the same series. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

Models 71FH, 71FV

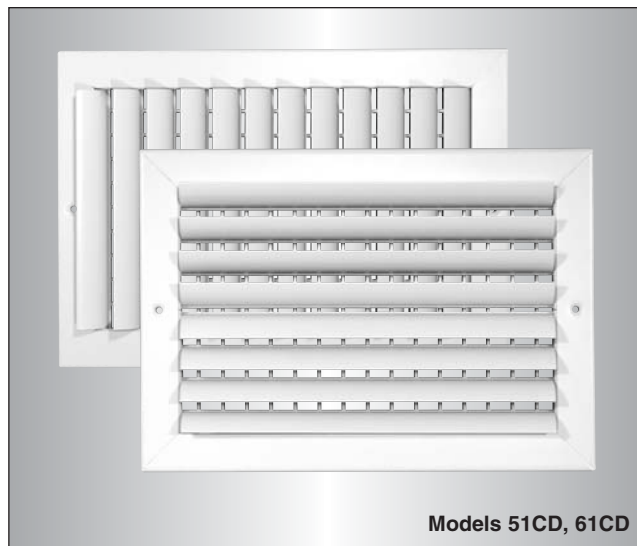
See page G70

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Curved Blade Directional Grilles and Registers

Nailor's curved blade directional grilles and registers are designed to meet the demand for top quality and competitive prices. Constructed with extruded aluminum blades, this model series is unobtrusive in appearance for architectural excellence. The grilles and registers may be used in sidewall and ceiling applications. Optional opposed blade dampers have a screwdriver slot operator for adjustment through the face of the register. The 1 1/4" (32) frames have countersunk screw holes for an inconspicuous appearance.



Models 51CD, 61CD

Curved Blade with Deflection Vanes

The models in this series have individually adjustable curved blades that provide a true directional pattern. They also incorporate a set of rear adjustable vanes for complete directional control and flow equalization. They are available with one or two way directional throw.

Aluminum – Model 51CD

See page G77

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Steel – Model 61CD

See page G79

Suffix '-O' adds a steel OBD



Models 51C, 61C

Curved Blade without Deflection Vanes

The models in this series have curved blades that provide a true directional pattern. There are twelve available patterns to choose from.

Aluminum – Model 51C

One and Two-Way

See page G77

Three and Four-Way

See page G78

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Steel – Model 61C

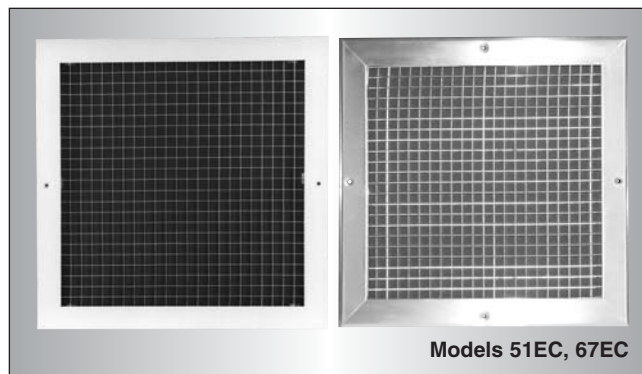
One and Two-Way

See page G79

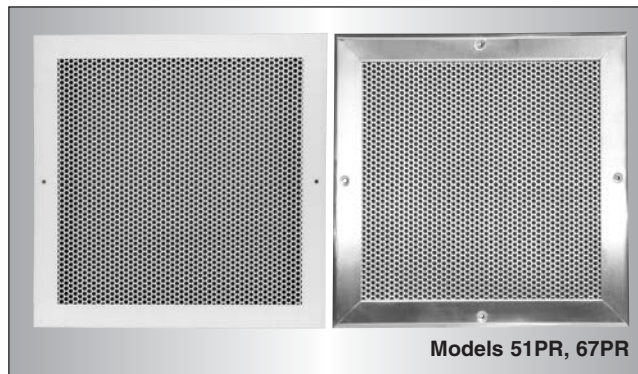
Three and Four-Way

See page G80

Suffix '-O' adds a steel OBD



Models 51EC, 67EC



Models 51PR, 67PR

Eggcrate Return and Exhaust Grilles

The eggcrate grilles and registers are constructed of thin, interlocked aluminum or stainless steel strips assembled in a square grid fashion that is available in a variety of grid sizes. The standard grid size is 1/2" x 1/2" x 1/2" with 1/2" x 1/2" x 1" or 1" x 1" x 1" as an option. Frame and border types are available in a variety of materials and mounting options.

Aluminum – Model 51EC

See page G87

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Steel Frame – Model 61EC

See page G89

Suffix '-O' adds a steel OBD

Stainless Steel – Model 67EC

See page G91

Suffix '-O' adds a stainless steel OBD.

Perforated Return Grilles

The perforated face used on these grilles and registers have 3/16" (5) diameter holes on 1/4" (6) staggered centers (51% free area) and is available in a choice of aluminum, steel or stainless steel construction. Their general appearance matches and compliments the popular perforated supply diffusers (refer to the **4300 Series** in the diffuser section of the catalog).

Aluminum – Model 51PR

See page G97

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Steel – Model 61PR

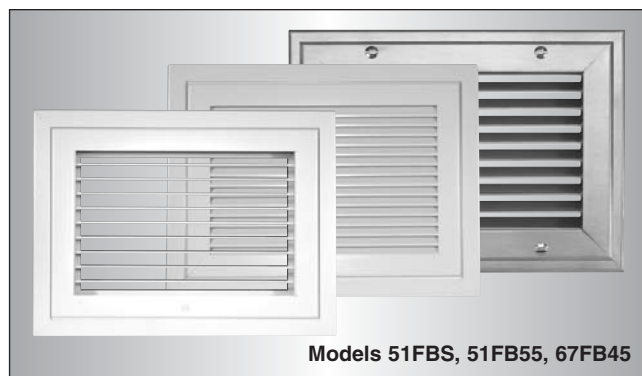
See page G97

Suffix '-O' adds a steel OBD

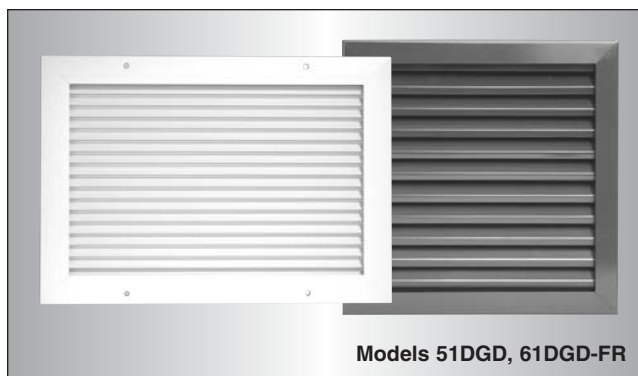
Stainless Steel – Model 67PR

See page G99

Suffix '-O' adds a stainless steel OBD



Models 51FBS, 51FB55, 67FB45



Models 51DGD, 61DGD-FR

Filter Return and Exhaust Grilles

Nailor offers a large selection of filter grilles that are designed to match and compliment their respective base models in appearance. The standard filter frame accepts a standard 1" (25) thick, throw away type filter (by others) with an option for a 2" (51) filter frame.

• Louvered Face

See page G105

Aluminum – Models 51FB45, 51FB55, 51FBS

Steel – Models 61FB45, 61FB55, 61FBS

Stainless Steel – 67FB45, 67FB55

• Eggcrate

See page G105

Aluminum – Model 51FE

Steel – Model 61FE

• Perforated

See page G105

Aluminum – Model 51FP

Steel – Model 61FP

Door/Transfer Grilles

Nailor provides an assortment of door grilles that are designed to be completely sight proof and unobtrusive in appearance. They are constructed using extruded aluminum or steel materials. A fire-rated version is also available.

Aluminum –

Models 51DGD, 51DGS

See page G111

Steel –

Models 61DGD, 61DGS, 61DGC

See page G112

Fire Rated – Model 61DGD-FR

See page G113



Reversible Core

The versatile core in this series allows a combination of four different deflections and is removable without the need of special tools. Optional deflector vanes and an opposed blade damper are available for additional air control.

Aluminum – Models 51RC, 51RCD See page G117

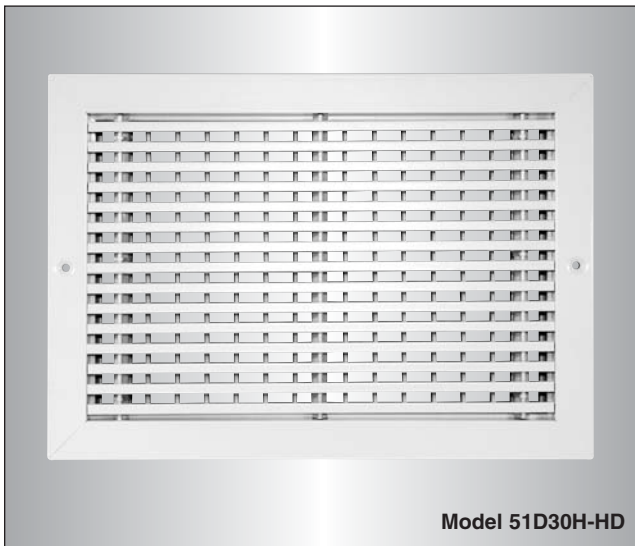
Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

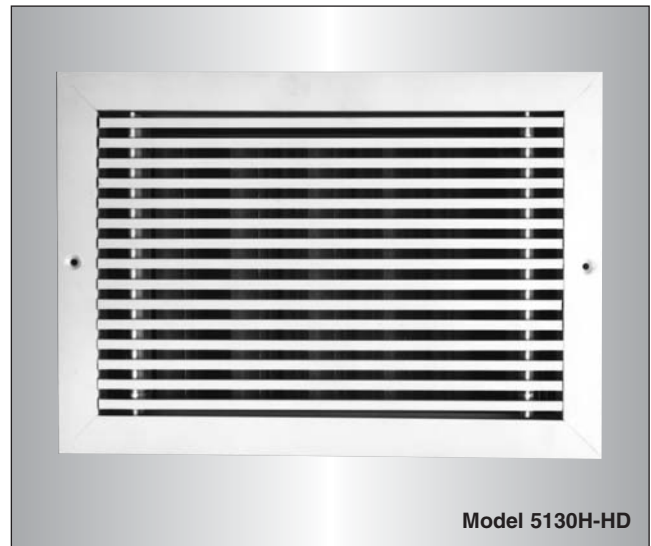
Heavy Duty Extruded Aluminum Bar Grilles and Registers

The grilles in this series are constructed to offer strength and durability for applications requiring strong impact resistance. The extruded aluminum frames are staked and welded, and the extruded aluminum blades are offered with a 0°, 15°, or 30° fixed deflection. Available for both supply and return air applications.

Supply Air



Return Air



Fixed Front Bars with Rear Deflection Vanes

This supply air grille has adjustable rear vanes for directional control. The fixed extruded aluminum front blades are supported by a deep profile cross bar for strength.

Models 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD See page G122

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Fixed Bars

This return air grille has extruded aluminum fixed blades that are reinforced for strength.

Models 5130H-HD, 5130V-HD, 51FH-HD, 51FV-HD

See page G127

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

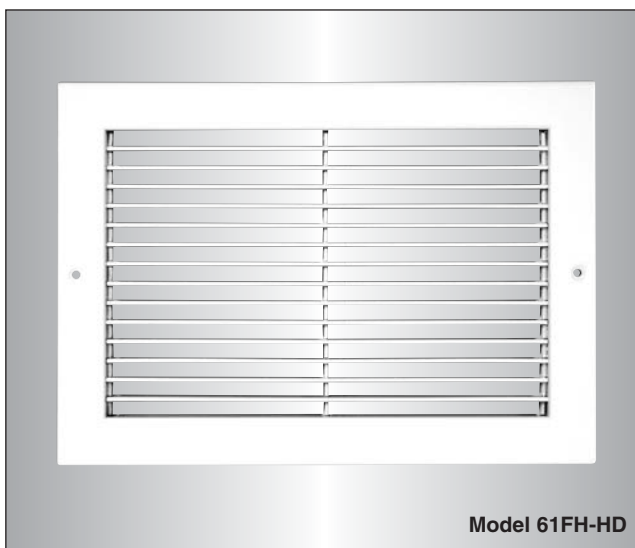
Heavy Duty Steel Grilles and Registers, Gymnasium Strength

Nailor's Heavy Duty Steel Grilles and Registers are manufactured with 16 gauge steel frames and 14 gauge steel blades which gives them strength to stand up to abuse and high impacts that occur in schools, gymnasiums and other comparable applications.

Supply Air



Return Air



Adjustable Blades

The supply air grilles are offered with both single and double deflection blades. The adjustability of the blade is 0° – 40° deflection and they are spaced on 1/2" (13) centers. The double deflection rear blades are spaced on 3/4" (19) centers.

Double Deflection –

Models 61DV-HD, 61DH-HD

See page G133

Suffix '-O' adds a steel OBD

Single Deflection –

Models 61SV-HD, 61SH-HD

See page G133

Suffix '-O' adds a steel OBD

Fixed Blades

Heavy gauge frame and blades and all welded construction make this series of grilles and registers extremely durable. These models are perfect for locations that require strong impact resistance. The blades are spaced on 1/2" (13) centers.

Models 6145H-HD, 6145V-HD,

61FH-HD, 61FV-HD

See page G141

Suffix '-O' adds a steel OBD



Heavy Duty Stainless Steel

This grille is used mainly for return air applications that require strength and durability in corrosive or high humidity environments. The frame is welded and the blades are spaced on 1/2" (13) centers and reinforced with a mullion on 8" (203) centers.

Models 6755H-HD, 6755V-HD

See page G147

Suffix '-O' adds a stainless steel OBD



Models 45DL1, 45DL2

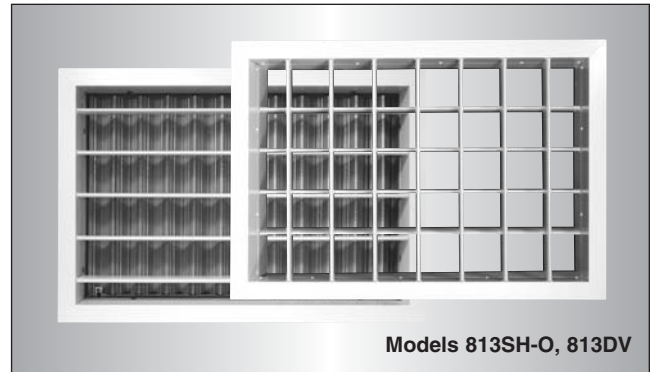
Drum Louvers

These extruded aluminum drum louvers are appropriate when high volumes of air are used and in spot heating and cooling applications. A split-vane style and a pole operating bracket are available.

Models 45DL1, 45DL2

See page G151

Suffix '-O' adds a steel OBD



Models 813SH-O, 813DV

Industrial Supply

The industrial supply grilles and registers have contoured airfoil blades that are extruded aluminum and are available with either 1 1/2" (38) or 3" (76) blade spacing. The heavy gauge, 1 1/4" (32) frame includes reinforced and staked mitered corners.

• Double Deflection

1 1/2" (38) Blade Spacing –

Models 81DV, 81DH

See page G158

3" (76) Blade Spacing –

Models 813DV, 813DH

See page G158

Suffix '-O' adds a steel OBD

• Single Deflection

1 1/2" (38) Blade Spacing –

Models 81SV, 81SH

See page G158

3" (76) Blade Spacing –

Models 813SV, 813SH

See page G158

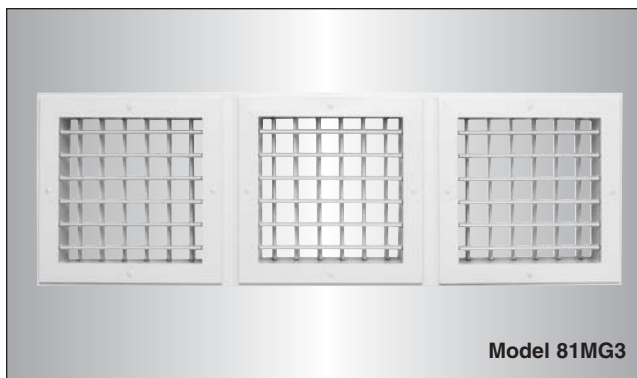
Suffix '-O' adds a steel OBD

• Gang Operated –

Models 81GDV, 81GDH

See page G158

Suffix '-O' adds a steel OBD



Model 81MG3

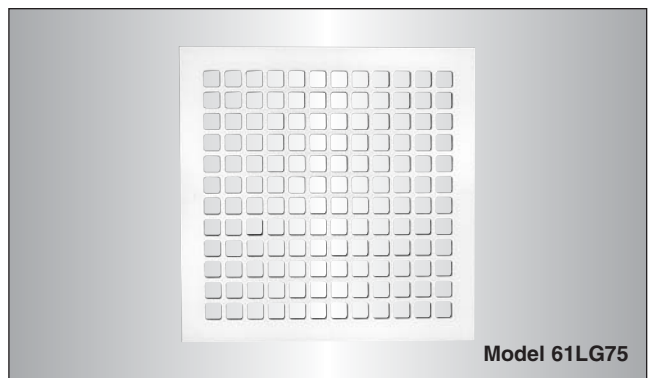
Modular Core – Industrial Supply

Nailor has incorporated the features of the 8100 Series (double deflection) industrial supply grilles with an aluminum modular frame, which allows for extra directional flow flexibility. Up to four modules are available in specific sizes from 8" x 8" to 15" x 15" (203 x 203 to 381 x 381).

Models 81MG1, 81MG2, 81MG3, 81MG4

See page G165

Suffix '-O' adds a steel OBD



Model 61LG75

Lattice Face

Lattice face grilles are available in heavy gauge aluminum, steel and stainless steel construction with a selection of hole patterns to choose from. Countersunk screw holes and mounting screws are optional.

Aluminum – Model 51LG

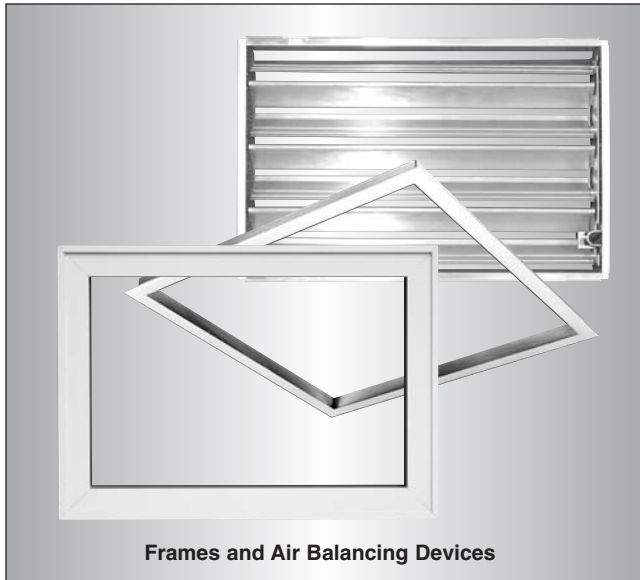
See page G170

Steel – Model 61LG

See page G170

Stainless Steel – Model 67LG

See page G170



Frames and Air Balancing Devices

Options and Accessories

Nailor offers an extensive selection of accessories and options for grilles and registers. Air balancing devices, air extractors and a variety of mounting frames are several of the accessories available. Grille options consist of special finishes, gaskets, alternative frames and a variety of other items.

Options

Fastening and Border Frames

See page G173

Mounting Frames

See page G174

Panel Mounting Frames

See page G175

Options

See page G176

Custom Sizing

See page G176

Finishes

See page G176

Accessories

Air Balancing Devices

See page G177

Volume Extractors

See page G180

EXCLUSIVE WARRANTY FOR NAILOR STEEL GRILLES, REGISTERS AND DIFFUSERS

LIMITED WARRANTY – SERIES 61C, 6100, 61EC, 61F, RNS, RNS2,
UNI, 4300, 6500, 7500 AND 61CC

Nailor Industries Inc. ('Nailor') warrants to the original and each subsequent owner of a new Nailor Series Grille, Register or Ceiling Air Diffuser in the model series titled above, constructed of corrosion-resistant steel that should rust become visible on the exposed portion of any individual product covered by this agreement Nailor will replace the rusted unit. Any diffuser affected by chemicals or misuse, including, without limitation, the failure to perform reasonable and necessary maintenance, will not be covered by this warranty. This warranty is for sixty (60) months from the date of the shipment by Nailor.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The rusted unit will be shipped by the owner at its cost to Nailor for replacement. The cost of the replacement, including the cost of shipment to the owner, but excluding any costs for either the removal or preparation for shipment of the rusted unit and the re-installation of the replacement unit, will be borne by Nailor. A reasonable time should be allowed after shipment to Nailor for the replacement of the rusted unit.

This is the only warranty given with the purchase. Any warranties implied by law are limited to sixty (60) months from the date of shipment by Nailor. Nailor neither assumes nor authorizes any person to assume for it any other liability in connection with any diffuser covered by this agreement.

No payment or other compensation will be made for indirect or consequential damage such as, damage or injury to person or property or loss of revenue or profit which might be paid, incurred or sustained by reason of the use or inability to use a Nailor product listed above, even if such loss or damage could have been foreseen by Nailor.

Some states do not allow the exclusion of limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above may not apply to you.

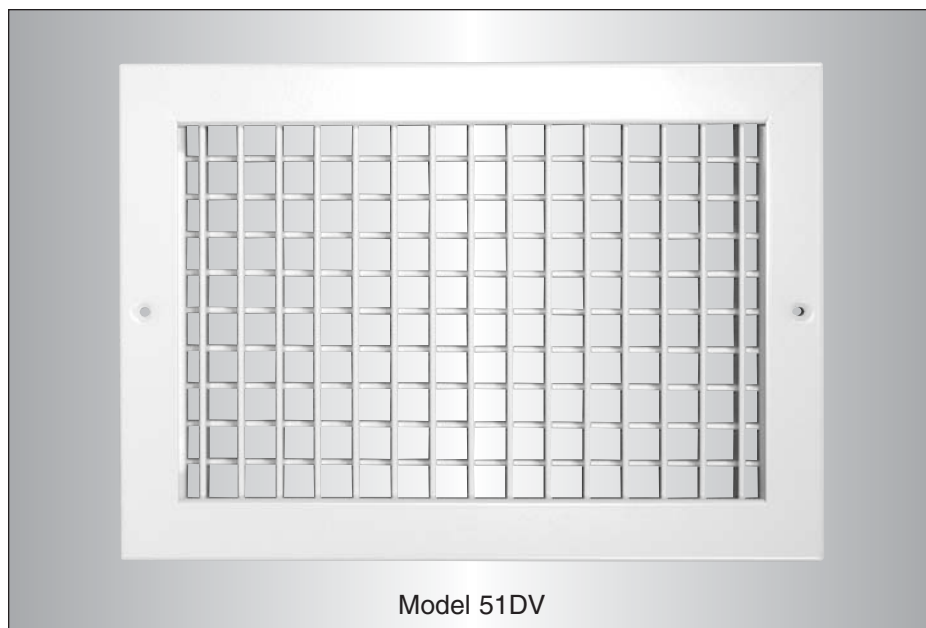
ALUMINUM DOUBLE DEFLECTION GRILLES AND REGISTERS

• SUPPLY

Models:

51DV and 51DH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper

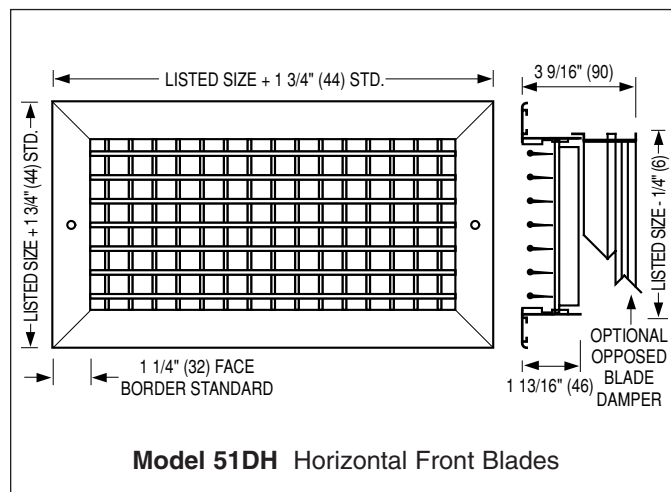
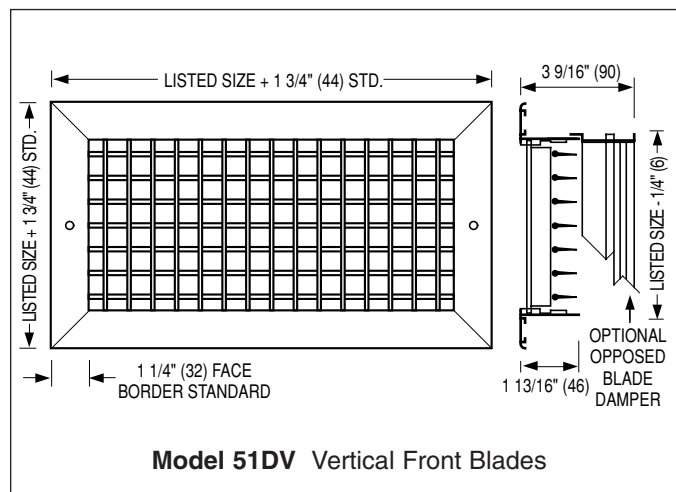


Models 51DV and 51DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- High quality, extruded aluminum construction.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.



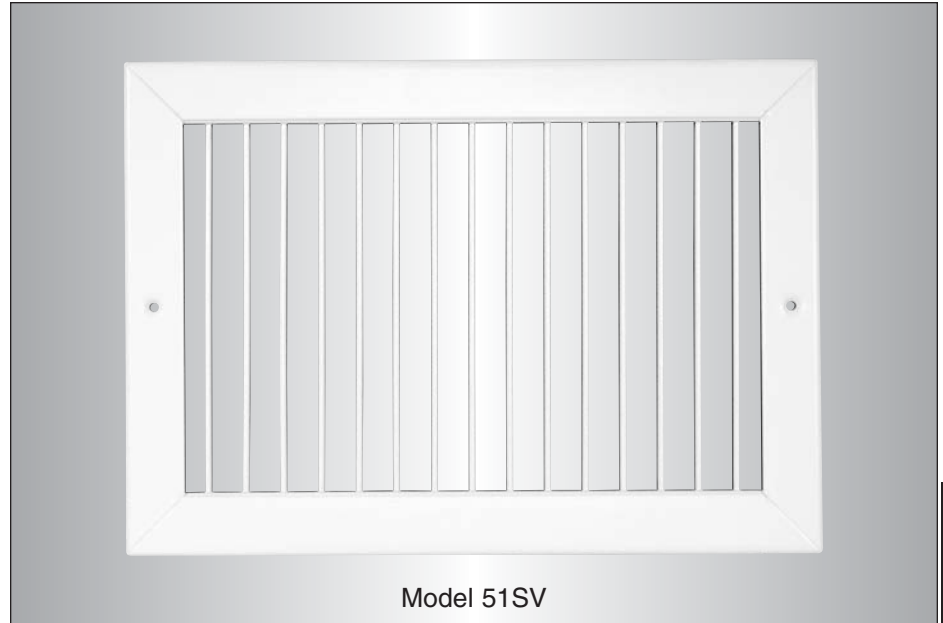
ALUMINUM SINGLE DEFLECTION GRILLES AND REGISTERS

• SUPPLY

Models:

51SV and 51SH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper

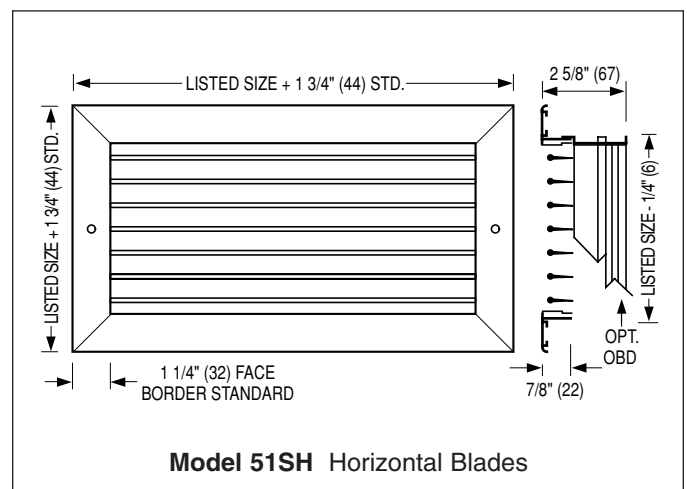
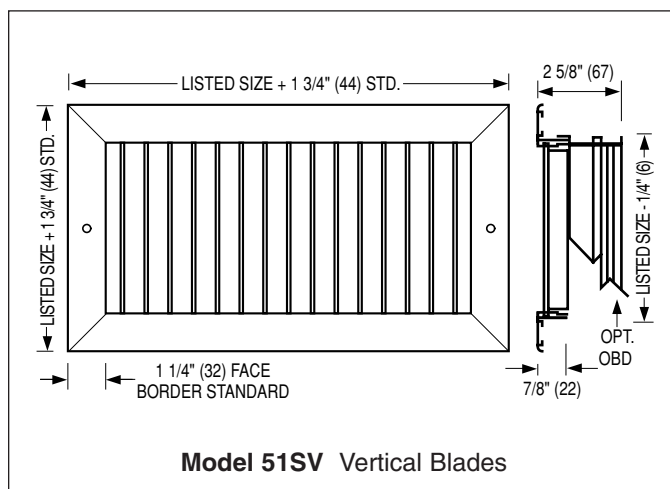


Models 51SV and 51SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- High quality, extruded aluminum construction.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.



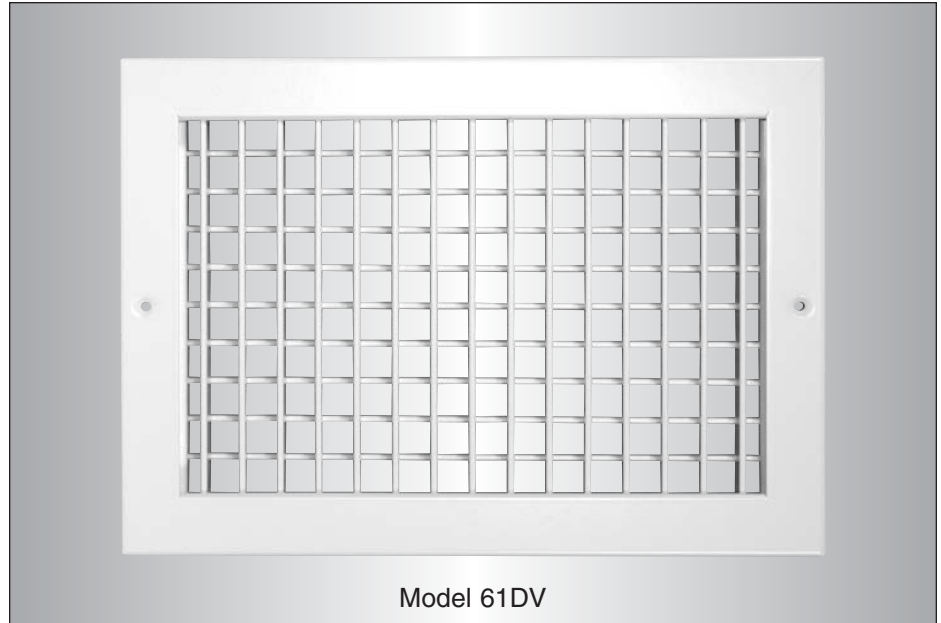
STEEL DOUBLE DEFLECTION GRILLES AND REGISTERS

• SUPPLY

Models:

61DV and 61DH

- Suffix '-O' adds a steel opposed blade damper

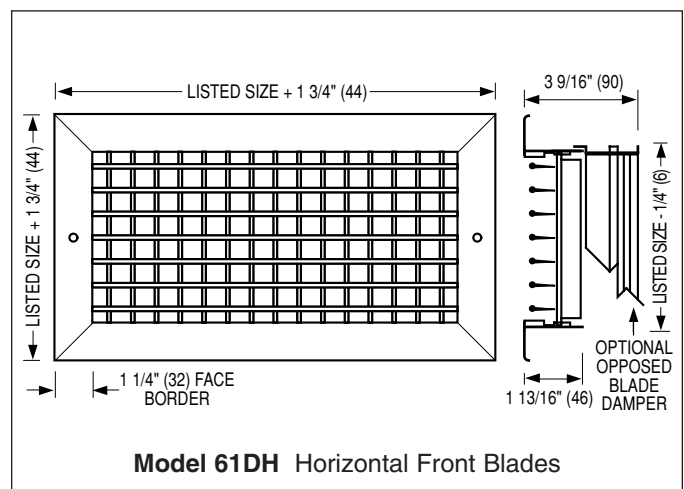
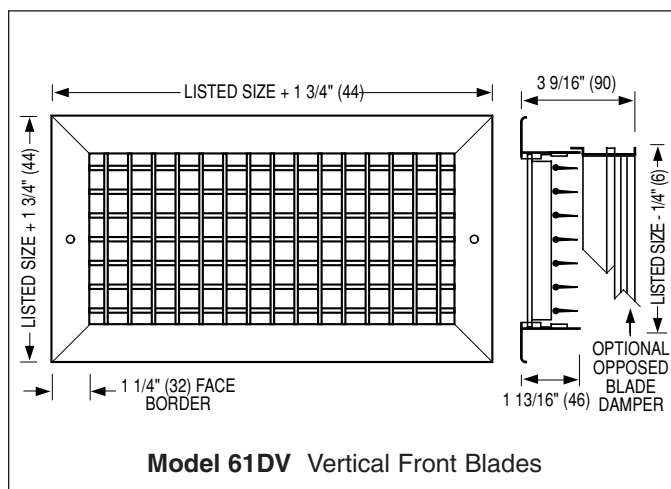


Models 61DV and 61DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- Cost effective, corrosion-resistant steel construction.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.



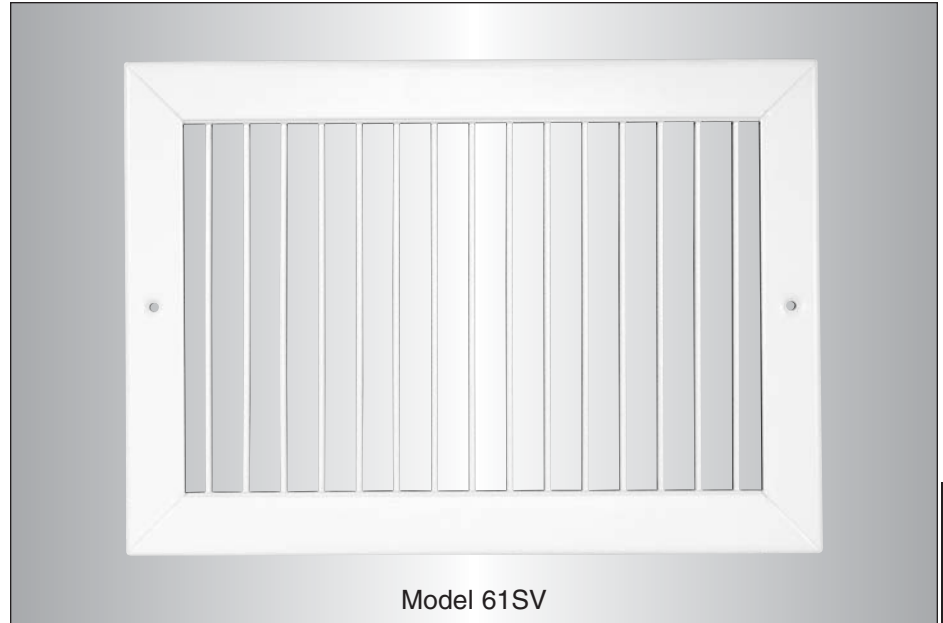
STEEL SINGLE DEFLECTION GRILLES AND REGISTERS

• SUPPLY

Models:

61SV and 61SH

- Suffix '-O' adds a steel opposed blade damper

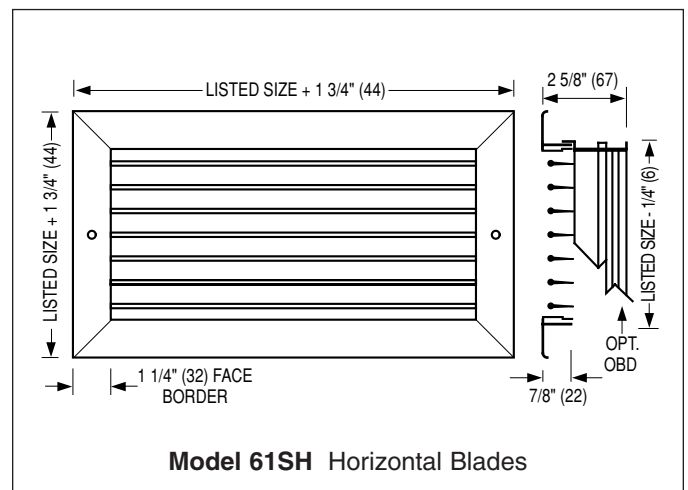
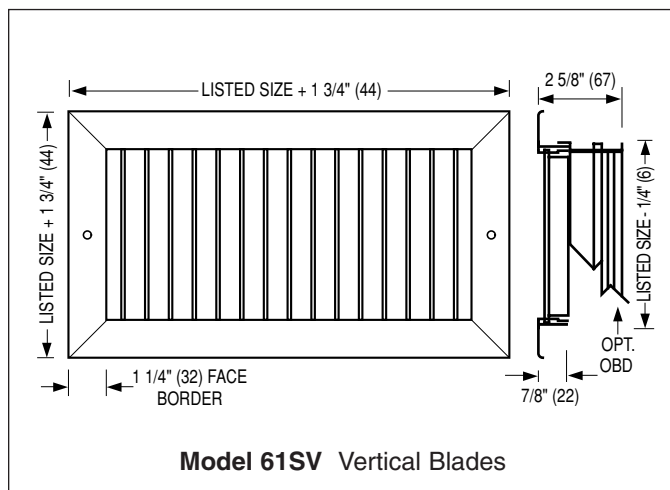


Models 61SV and 61SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- Cost effective, corrosion-resistant steel construction.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.



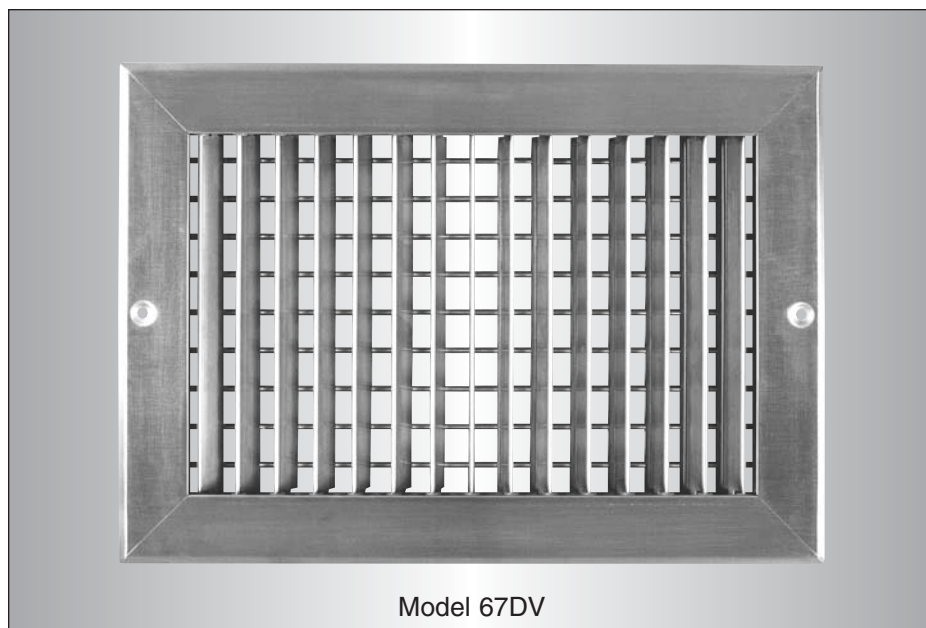
STAINLESS STEEL DOUBLE DEFLECTION GRILLES AND REGISTERS

• SUPPLY

Models:

67DV and 67DH

- Suffix '-O' adds a stainless steel opposed blade damper



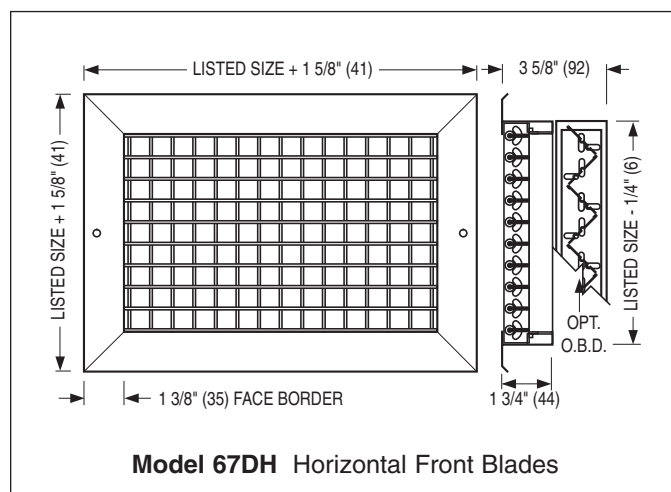
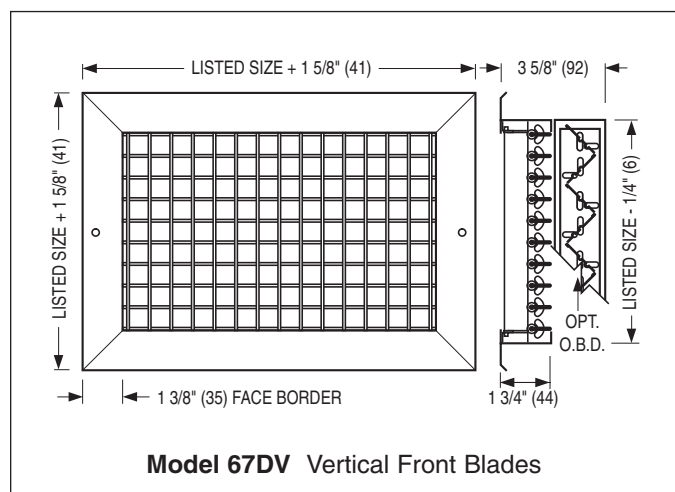
Models 67DV and 67DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

The combination of streamlined shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- Type 304 stainless steel construction.
- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades
- on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- #3 Satin polished finish is standard. AW Appliance White baked enamel finish is optional. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914).
- Type 316 stainless steel construction available as an option.



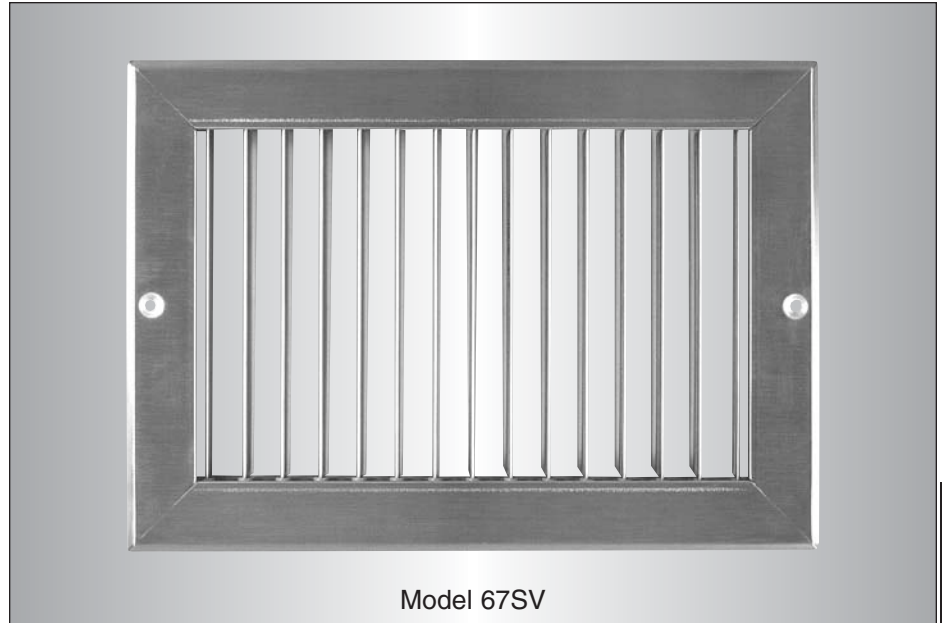
STAINLESS STEEL SINGLE DEFLECTION GRILLES AND REGISTERS

• SUPPLY

Models:

67SV and 67SH

- Suffix '-O' adds a stainless steel opposed blade damper



Model 67SV

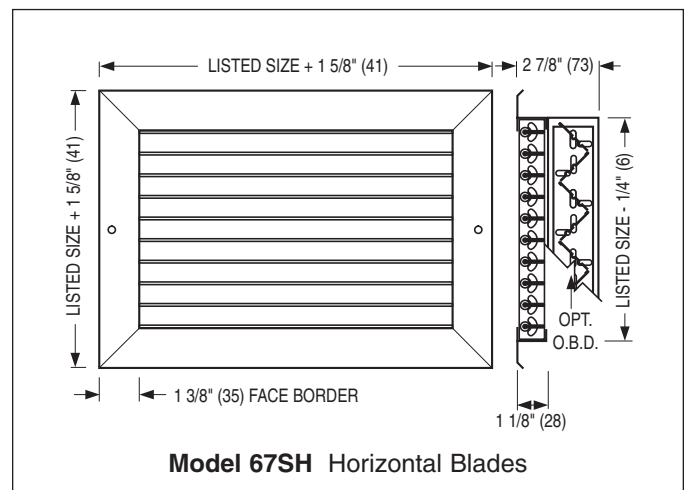
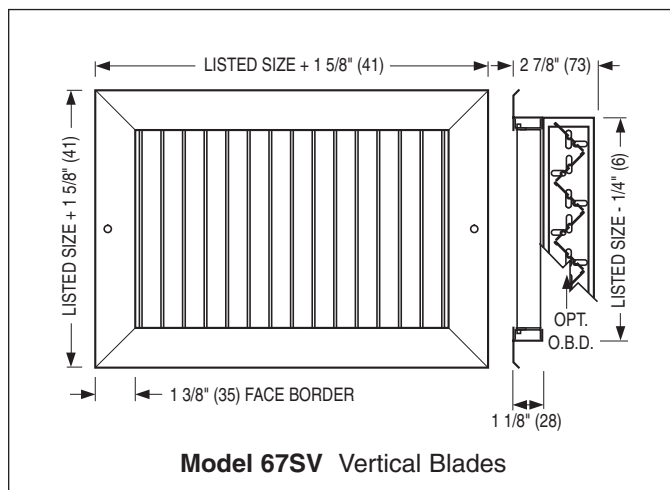
Models 67SV and 67SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

The combination of streamlined shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- Type 304 stainless steel construction.
- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- #3 Satin polished finish is standard. AW Appliance White baked enamel finish is optional. Other finishes are available.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).
- Type 316 stainless steel construction available as an option.



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Supply Grilles and Registers – Model Series 5100

MODEL _____		51 D V - O - 24 x 12 - S - AW - A - —	
- Aluminum Construction	51		
SUPPLY _____			
- Double Deflection	D		
- Single Deflection	S		
FRONT BLADE DIRECTION _____			
- Vertical	V		
- Horizontal	H		
DAMPER (OBD) _____			
- Steel (standard)	O		
- Aluminum	OA		
- No Damper	—		
WIDTH x HEIGHT _____			
inches (mm) x inches (mm)			
			ACCESSORIES
			- None (default) —
			- Plaster Sub-frame PF
			- Foam Gasket GK
			FASTENING
			- Screw Holes (default) A
			- Concealed Mounting Straps C
			- Concealed Screw Holes in Neck D
			- None N
			FINISH
			- Appliance White (default) AW
			- Aluminum AL
			- Special Custom Color SP
			- Satin (clear) Anodized SA
			FRAME / BORDER TYPE
			Surface Mount:
			- Standard 1 1/4" (32) (default) S
			- Narrow 1" (25) NF

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum double deflection register, front blades vertical and steel damper, is Model 51DV-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
- Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
- The larger dimension must always be specified first; for example 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

51DV, 51DH Double Deflection

Furnish and install **Nailor Model** (select one) **51DV** or **51DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of extruded aluminum adjustable blades that are streamlined shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

51SV, 51SH Single Deflection

Furnish and install **Nailor Model** (select one) **51SV** or **51SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are streamlined shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Steel Supply Grilles and Registers – Model Series 6100

61 D V - O - 24 x 12 - S - AW - A - —	
MODEL _____	ACCESSORIES
- Steel Construction 61	- None (default) —
SUPPLY _____	- Plaster Sub-frame PF
- Double Deflection D	- Foam Gasket GK
- Single Deflection S	FASTENING
FRONT BLADE DIRECTION _____	- Screw Holes (default) A
- Vertical V	- Concealed Mounting Straps C
- Horizontal H	- Concealed Screw Holes in Neck D
DAMPER (OBD) _____	- None N
- Steel O	FINISH
- No Damper —	- Appliance White (default) AW
WIDTH x HEIGHT _____	- Aluminum AL
inches (mm) x inches (mm)	- Special Custom Color SP
	FRAME / BORDER TYPE
	- Surface Mount (default) S

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel double deflection register, front blades vertical and steel damper, is Model 61DV-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
- Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
- The larger dimension must always be specified first; for example 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

61DV, 61DH Double Deflection

Furnish and install **Nailor Model** (select one) **61DV** or **61DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of streamlined shaped, roll-formed, corrosion-resistant steel blades that are adjustable, and spaced on 3/4" (19) centers. The frame is to be constructed from roll-formed, corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

61SV, 61SH Single Deflection

Furnish and install **Nailor Model** (select one) **61SV** or **61SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of streamlined shaped, roll-formed, corrosion-resistant steel blades that are adjustable, and spaced on 3/4" (19) centers. The frame is to be constructed from roll-formed, corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Stainless Steel Supply Grilles and Registers – Model Series 6700

GRILLES AND REGISTERS

MODEL		67	D	V	- O -	24 x 12 -	S -	#3 -	A -	—	
- 304 Stainless Steel Construction		67									
SUPPLY											
- Double Deflection			D								
- Single Deflection			S								
FRONT BLADE DIRECTION											
- Vertical				V							
- Horizontal				H							
DAMPER (OBD)											
- Stainless Steel					O						
- No Damper					—						
WIDTH x HEIGHT											
inches (mm) x inches (mm)											
										ACCESSORIES	
										- None (default)	—
										- S/S Plaster Sub-frame	PFS
										OPTION	
										- 316 Stainless Steel	316
										FASTENING	
										- Screw Holes (default)	A
										- None	N
										FINISH	
										- #3 Satin Polish (default)	#3
										- Appliance White	AW
										- Special	SP
										FRAME / BORDER TYPE	
										- Surface Mount (default)	S

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a stainless steel, double deflection register, front blades vertical, and stainless steel damper, is Model 67DV-O. Unit will be supplied with screw holes and #3 satin polished finish.
2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
3. The larger dimension must always be specified first; for example 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

67DV, 67DH Double Deflection

Furnish and install **Nailor Model** (select one) **67DV** or **67DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a dual set of streamlined shaped roll-formed adjustable blades that are spaced on 3/4" (19) centers. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #3 satin polished finish.

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

67SV, 67SH Single Deflection

Furnish and install **Nailor Model** (select one) **67SV** or **67SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a single set of streamlined shaped roll-formed adjustable blades that are spaced on 3/4" (19) centers. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #3 satin polished finish.

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Notes for Supply Grilles and Registers 5100, 6100 and 6700 Series

Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

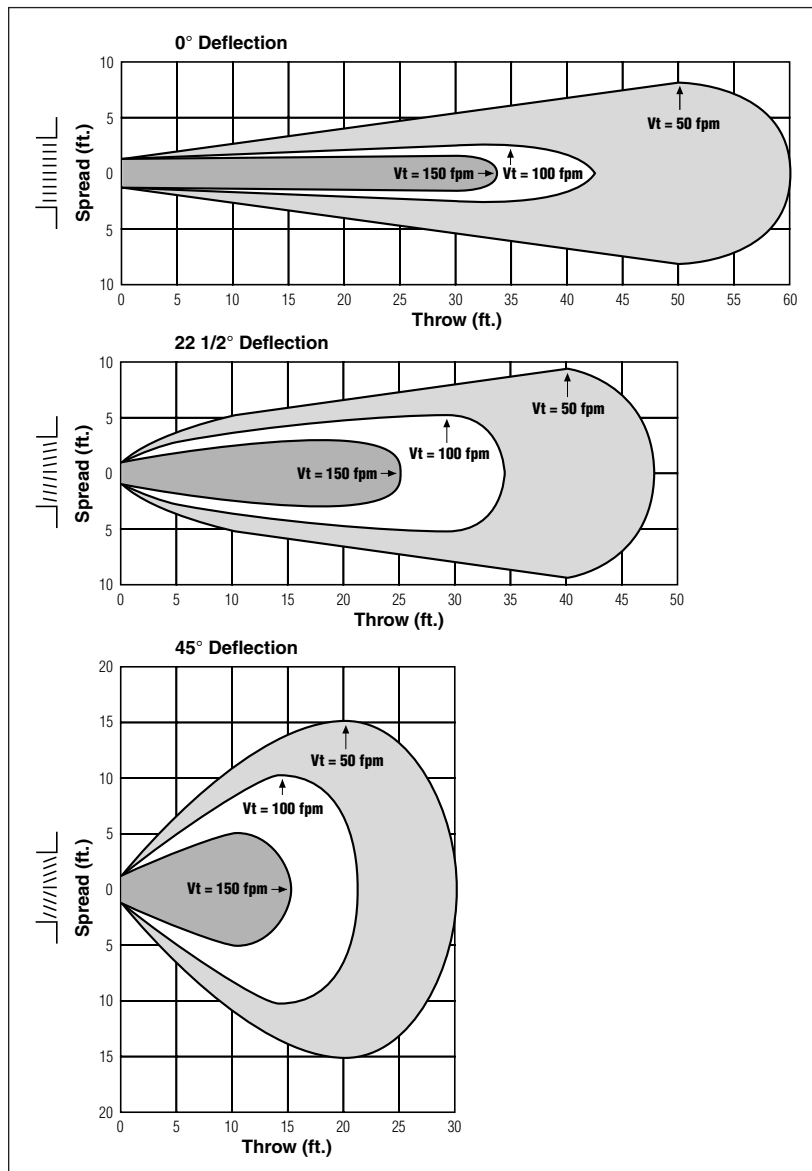
In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The

angle of spread and temperature differential between the supply air and room air (ΔT) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F ΔT) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

Spread Characteristics With Three Deflection Settings



NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

TP Correction Factors for Grilles Without Damper (multiply)

Blade deflection	0°	22 1/2°	45°
Double Defl. Factor	x .80	x .83	x .89
Single Defl. Factor	x .73	x .76	x .85

NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18

Performance Data

Supply Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH,
67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400
				0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
				TP 22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
6 x 6	8 x 4 10 x 4	0.20		CFM	60	80	100	120	140	160	200	240	280
				NC	—	—	—	14	19	23	29	35	40
			.14 .12 .10	0° 22 1/2° 45°	5-7-13 4-6-10 3-4-7	7-9-16 6-7-13 4-5-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-15-21 9-12-17 6-8-11	12-16-23 10-13-18 6-8-12	15-18-25 12-14-20 8-9-13	16-20-27 13-16-22 8-10-14	17-21-30 14-17-24 9-11-15
8 x 6	10 x 5 12 x 4	0.27		CFM	81	108	135	162	189	216	270	324	378
				NC	—	—	10	15	20	24	30	36	41
			.18 .16 .14	0° 22 1/2° 45°	5-8-15 4-6-12 3-4-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-16-23 9-13-18 6-8-12	13-18-25 10-14-20 7-9-13	15-19-27 12-15-22 8-10-14	17-21-30 14-17-24 9-11-15	18-23-32 14-18-26 9-12-16	19-24-35 15-19-28 10-12-18
10 x 6	12 x 5 16 x 4	0.35		CFM	105	140	175	210	245	280	350	420	490
				NC	—	—	11	16	21	25	31	37	42
			.24 .21 .18	0° 22 1/2° 45°	6-9-18 5-7-14 3-5-9	9-13-21 7-10-17 5-7-11	10-16-24 8-13-19 5-8-12	12-19-26 10-15-21 6-10-13	15-20-28 12-16-22 8-10-14	17-21-30 14-17-24 9-11-15	20-23-33 16-18-26 10-12-17	21-25-36 17-20-29 11-13-18	22-27-39 18-22-31 11-14-20
8 x 8	14 x 5	0.38		CFM	114	152	190	228	266	304	380	456	532
				NC	—	—	12	17	22	26	32	38	43
			.26 .22 .20	0° 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-29 13-17-23 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-26-37 17-21-30 11-13-19	23-28-40 18-22-32 12-14-20
12 x 6	18 x 4	0.42		CFM	126	168	210	252	294	336	420	504	588
				NC	—	—	12	17	22	26	32	38	43
			.29 .25 .22	0° 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-28-38 17-22-30 11-14-19	23-29-41 18-23-33 12-15-21
14 x 6	10 x 8	0.50		CFM	150	200	250	300	350	400	500	600	700
				NC	—	—	13	18	23	27	33	39	44
			.34 .30 .26	0° 22 1/2° 45°	6-11-20 5-9-16 3-6-10	10-15-23 8-12-18 5-8-12	12-18-25 10-14-20 6-9-13	15-20-28 12-16-22 8-10-14	16-22-31 13-18-25 8-11-16	19-23-33 15-18-26 10-12-17	21-25-36 17-20-29 11-13-18	23-28-40 18-22-32 12-14-20	25-31-43 20-25-34 13-16-22
12 x 8	16 x 6 24 x 4	0.58		CFM	174	232	290	348	406	464	580	696	812
				NC	—	—	14	19	24	28	34	40	45
			.39 .34 .30	0° 22 1/2° 45°	7-11-21 6-9-17 4-6-11	10-15-24 8-12-19 5-8-12	12-19-27 10-15-22 6-10-14	15-21-30 12-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-34 16-19-27 10-12-17	22-27-38 18-22-30 11-14-19	24-30-42 19-24-34 12-15-21	26-32-45 21-26-36 13-16-23
10 x 10	14 x 7 26 x 4	0.61		CFM	183	244	305	366	427	488	610	732	854
				NC	—	—	14	19	24	28	34	40	45
			.41 .36 .31	0° 22 1/2° 45°	7-11-21 6-9-17 4-6-11	10-16-24 8-13-19 5-8-12	13-19-28 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-35 16-19-28 10-12-18	23-28-39 18-22-31 12-14-20	24-30-43 19-24-34 12-15-22	27-32-46 22-26-37 14-16-23
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM	195	260	325	390	455	520	650	780	910
				NC	—	—	15	20	25	29	35	41	46
			.44 .38 .33	0° 22 1/2° 45°	7-12-22 6-10-18 4-6-11	11-16-25 9-13-20 6-8-13	13-20-29 10-16-23 7-10-15	16-22-32 13-18-26 8-11-16	18-24-34 14-19-27 9-12-17	21-25-36 17-20-29 11-13-18	24-29-40 19-23-32 12-15-20	25-32-45 20-26-36 13-16-23	28-34-48 22-27-38 14-17-24
12 x 10	20 x 6 24 x 5	0.74		CFM	222	296	370	444	518	592	740	888	1036
				NC	—	—	15	20	25	29	35	41	46
			.50 .44 .38	0° 22 1/2° 45°	8-13-24 6-10-19 4-7-12	11-17-27 9-14-22 6-9-14	14-21-31 11-17-25 7-11-16	17-24-33 14-19-26 9-12-17	20-26-36 16-21-29 10-13-18	22-27-39 18-22-31 11-14-20	25-31-43 20-25-34 13-16-22	27-33-48 22-26-38 14-17-24	30-36-51 24-29-41 15-18-26
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM	240	320	400	480	560	640	800	960	1120
				NC	—	—	16	21	26	30	36	42	47
			.54 .47 .41	0° 22 1/2° 45°	8-13-25 6-10-20 4-7-13	11-18-28 9-14-22 6-9-14	15-22-32 12-18-26 8-11-16	18-25-35 14-20-28 9-13-18	20-27-38 16-22-30 10-14-19	23-28-41 18-22-33 12-14-21	26-32-45 21-26-36 13-16-23	28-35-50 22-28-40 14-18-25	31-38-53 25-30-42 16-19-27
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM	270	360	450	540	630	720	900	1080	1260
				NC	—	—	16	21	26	30	36	42	47
			.61 .53 .46	0° 22 1/2° 45°	9-14-26 7-11-21 5-7-13	12-18-29 10-14-23 6-9-15	15-23-33 12-18-26 8-12-17	18-26-36 14-21-29 9-13-18	21-27-39 17-22-31 11-14-20	24-29-42 19-23-34 12-15-21	27-33-47 22-26-38 14-17-24	29-36-51 23-29-41 15-18-26	32-39-56 26-31-45 16-20-28
18 x 10	30 x 6	1.13		CFM	339	452	565	678	791	904	1130	1356	1582
				NC	—	—	17	22	27	31	37	43	48
			.77 .67 .58	0° 22 1/2° 45°	9-15-29 7-12-23 5-8-15	14-20-33 11-16-26 7-10-17	17-25-36 14-20-29 9-13-18	20-29-40 16-23-32 10-15-20	24-30-43 19-24-34 12-15-22	27-33-46 22-26-37 14-17-23	30-36-51 24-29-41 15-18-26	33-40-57 26-32-46 17-20-29	35-43-61 28-34-49 18-22-31

Performance Data

Supply Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH,
67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400
				0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
				TP 22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM NC	372	496	620	744	868	992	1240	1488	1736
				0°	—	10	17	22	27	31	37	43	48
			.84 .73 .64	T 22 1/2° 45°	11-18-33 9-14-26 6-9-17	16-25-39 13-20-31 8-13-20	20-29-42 16-23-34 10-15-21	24-33-47 19-26-38 12-17-24	27-36-51 22-29-41 14-18-26	31-39-54 25-31-43 16-20-27	35-42-60 28-34-48 18-21-30	39-47-66 31-38-53 20-24-33	41-51-71 33-41-57 21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM NC	411	548	685	822	959	1096	1370	1644	1918
				0°	—	11	18	23	28	32	38	44	49
			.93 .81 .71	T 22 1/2° 45°	11-18-33 9-14-26 6-9-17	16-25-39 13-20-31 8-13-20	20-30-43 16-24-34 10-15-22	24-33-47 19-26-38 12-17-24	28-36-51 22-29-41 14-18-26	32-39-54 26-31-43 16-20-27	35-43-61 28-34-49 18-22-31	39-47-67 31-38-54 20-24-34	41-51-72 33-41-58 21-26-36
24 x 10	20 x 12 30 x 8	1.52		CFM NC	456	608	760	912	1064	1216	1520	1824	2128
				0°	—	11	18	23	28	32	38	44	49
			1.03 .90 .78	T 22 1/2° 45°	12-19-35 10-15-28 6-10-18	16-25-41 13-20-33 8-13-21	21-32-45 17-26-36 11-16-23	25-35-50 20-28-40 13-18-25	29-38-53 23-30-42 15-19-27	34-41-57 27-33-46 17-21-29	37-45-64 30-36-51 19-23-32	41-50-70 33-40-56 21-25-35	43-53-76 34-42-61 22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM NC	492	656	820	984	1148	1312	1640	1968	2296
				0°	—	11	18	23	28	32	38	44	49
			1.12 .97 .84	T 22 1/2° 45°	12-20-37 10-16-30 6-10-19	17-26-42 14-21-34 9-13-21	22-32-47 18-26-38 11-16-24	26-37-51 21-30-41 13-19-26	31-40-56 25-32-45 16-20-28	35-42-59 28-34-47 18-21-30	39-47-67 31-38-54 20-24-34	42-51-73 34-41-58 21-26-37	46-56-79 37-45-63 23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM NC	555	740	925	1110	1295	1480	1850	2220	2590
				0°	—	12	19	24	29	33	39	45	50
			1.26 1.09 .95	T 22 1/2° 45°	12-20-38 10-16-30 6-10-19	18-27-44 14-22-35 9-14-22	22-33-48 18-26-38 11-17-24	27-38-54 22-30-43 14-19-27	32-40-58 26-32-46 16-20-29	36-44-62 29-35-50 18-22-31	40-48-69 32-38-55 20-24-35	44-54-76 35-43-61 22-27-38	48-58-82 38-46-66 24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM NC	630	840	1050	1260	1470	1680	2100	2520	2940
				0°	—	12	19	24	29	33	39	45	50
			1.43 1.24 1.08	T 22 1/2° 45°	13-21-40 10-17-32 7-11-20	19-29-47 15-23-38 10-15-24	24-36-52 19-29-42 12-18-26	29-40-57 23-32-46 15-20-29	33-43-62 26-34-50 17-22-31	38-47-66 30-38-53 19-24-33	42-52-74 34-42-59 21-26-37	47-57-81 38-46-65 24-29-41	50-62-87 40-50-70 25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM NC	696	928	1160	1392	1624	1856	2320	2784	3248
				0°	—	13	20	25	30	34	40	46	51
			1.58 1.37 1.19	T 22 1/2° 45°	14-23-43 11-18-34 7-12-22	21-31-50 17-25-40 11-16-25	26-39-56 21-31-45 13-20-28	31-43-61 25-34-49 16-22-31	36-47-67 29-38-54 18-24-34	41-50-71 33-40-57 21-25-36	46-56-79 32-45-63 23-28-40	50-61-86 40-49-69 25-31-43	54-67-94 43-54-75 27-34-47
24 x 16	32 x 12	2.50		CFM NC	750	1000	1250	1500	1750	2000	2500	3000	3500
				0°	—	13	20	25	30	34	40	46	51
			1.70 1.48 1.29	T 22 1/2° 45°	14-24-45 11-19-36 7-12-23	22-32-52 18-26-42 11-16-26	27-40-58 22-32-46 14-20-29	32-45-64 26-36-51 16-23-32	37-49-68 30-39-54 19-25-34	43-52-74 34-42-59 22-26-37	48-58-82 38-46-66 24-29-41	52-64-90 42-51-72 26-32-45	56-68-97 45-54-78 28-34-49
20 x 20	22 x 18	2.61		CFM NC	783	1044	1305	1566	1827	2088	2610	3132	3654
				0°	—	13	20	25	30	34	40	46	51
			1.77 1.54 1.34	T 22 1/2° 45°	15-24-46 12-19-37 8-12-23	22-32-53 18-26-42 11-16-27	27-41-59 22-33-47 14-21-30	32-46-65 26-37-52 16-23-33	38-50-70 30-40-56 19-25-35	44-53-75 35-42-60 22-27-38	49-59-84 39-47-67 25-30-42	53-65-92 42-52-74 27-33-46	58-70-99 46-56-79 29-35-50
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM NC	837	1116	1395	1674	1953	2232	2790	3348	3906
				0°	—	13	20	25	30	34	40	46	51
			1.90 1.65 1.44	T 22 1/2° 45°	15-25-48 12-20-38 8-13-24	23-34-55 18-27-44 12-17-28	28-42-61 22-34-49 14-21-31	34-48-68 27-38-54 17-24-34	4-51-73 32-41-58 20-26-37	45-55-77 36-44-62 23-28-39	50-61-86 40-49-69 25-31-43	55-68-95 44-54-76 28-34-48	59-73-103 47-58-82 30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM NC	951	1268	1585	1902	2219	2536	3170	3804	4438
				0°	—	14	21	26	31	35	41	47	52
			2.16 1.87 1.63	T 22 1/2° 45°	17-27-50 14-22-40 9-14-25	24-36-58 19-29-46 12-18-29	29-45-65 23-36-52 15-23-33	36-50-71 29-40-57 18-25-36	42-54-77 34-43-62 21-27-39	47-58-82 38-46-66 24-29-41	53-65-92 42-52-74 27-33-46	58-71-101 46-57-81 29-36-51	62-77-109 50-62-87 31-39-55
42 x 12	36 x 14	3.27		CFM NC	981	1308	1635	1962	2289	2616	3270	3924	4578
				0°	—	14	21	26	31	35	41	47	52
			2.22 1.93 1.68	T 22 1/2° 45°	17-27-51 14-22-41 9-14-26	24-36-59 19-29-47 12-18-30	30-45-66 24-36-53 15-23-33	36-51-72 29-41-58 18-26-36	42-55-77 34-44-62 21-28-39	48-59-83 38-47-66 24-30-42	53-66-93 42-53-74 27-33-47	59-72-101 47-58-81 3-36-51	63-77-109 50-62-87 32-39-55
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM NC	1062	1416	1770	2124	2478	2832	3540	4248	4956
				0°	—	14	21	26	31	35	41	47	52
			2.41 2.09 1.82	T 22 1/2° 45°	18-28-53 14-22-42 9-14-27	25-37-61 20-30-49 13-19-31	31-47-69 25-38-55 16-24-35	37-53-75 30-42-60 19-27-38	44-57-81 35-46-65 22-29-41	50-61-86 40-49-69 25-31-43	56-69-97 45-55-78 28-35-49	61-75-106 49-60-85 31-38-53	66-81-115 53-65-92 33-41-58

G

GRILLES AND REGISTERS

Performance Data

Supply Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH,
67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400
				0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
				TP 22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM NC	1137	1516	1895	2274	2653	3032	3790	4548	5306
				0°	—	14	21	26	31	35	41	47	52
			2.58	T 0°	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
			2.24	T 22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
36 x 18	32 x 20 40 x 16 46 x 14	4.29	1.95	T 45°	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	29-35-50	31-39-54	34-42-59
				CFM NC	1287	1716	2145	2574	3003	3432	4290	5148	6006
			2.92	T 0°	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
			2.53	T 22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
26 x 26	28 x 24 48 x 14	4.47	2.21	T 45°	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	31-38-53	34-42-59	37-45-63
				CFM NC	1341	1788	2235	2682	3129	3576	4470	5364	6258
			3.04	T 0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
			2.64	T 22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
30 x 24	32 x 22 36 x 20 40 x 18	4.77	2.30	T 45°	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65
				CFM NC	1431	1908	2385	2862	3339	3816	4770	5724	6678
			3.24	T 0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
			2.81	T 22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
42 x 18	28 x 26	4.99	2.46	T 45°	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	33-40-56	36-44-62	39-47-67
				CFM NC	1497	1996	2495	2994	3493	3992	4990	5988	6986
			3.39	T 0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
			2.94	T 22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
28 x 28	30 x 26 36 x 22 40 x 20	5.20	2.57	T 45°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	30-36-51	33-40-57	36-44-63	39-48-68
				CFM NC	1560	2080	2600	3120	3640	4160	5200	6240	7280
			3.54	T 0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
			3.07	T 22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
42 x 20	30 x 28	5.57	2.68	T 45°	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	34-41-58	37-45-64	40-49-69
				CFM NC	1671	2228	2785	3342	3899	4456	5570	6684	7798
			3.79	T 0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
			3.29	T 22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114
36 x 24	40 x 22 44 x 20	5.74	2.87	T 45°	11-18-33	16-24-38	20-29-42	24-33-47	28-36-50	31-38-54	35-42-60	38-47-66	41-50-71
				CFM NC	1722	2296	2870	3444	4018	4592	5740	6888	8036
			3.90	T 0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
			3.39	T 22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
30 x 30	34 x 26 38 x 24 48 x 20	5.99	2.96	T 45°	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	36-44-62	39-48-69	43-52-74
				CFM NC	1797	2396	2995	3594	4193	4792	5990	7188	8386
			4.07	T 0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
			3.53	T 22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
42 x 24	36 x 28 42 x 24 46 x 22	6.72	3.08	T 45°	12-18-35	17-25-40	21-31-45	25-35-49	29-38-53	33-40-57	37-45-63	40-49-69	43-53-75
				CFM NC	2016	2688	3360	4032	4704	5376	6720	8064	9408
			4.57	T 0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
			3.96	T 22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
32 x 32	40 x 26	6.84	3.46	T 45°	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	39-47-66	42-51-72	45-56-79
				CFM NC	2052	2736	3420	4104	4788	5472	6840	8208	9576
			4.65	T 0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
			4.04	T 22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	73-90-126
36 x 30	38 x 28	7.22	3.52	T 45°	12-20-37	17-26-42	22-33-47	26-37-52	31-40-56	35-42-60	39-47-67	42-52-73	46-56-79
				CFM NC	2166	2888	3610	4332	5054	5776	7220	8664	10108
			4.91	T 0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
			4.26	T 22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	3.72	T 45°	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	40-49-70	44-54-76	47-58-82
				CFM NC	2307	3076	3845	4614	5383	6152	7690	9228	10766
			5.23	T 0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
			4.54	T 22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
			3.96	T 45°	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	41-50-71	45-55-78	49-59-84

Performance Data

Supply Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH,
67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400
				0°	.006	.010	.016	.022	.031	.040	.062	.090	.122
				TP 22 1/2°	.015	.026	.041	.059	.081	.106	.165	.238	.324
				45°	.017	.030	.047	.068	.093	.122	.190	.274	.373
					.026	.046	.072	.103	.142	.186	.289	.417	.567
36 x 34	38 x 32 40 x 30 48 x 26	8.20		CFM NC	2460	3280	4100	4920	5740	6560	8200	9840	11480
					—	18	25	30	35	39	45	51	56
			5.58	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
			4.84	T 22 1/2°	21-34-63	30-46-73	38-56-82	46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	78-97-137
			4.22	45°	13-21-40	19-29-46	24-35-51	29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86
36 x 36	38 x 34 42 x 30 46 x 28	8.69		CFM NC	2607	3476	4345	5214	6083	6952	8690	10428	12166
					—	18	25	30	35	39	45	51	56
			5.91	0°	28-45-84	39-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
			5.13	T 22 1/2°	22-36-67	31-48-77	39-59-86	48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	83-102-144
			4.48	45°	14-23-42	20-30-48	25-37-54	30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90
38 x 38	42 x 34	9.70		CFM NC	2910	3880	4850	5820	6790	7760	9700	11640	13580
					10	19	26	31	36	40	46	52	57
			6.60	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
			5.72	T 22 1/2°	22-38-70	34-50-81	42-62-91	50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	87-107-152
			5.00	45°	14-24-44	21-31-51	27-39-57	31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95
42 x 36	44 x 34 48 x 30	10.16		CFM NC	3048	4064	5080	6096	7112	8128	10160	12192	14224
					10	19	26	31	36	40	46	52	57
			6.91	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
			5.99	T 22 1/2°	23-38-72	34-51-83	42-64-94	51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	90-110-156
			5.23	45°	15-24-45	22-32-52	27-40-59	32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98
40 x 40	42 x 38 46 x 34 48 x 32	10.77		CFM NC	3231	4308	5385	6462	7539	8616	10770	12924	15078
					10	19	26	31	36	40	46	52	57
			7.32	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
			6.35	T 22 1/2°	25-40-75	35-54-86	45-67-97	54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	94-114-162
			5.55	45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	50-61-86	54-66-94	59-72-102
42 x 42	44 x 40 46 x 38 48 x 36	11.89		CFM NC	3567	4756	5945	7134	8323	9512	11890	14268	16646
					11	20	27	32	37	41	47	53	58
			8.09	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-149-210
			7.02	T 22 1/2°	26-42-78	37-55-90	46-69-100	55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	98-119-168
			6.12	45°	16-26-49	23-35-56	29-43-63	35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105
44 x 44	46 x 42	13.07		CFM NC	3921	5228	6535	7842	9149	10456	13070	15684	18298
					11	20	27	32	37	41	47	53	58
			8.89	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
			7.71	T 22 1/2°	27-44-83	39-59-96	49-74-106	59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	103-126-178
			6.73	45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112
46 x 46		14.30		CFM NC	4290	5720	7150	8580	10010	11440	14300	17160	20020
					11	20	27	32	37	41	47	53	58
			9.72	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
			8.44	T 22 1/2°	28-46-86	41-61-99	50-76-110	61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	107-130-185
			7.36	45°	18-29-54	26-38-62	32-48-69	38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	62-82-116
48 x 48		15.59		CFM NC	4677	6236	7795	9354	10913	12472	15590	18708	21826
					12	21	28	33	38	42	48	54	59
			10.60	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
			9.20	T 22 1/2°	30-48-90	42-64-105	54-80-117	64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	112-138-195
			8.03	45°	19-30-57	27-40-66	34-50-73	40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122

CFM - cubic feet per minute

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts @ 0° deflection.

Core velocity is in feet per minute.

Performance Notes:

1. Performance data is based on double deflection grille with opposed blade damper (register).

2. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.

3. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.

4. Additional performance notes and correction factors for various models and settings may be found on page G23.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

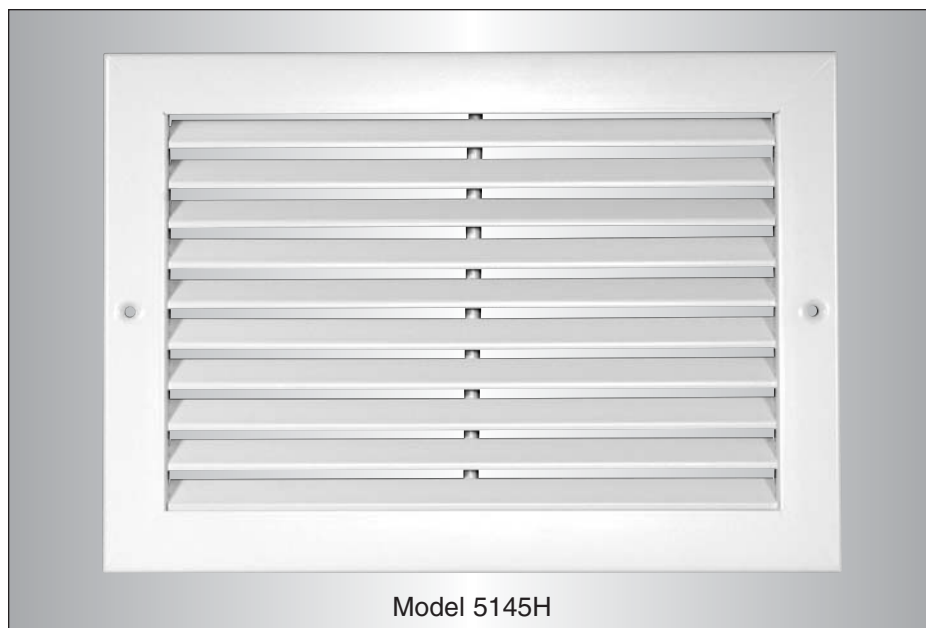
ALUMINUM RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

Models:

5145H, 5145V, 51FH and 51FV

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Models 5145H and 51FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 5145V and 51FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance compliments the supply grilles and registers in the **5100 Series**.

The streamlined blades and open spacing maintain an effective free area average capacity of over 50% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille deflection facing away from the line of sight.

The design features a concealed rear reinforcing blade support mullion on 45° models. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and compliment "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

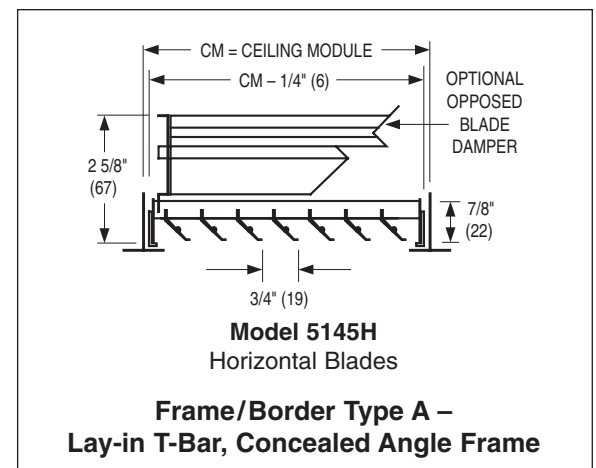
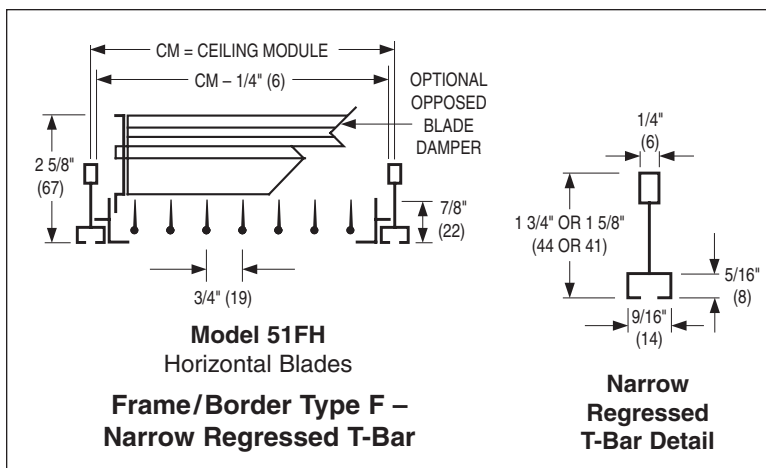
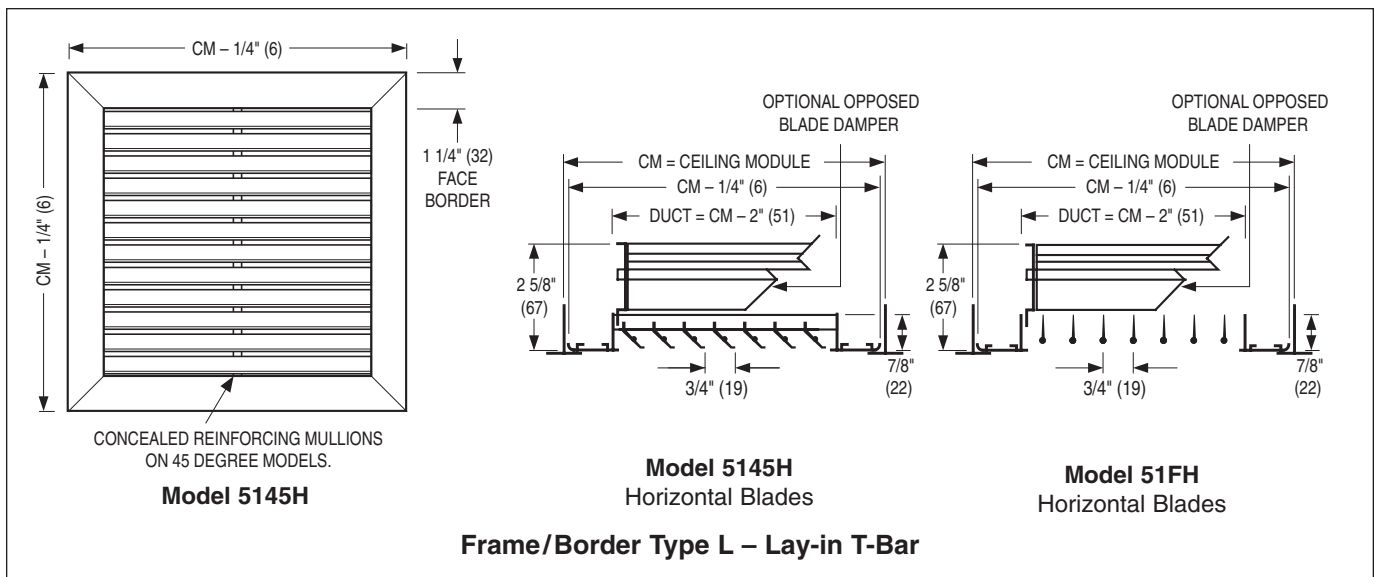
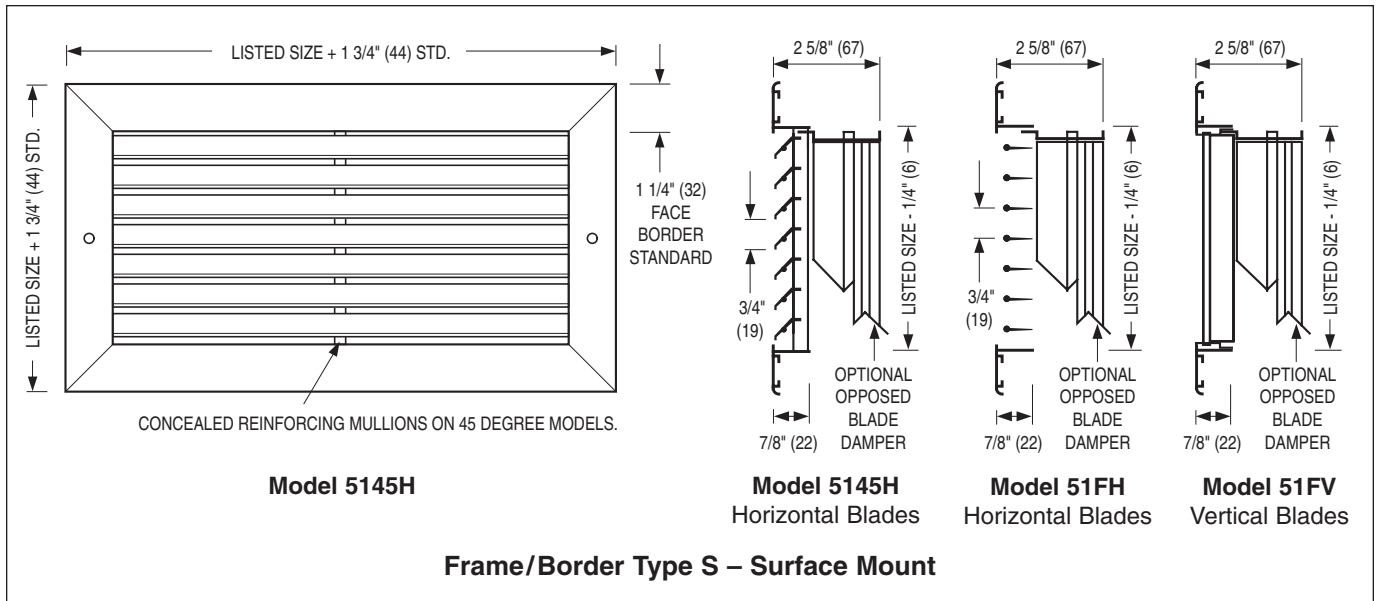
Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G175 in the Options and Accessories section for further information.

FEATURES:

- High quality, extruded aluminum construction.
- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.
- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

Dimensional Data

5100 Series Return 3/4" (19) Blade Spacing



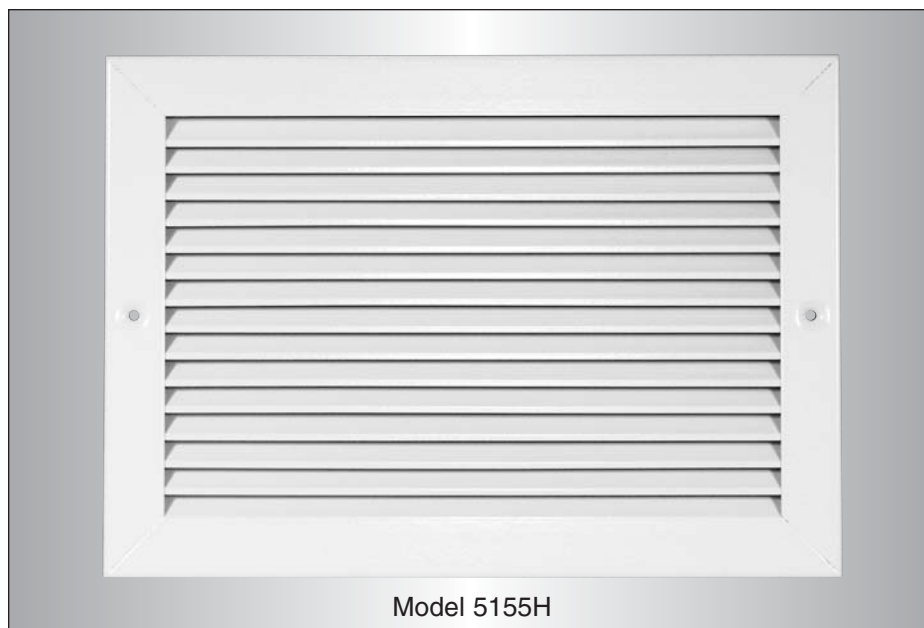
ALUMINUM RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

Models:

5155H and 5155V

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Models 5155H and 5155V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a "no see-through" design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

The design features a concealed rear reinforcing blade support mullion. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and compliment "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

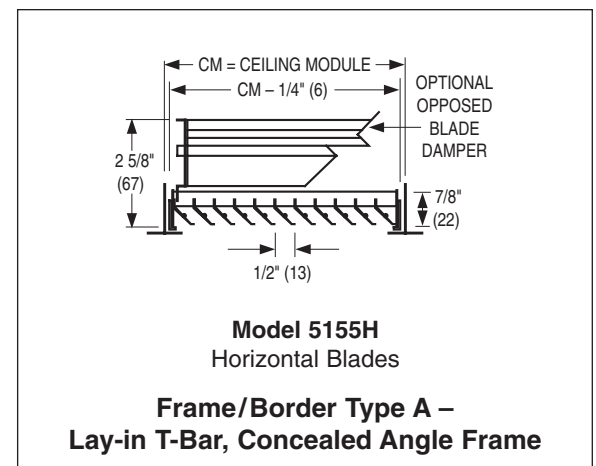
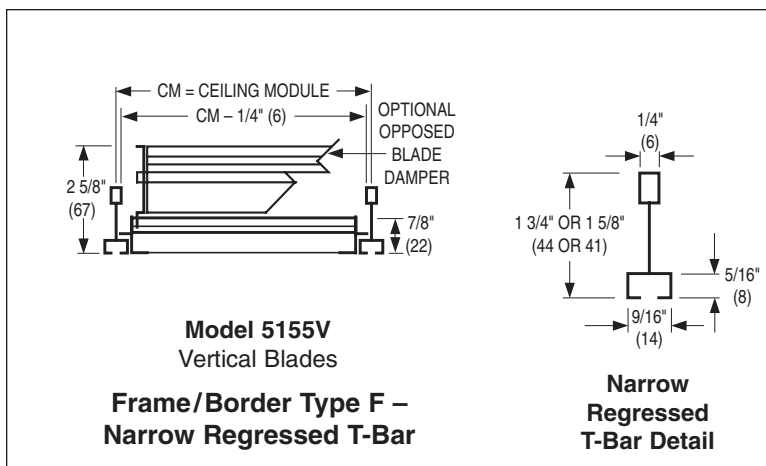
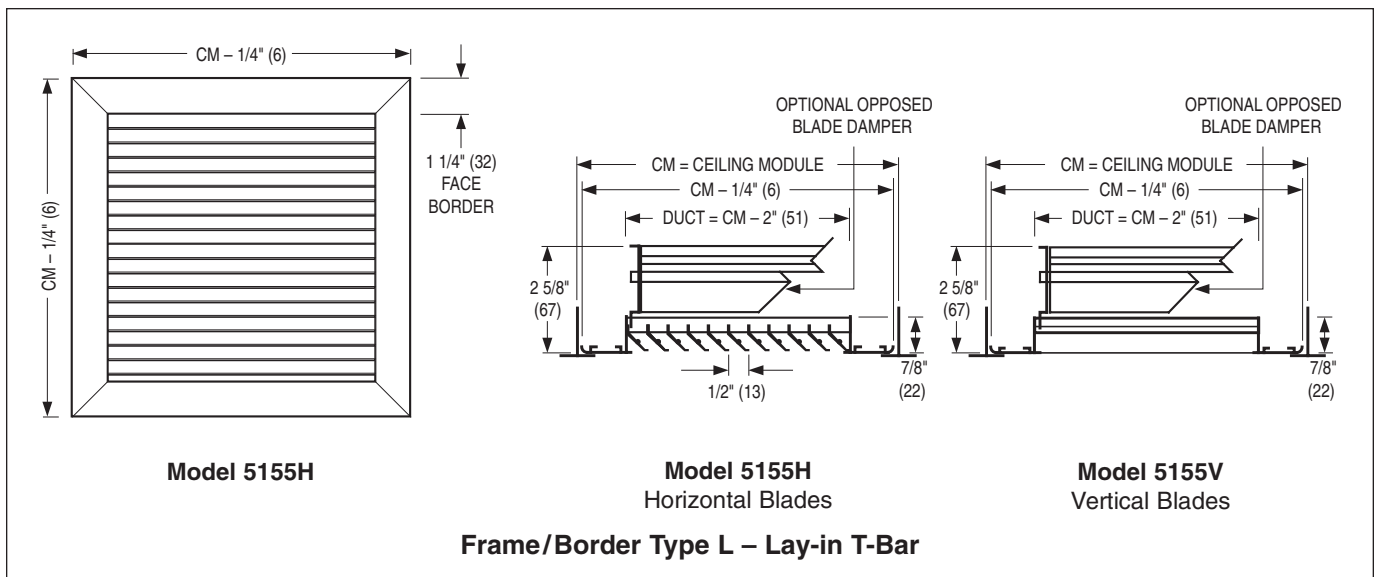
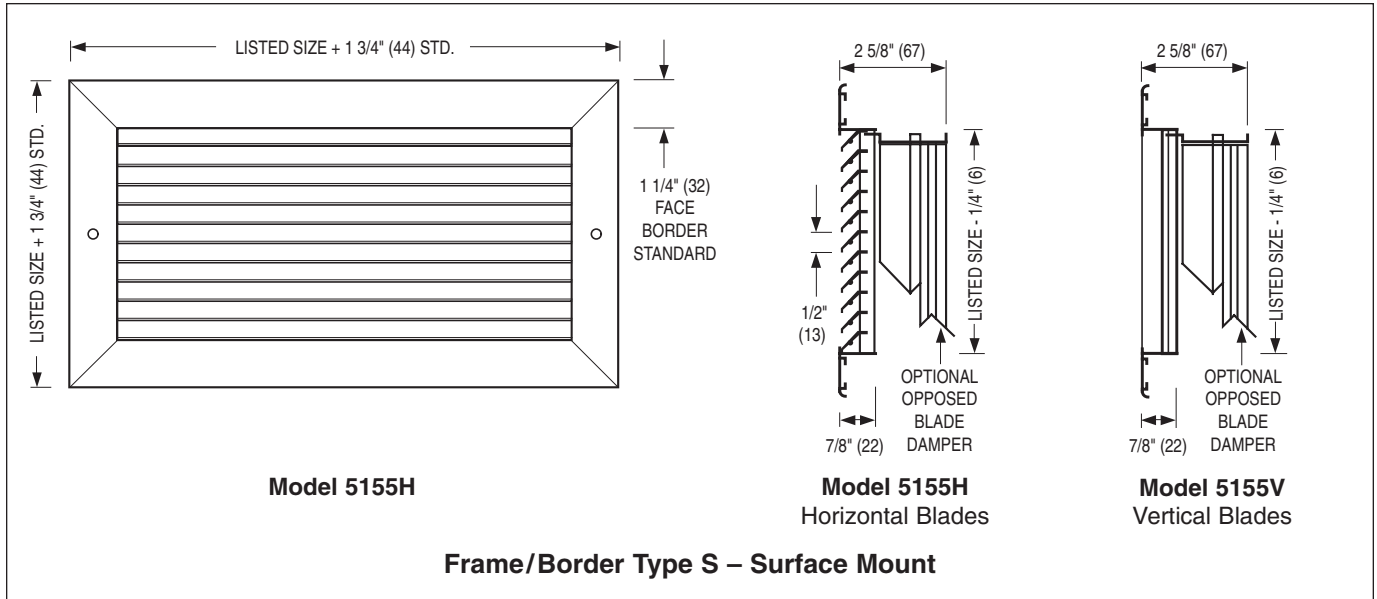
Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G175 in the Options and Accessories section for further information.

FEATURES:

- Extruded aluminum construction.
- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and mounting screws.
- NF Narrow Frame with 1" (25) face border optional.
- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped solid blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver operator.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

Dimensional Data

5100 Series Return 1/2" (13) Blade Spacing



STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

Models:

6145H, 6145V, 61FH and 61FV

- Suffix '-O' adds a steel opposed blade damper



Models 6145H and 61FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 6145V and 61FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance compliments the supply grilles and registers in the **6100 Series**.

The streamlined blades and open spacing maintain a minimum effective free area of 50% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight. Concealed blade support mullions on 45° models provide a continuous louvered blade appearance on all single section sizes, thereby offering superior architectural appearance.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and compliment "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

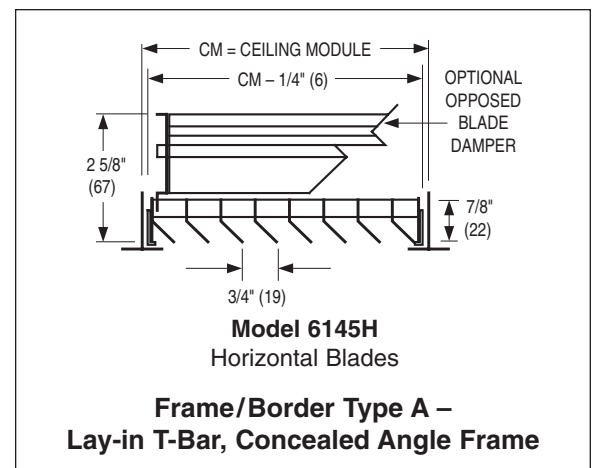
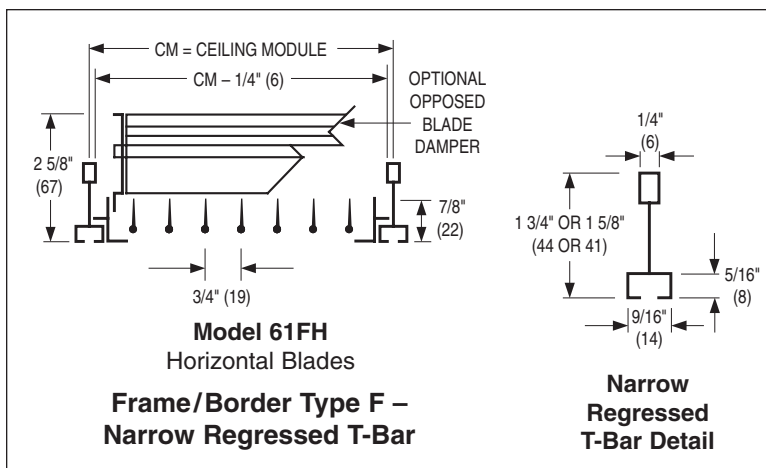
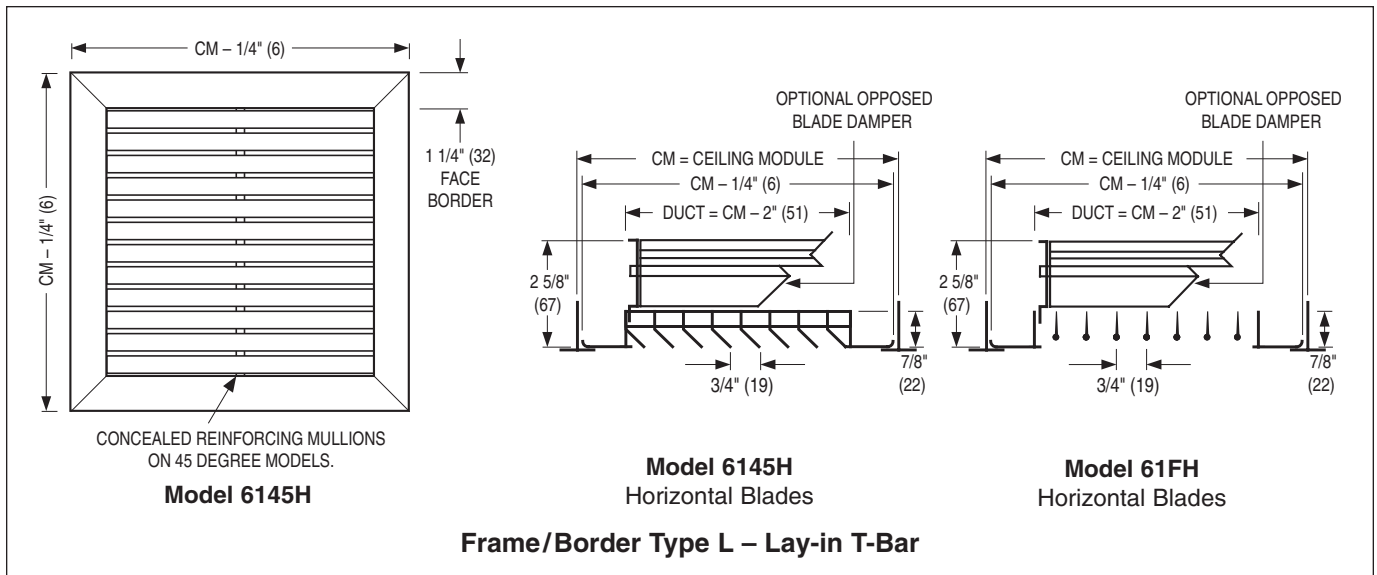
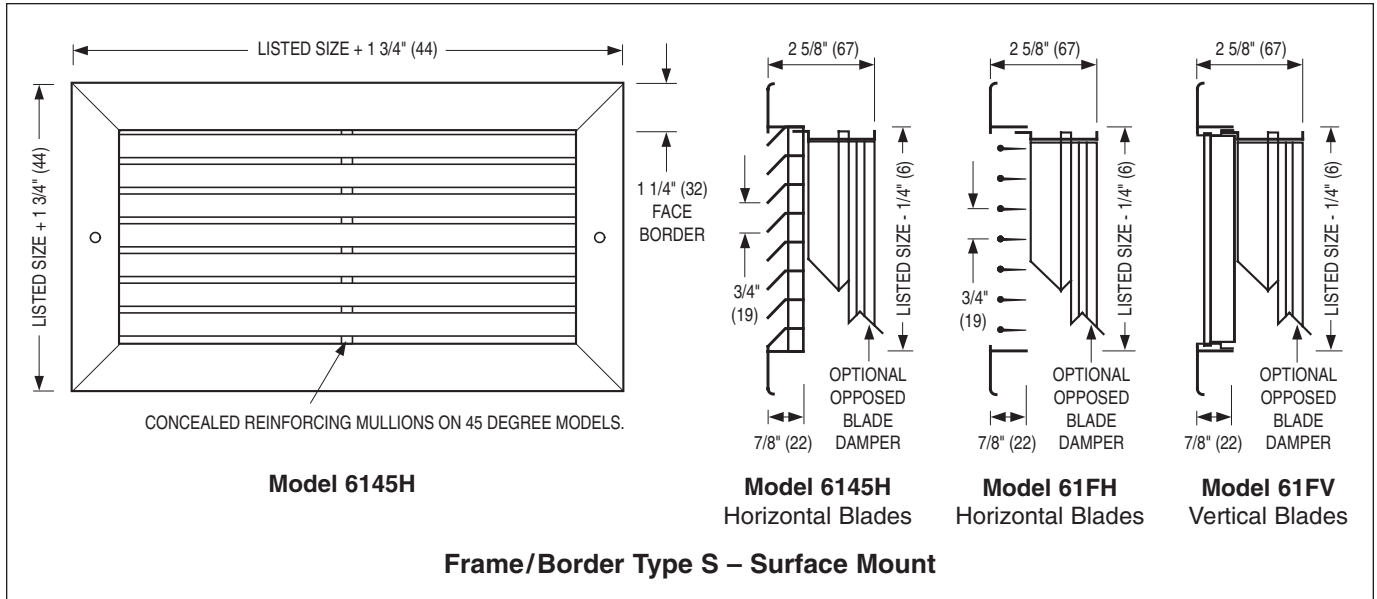
Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G175 in the Options and Accessories section for further information.

FEATURES:

- Cost effective, corrosion-resistant steel construction.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.
- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.
- Rigid, roll-formed frames with reinforced mitered corners.
- AW Appliance White baked enamel finish is standard. Other finishes are available.

Dimensional Data

6100 Series Return 3/4" (19) Blade Spacing



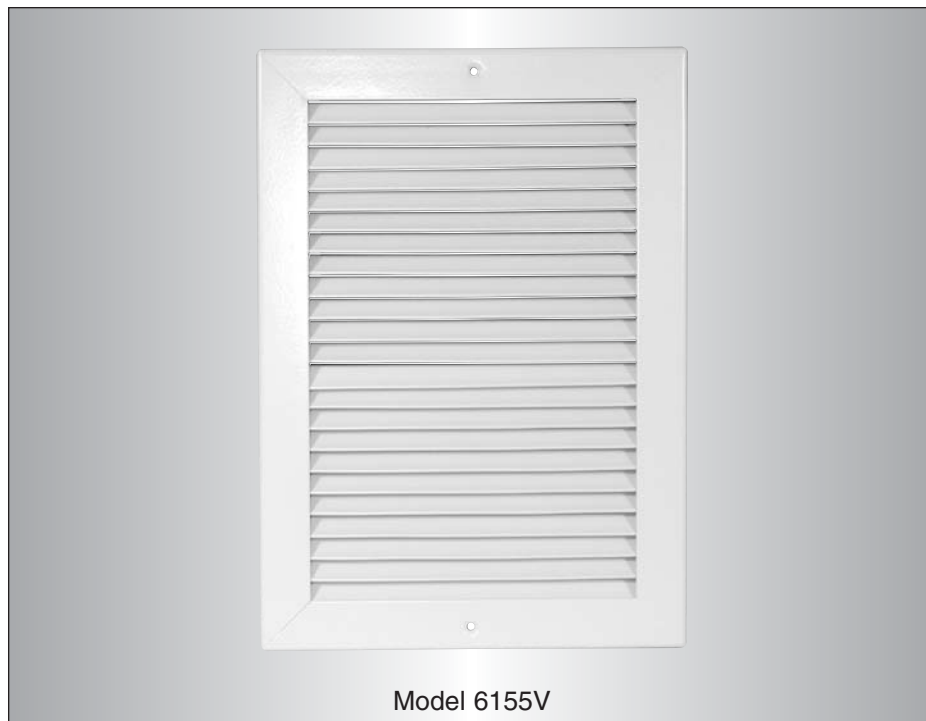
STEEL RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

Models:

6155H and 6155V

- Suffix '-O' adds a steel opposed blade damper



G

GRILLES AND REGISTERS

Models 6155H and 6155V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined roll-formed blade design features a concealed rear reinforcing mullion for support. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance. The open design maintains a minimum effective free area of 40%.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a "no see-through" design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and compliment "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

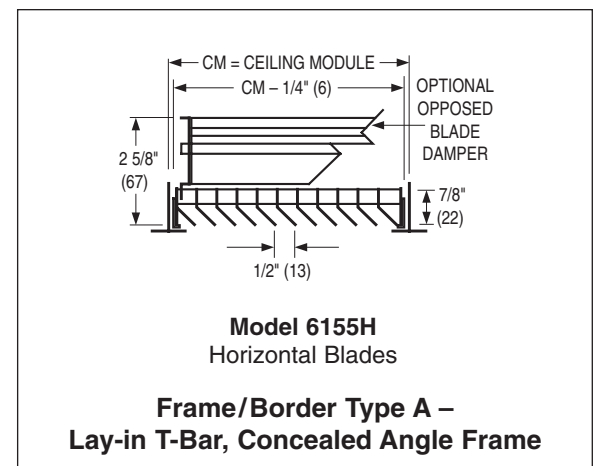
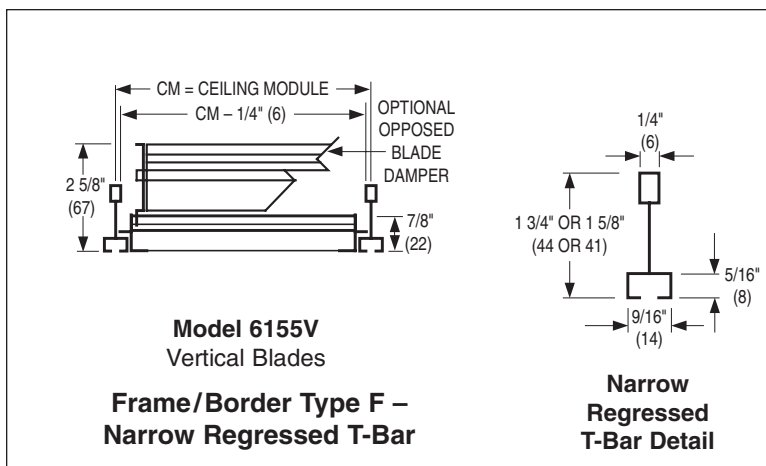
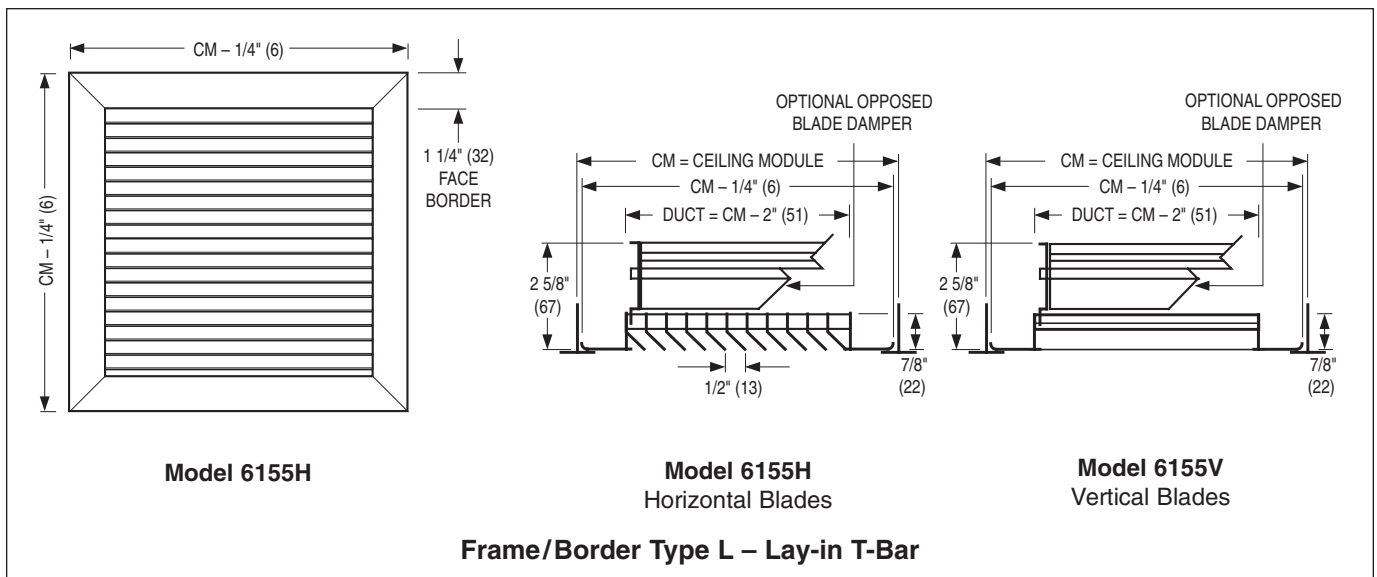
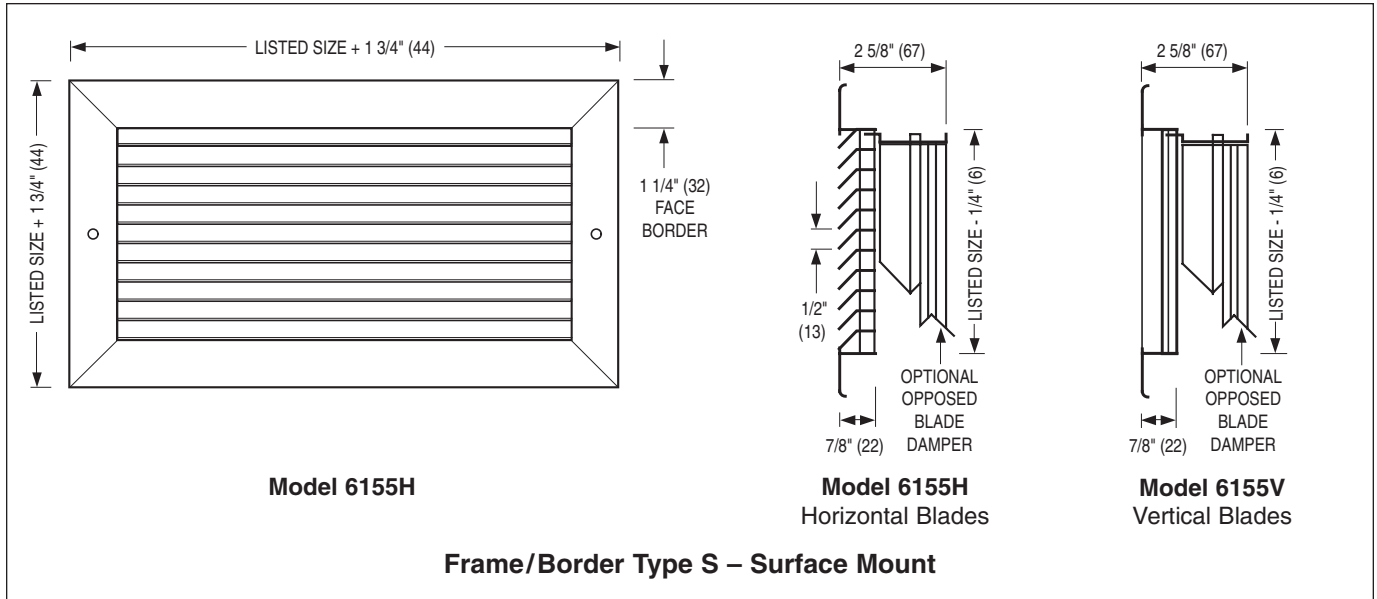
Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G175 in the Options and Accessories section for further information.

FEATURES:

- Cost effective, corrosion-resistant steel construction.
- Streamlined shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.
- Frame/Border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.
- Rigid, roll-formed frames with reinforced mitered corners.

Dimensional Data

6100 Series Return 1/2" (13) Blade Spacing



STAINLESS STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

Models:

6745H, 6745V, 67FH and 67FV

- Suffix '-O' adds a stainless steel opposed blade damper



Model 6745H

Models 6745H and 67FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

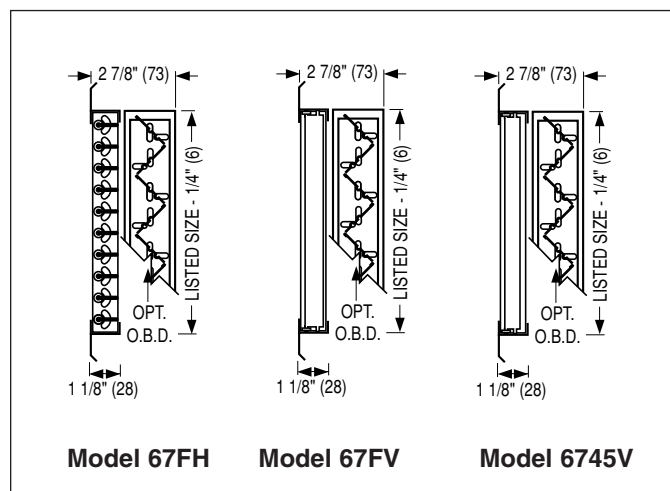
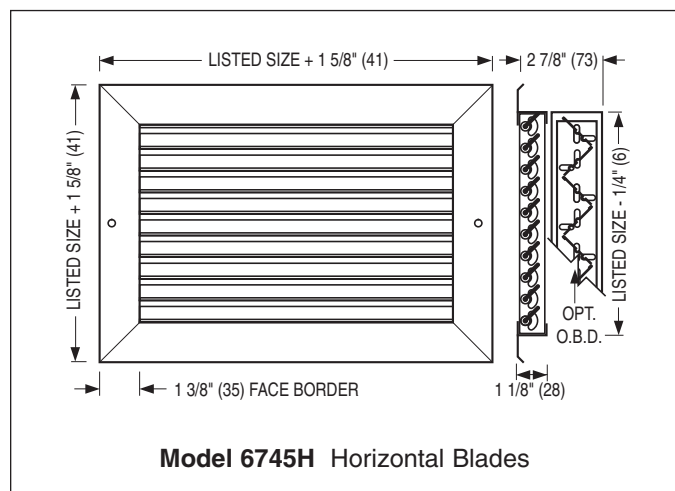
Models 6745V and 67FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance compliments the supply grilles and registers in the **6700 Series**.

The streamlined blades and open spacing maintain a minimum effective free area of 50% for 45° and 70% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected bar grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

FEATURES:

- Type 304 stainless steel construction.
- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.
- #3 Satin polished finish is standard.
- AW Appliance White baked enamel finish is optional. Other finishes are available.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).
- Type 316 stainless steel construction available as an option.



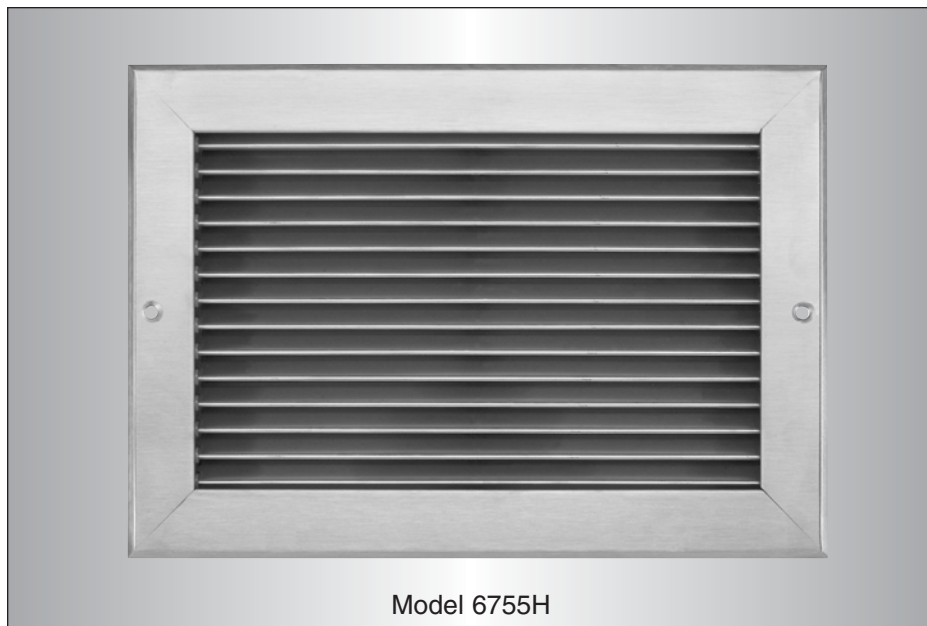
STAINLESS STEEL RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

Models:

6755H and 6755V

- Suffix '-O' adds a stainless steel opposed blade damper



Models 6755H and 6755V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

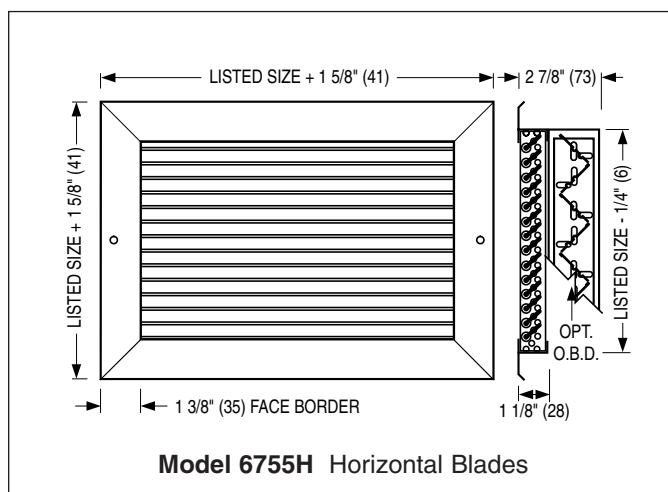
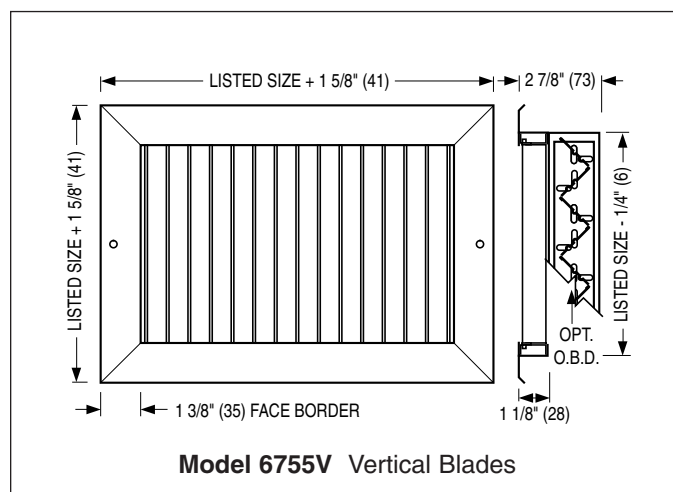
The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a 'no see-through' design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

FEATURES:

- Type 304 stainless steel construction.
- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.
- #3 Satin polished finish is standard.
- AW Appliance White baked enamel finish is optional. Other finishes are available.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).
- Type 316 stainless steel construction available as an option.



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Return Grilles and Registers – Model Series 5100

GRILLES AND REGISTERS

G

51 45 H - O - 24 x 12 - S - OO - AW - A - —			
MODEL		ACCESSORIES	
- Aluminum Construction	51	- None (default)	—
RETURN		- Plaster Sub-frame	PF
- Fixed 0° Defl., 3/4" (19) Spacing	F	- Earthquake Tabs	EQT
- Fixed 45° Defl., 3/4" (19) Spacing	45		
- Fixed 45° Defl., 1/2" (13) Spacing	55		
BLADE DIRECTION		FASTENING	
- Horizontal	H	(only for frame / border types S, NF)	
(Blades run long dimension)		- Screw Holes (default)	A
- Vertical	V	- Concealed Mounting Straps***	C
(Blades run short dimension)		- Concealed Screw Holes in Neck****D	N
		- None	N
DAMPER (OBD)		FINISH	
- Steel (standard)	O	- Appliance White (default)	AW
- Aluminum	OA	- Aluminum	AL
- No Damper	—	- Special Custom Color	SP
		- Satin (clear) Anodized	SA
WIDTH x HEIGHT		CEILING MODULE SIZE	
inches (mm) x inches (mm)		(Use only for panel mounting, frame / border types PL, SP, MP, FP, TP)	
For Type S, NF, PL, SP, MP, FP and TP, W x H = Duct Size		- None (default)	OO
For Type L, F, and A, W x H = Ceiling Module Size		Imperial:	
		12 x 12, 24 x 12, 36 x 12,	
FRAME / BORDER TYPE		48 x 12, 20 x 20, 24 x 24,	
Surface Mount:		36 x 24, 48 x 24	
- Standard 1 1/4" (32) (default)	S	Metric:	
- Narrow 1" (25)	NF	300 x 300, 600 x 300, 900 x 300,	
Ceiling Grid:		1200 x 300, 500 x 500, 600 x 600,	
- Lay-in T-Bar *	L	900 x 600, 1200 x 600	
- Angle Frame	A		
- Fineline®	F		
Panel Mount: **	Steel	Aluminum	
- Lay-in T-Bar	PLS or	PLA	
- Spline	SPS or	SPA	
- Metal Pan	MPS or	MPA	
- Fineline® Type	FPS or	FPA	
- Tegular	TPS or	TPA	

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and steel damper, is Model 5145H-O. Unit will be supplied with screw holes and AW finish.
- The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).
- * For Type L Lay-in, grille neck size is ceiling module size - 2" (51).
 ** For Panel mounting, maximum grille neck size is ceiling module size - 3" (76). Refer to Options and Accessories Page No. G175 for dimensional data.
 *** Not available with 1/2" (13) blade spacing models.
 **** Only available on Fixed 0° deflection models.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **5145H, 5145V, 5155H, 5155V, 51FH or 51FV Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have extruded aluminum fixed blades and extruded aluminum frames that have reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Steel Return Grilles and Registers – Model Series 6100

MODEL _____		61	45	H	-	O	-	24	x	12	-	S	-	OO	-	AW	-	A	-	—
RETURN _____																				
- Steel Construction		61																		
- Fixed 0° Defl., 3/4" (19) Spacing		F																		
- Fixed 45° Defl., 3/4" (19) Spacing		45																		
- Fixed 45° Defl., 1/2" (13) Spacing		55																		
BLADE DIRECTION _____																				
- Horizontal (Blades run long dimension)		H																		
- Vertical (Blades run short dimension)		V																		
DAMPER (OBD) _____																				
- Steel		O																		
- No Damper		—																		
WIDTH x HEIGHT _____																				
inches (mm) x inches (mm)																				
For Type S, PL, SP, MP, FP and TP, W x H = Duct Size																				
For Type L, F, and A, W x H = Ceiling Module Size																				
FRAME/BORDER TYPE _____																				
- Surface Mount (default)		S																		
Ceiling Grid:																				
- Lay-in T-Bar *		L																		
- Angle Frame		A																		
- Finline®		F																		
Panel Mount: **		Steel																		
- Lay-in T-Bar		PLS																		
- Spline		SPS																		
- Metal Pan		MPS																		
- Finline® Type		FPS																		
- Tegular		TPS																		
ACCESSORIES																				
- None (default)		—																		
- Plaster Sub-frame		PF																		
- Earthquake Tabs		EQT																		
FASTENING																				
(only for frame / border type S)																				
- Screw Holes (default)		A																		
- Concealed Mounting Straps***		C																		
- Concealed Screw Holes in Neck****D		D																		
- None		N																		
FINISH																				
- Appliance White (default)		AW																		
- Aluminum		AL																		
- Special Custom Color		SP																		
CEILING MODULE SIZE																				
(Use only for panel mounting, frame / border types PL, SP, MP, FP, TP)																				
- None (default)		OO																		
Imperial:																				
12 x 12, 24 x 12, 36 x 12,																				
48 x 12, 20 x 20, 24 x 24,																				
36 x 24, 48 x 24																				
Metric:																				
300 x 300, 600 x 300, 900 x 300,																				
1200 x 300, 500 x 500, 600 x 600,																				
900 x 600, 1200 x 600																				

G

GRILLES AND REGISTERS

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and steel damper, is Model 6145H-O. Unit will be supplied with screw holes and AW finish.
- The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).
- * For Type L Lay-in, grille neck size is ceiling module size - 2" (51).
 ** For Panel mounting, maximum grille neck size is ceiling module size - 3" (76).
 Refer to Options and Accessories Page No. G175 for dimensional data.
 *** Not available with 1/2" (13) blade spacing models.
 **** Only available on Fixed 0° deflection models.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6145H, 6145V, 6155H, 6155V, 61FH** or **61FV Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have roll-formed corrosion-resistant steel fixed blades and the frame is to be constructed from roll-formed corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Stainless Steel Return Grilles and Registers – Model Series 6700

GRILLES AND REGISTERS

G

		67 45 H - O - 24 x 12 - S - #3 - A - —			
MODEL	_____			ACCESSORIES	
- 304 Stainless Steel Construction	67			- None (default)	—
				- S/S Plaster Sub-frame	PFS
BLADE DEFLECTION	_____			OPTION	
- Fixed 0° Defl., 3/4" (19) Spacing	F			- 316 Stainless Steel	316
- Fixed 45° Defl., 3/4" (19) Spacing	45				
- Fixed 45° Defl., 1/2" (13) Spacing	55			FASTENING	
				- Screw Holes (default)	A
				- None	N
BLADE DIRECTION	_____			FINISH	
- Horizontal (Blades run long dimension)	H			- #3 Satin Polish (default)	#3
- Vertical (Blades run short dimension)	V			- Appliance White	AW
				- Special	SP
DAMPER (OBD)	_____			FRAME/BORDER TYPE	
- Stainless Steel	O			- Surface Mount (default)	S
- No Damper	—				
WIDTH x HEIGHT	_____				
	inches (mm) x inches (mm)				

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a stainless steel 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and stainless steel damper, is Model 6745H-O. Unit will be supplied with screw holes and #3 satin polished finish.
- The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6745H, 6745V, 6755H, 6755V, 67FH or 67FV Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a single set of streamlined shaped roll-formed fixed blades. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #3 satin polished finish.

(Optional) A stainless steel opposed blade damper, adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Fixed Blade Return Grilles and Registers • 5100, 6100 and 6700 Series

Models: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V

51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 —	100 —	120 19	140 24	160 28	180 32	200 36
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 —	140 15	168 20	196 25	224 29	252 33	280 37
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 —	175 16	210 21	245 26	280 30	315 34	350 38
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 —	190 17	228 22	266 27	304 31	342 35	380 39
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 —	210 18	252 23	294 27	336 32	378 36	420 40
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 —	232 —	290 19	348 24	406 28	464 33	522 37	580 41
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 —	244 —	305 19	366 24	427 29	488 34	549 37	610 41
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 —	260 15	325 20	390 25	455 30	520 34	585 38	650 41
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 —	296 15	370 20	444 25	518 30	592 35	666 39	740 42
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 16	450 21	540 26	630 31	720 36	810 39	900 42
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 —	496 16	620 21	744 26	868 31	992 36	1116 40	1240 43
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 —	548 17	685 22	822 27	959 32	1096 37	1233 40	1370 43
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 —	608 17	760 22	912 27	1064 32	1216 38	1368 41	1520 44
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 —	656 18	820 23	984 28	1148 33	1312 38	1476 41	1640 44
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 —	740 18	925 23	1110 28	1295 33	1480 38	1665 41	1850 45
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 —	630 —	840 18	1050 23	1260 29	1470 34	1680 39	1890 42	2100 45
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 —	928 19	1160 24	1392 29	1624 34	1856 39	2088 42	2320 46
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 —	783 —	1044 19	1305 24	1566 30	1827 35	2088 40	2349 43	2610 46
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 —	951 —	1268 20	1585 25	1902 31	2219 35	2536 40	2853 43	3170 47
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 —	1062 —	1416 20	1770 25	2124 31	2478 36	2832 41	3186 44	3540 48
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 —	1137 —	1516 20	1895 25	2274 31	2653 36	3032 41	3411 44	3790 48
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 —	1281 —	1708 21	2135 26	2562 32	2989 37	3416 42	3843 45	4270 49
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 —	1341 —	1788 21	2235 26	2682 32	3129 37	3576 42	4023 45	4470 49
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 —	1431 15	1908 22	2385 27	2862 33	3339 38	3816 42	4293 46	4770 50
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 —	1560 15	2080 22	2600 27	3120 33	3640 38	4160 43	4680 46	5200 50
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 —	1722 15	2296 22	2870 28	3444 34	4018 38	4592 43	5166 47	5740 51
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 —	1797 15	2396 22	2995 28	3594 34	4193 39	4792 43	5391 47	5990 51

Performance Data

Fixed Blade Return Grilles and Registers • 5100, 6100 and 6700 Series

Models: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V

51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .014	300 .006 .031	400 .010 .055	500 .016 .086	600 .022 .124	700 .031 .168	800 .040 .220	900 .050 .278	1000 .062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 —	1368 —	2052 16	2736 23	3420 29	4104 35	4788 39	5472 44	6156 48	6840 52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 —	1538 —	2307 17	3076 23	3845 29	4614 35	5383 40	6152 44	6921 48	7690 52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 —	1738 —	2607 17	3476 24	4345 29	5214 36	6083 41	6952 45	7821 49	8690 53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 —	1940 —	2910 18	3880 24	4850 30	5820 36	6790 41	7760 45	8730 49	9700 53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 —	2154 —	3231 18	4308 24	5385 30	6462 36	7539 42	8616 45	9693 50	10770 54
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 —	2378 —	3567 19	4756 25	5945 31	7134 37	8323 42	9512 46	10701 50	11890 54
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 —	2614 —	3921 19	5228 25	6535 31	7842 37	9149 42	10456 46	11763 50	13070 54
46 x 46		14.30	13.10	CFM NC	1430 —	2860 —	4290 20	5720 26	7150 32	8580 38	10010 43	11440 47	12870 51	14300 55
48 x 48		15.59	14.26	CFM NC	1559 —	3118 —	4677 20	6236 26	7795 32	9354 38	10913 43	12472 47	14031 51	15590 55

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

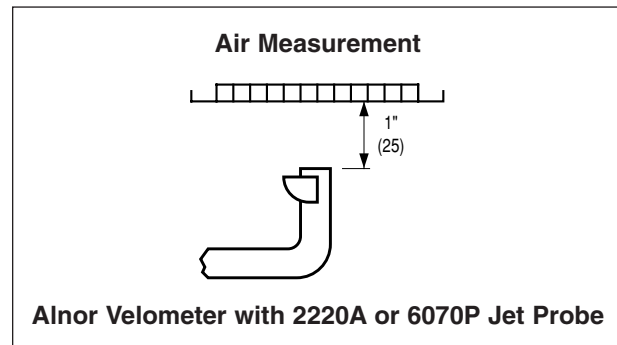
Performance Notes:

1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value - 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 1991.



Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

Performance Data

Fixed Blade Return Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV

51FBS, 61FBS

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .002	200 .002 .009	300 .006 .020	400 .010 .035	500 .016 .055	600 .022 .079	700 .031 .107	800 .040 .140	900 .050 .177	1000 .062 .219
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 —	100 —	120 16	140 18	160 21	180 25	200 30
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 —	140 —	168 17	196 19	224 22	252 26	280 31
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 —	175 —	210 18	245 20	280 23	315 27	350 32
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 —	190 —	228 19	266 21	304 24	342 28	380 32
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 —	210 15	252 19	294 22	336 25	378 29	420 33
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 —	232 —	290 15	348 19	406 22	464 26	522 30	580 34
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 —	244 —	305 15	366 19	427 22	488 27	549 30	610 35
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 —	260 —	325 16	390 20	455 23	520 27	585 31	650 35
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 —	296 —	370 16	444 21	518 24	592 28	666 32	740 35
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 —	450 17	540 21	630 24	720 29	810 32	900 35
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 —	496 —	620 17	744 22	868 25	992 29	1116 33	1240 36
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 —	548 —	685 18	822 23	959 26	1096 31	1233 34	1370 37
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 —	608 —	760 18	912 23	1064 27	1216 32	1368 35	1520 38
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 —	656 —	820 19	984 23	1148 27	1312 32	1476 35	1640 38
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 —	740 —	925 19	1110 24	1295 27	1480 32	1665 35	1850 39
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 —	630 —	840 —	1050 19	1260 24	1470 28	1680 33	1890 36	2100 39
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 —	928 —	1160 19	1392 24	1624 28	1856 33	2088 36	2320 40
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 —	783 —	1044 —	1305 19	1566 24	1827 28	2088 33	2349 36	2610 40
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 —	951 —	1268 15	1585 20	1902 25	2219 29	2536 33	2853 36	3170 40
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 —	1062 —	1416 15	1770 20	2124 25	2478 29	2832 34	3186 37	3540 41
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 —	1137 —	1516 15	1895 20	2274 25	2653 30	3032 34	3411 37	3790 41
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 —	1281 —	1708 17	2135 22	2562 26	2989 30	3416 35	3843 38	4270 42
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 —	1341 —	1788 17	2235 22	2682 26	3129 30	3576 35	4023 38	4470 42
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 —	1431 —	1908 18	2385 23	2862 27	3339 31	3816 35	4293 39	4770 43
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 —	1560 —	2080 18	2600 23	3120 27	3640 31	4160 36	4680 39	5200 43
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 —	1722 —	2296 18	2870 23	3444 27	4018 31	4592 36	5166 40	5740 44
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 —	1797 —	2396 18	2995 23	3594 28	4193 32	4792 36	5391 40	5990 44

Performance Data

Fixed Blade Return Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV

51FBS, 61FBS

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .002	200 .002 .009	300 .006 .020	400 .010 .035	500 .016 .055	600 .022 .079	700 .031 .107	800 .040 .140	900 .050 .177	1000 .062 .219
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				NC	—	—	—	18	24	28	32	37	41	45
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				NC	—	—	—	18	24	29	33	37	41	45
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				NC	—	—	—	19	24	29	34	38	42	46
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				NC	—	—	—	19	25	30	34	38	42	46
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				NC	—	—	—	20	26	30	35	38	43	47
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				NC	—	—	—	20	26	31	35	39	43	47
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				NC	—	—	15	20	26	31	35	39	43	47
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				NC	—	—	15	21	27	32	36	40	44	48
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				NC	—	—	16	21	27	32	36	40	44	48

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

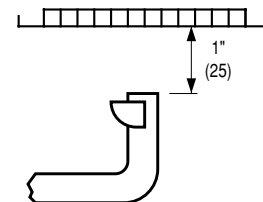
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value - 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 1991.

Air Measurement



Anor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

Performance Data

Fixed Blade Return Grilles and Registers • 5100, 6100 and 6700 Series

Models: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V

51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	200 .002 .018	300 .006 .041	400 .010 .073	500 .016 .114	600 .022 .164	700 .031 .223	800 .040 .292	900 .050 .369	1000 .062 .456
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 —	100 16	120 21	140 26	160 30	180 34	200 38
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 —	140 17	168 22	196 27	224 31	252 35	280 39
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 —	175 18	210 23	245 28	280 32	315 36	350 40
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 —	190 19	228 24	266 29	304 33	342 37	380 41
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 15	210 20	252 25	294 29	336 34	378 38	420 42
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 —	232 16	290 21	348 26	406 30	464 35	522 39	580 43
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 —	244 16	305 21	366 26	427 31	488 36	549 39	610 43
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 —	260 17	325 22	390 27	455 32	520 36	585 40	650 43
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 —	296 17	370 22	444 27	518 32	592 37	666 41	740 44
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 18	450 23	540 28	630 33	720 38	810 41	900 44
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 —	496 18	620 23	744 28	868 33	992 38	1116 42	1240 45
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 15	548 20	685 25	822 30	959 35	1096 40	1233 43	1370 46
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 15	608 20	760 25	912 30	1064 35	1216 41	1368 44	1520 47
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 16	656 21	820 26	984 31	1148 36	1312 41	1476 44	1640 47
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 16	740 21	925 26	1110 31	1295 36	1480 41	1665 44	1850 48
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 —	630 16	840 21	1050 26	1260 32	1470 37	1680 42	1890 45	2100 48
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 16	928 22	1160 27	1392 32	1624 37	1856 42	2088 45	2320 49
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 —	783 16	1044 22	1305 27	1566 33	1827 38	2088 43	2349 46	2610 49
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 —	951 17	1268 23	1585 28	1902 34	2219 38	2536 43	2853 46	3170 50
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 —	1062 17	1416 23	1770 28	2124 34	2478 39	2832 44	3186 47	3540 51
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 —	1137 17	1516 23	1895 28	2274 34	2653 39	3032 44	3411 47	3790 51
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 —	1281 18	1708 25	2135 29	2562 36	2989 41	3416 46	3843 49	4270 53
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 —	1341 18	1788 25	2235 30	2682 36	3129 41	3576 46	4023 49	4470 53
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 —	1431 19	1908 26	2385 31	2862 37	3339 42	3816 46	4293 50	4770 54
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 —	1560 19	2080 26	2600 31	3120 37	3640 42	4160 47	4680 50	5200 54
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 —	1722 19	2296 26	2870 32	3444 38	4018 42	4592 47	5166 51	5740 55
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 —	1797 19	2396 26	2995 32	3594 38	4193 43	4792 47	5391 51	5990 55

Performance Data

Fixed Blade Return Grilles and Registers • 5100, 6100 and 6700 Series

Models: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V

51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	200 .002 .018	300 .006 .041	400 .010 .073	500 .016 .114	600 .022 .164	700 .031 .223	800 .040 .292	900 .050 .369	1000 .062 .456
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 —	1368 15	2052 20	2736 27	3420 33	4104 39	4788 43	5472 48	6156 52	6840 56
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 —	1538 16	2307 21	3076 27	3845 33	4614 39	5383 44	6152 48	6921 52	7690 56
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 —	1738 17	2607 21	3476 28	4345 33	5214 40	6083 45	6952 49	7821 53	8690 57
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 —	1940 18	2910 22	3880 28	4850 34	5820 40	6790 45	7760 49	8730 53	9700 57
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 —	2154 18	3231 23	4308 29	5385 35	6462 41	7539 47	8616 50	9693 55	10770 59
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 —	2378 19	3567 24	4756 30	5945 36	7134 42	8323 47	9512 51	10701 55	11890 59
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 —	2614 19	3921 24	5228 30	6535 36	7842 42	9149 47	10456 51	11763 55	13070 59
46 x 46		14.30	13.10	CFM NC	1430 15	2860 20	4290 25	5720 31	7150 37	8580 43	10010 48	11440 52	12870 56	14300 60
48 x 48		15.59	14.26	CFM NC	1559 15	3118 20	4677 25	6236 31	7795 37	9354 43	10913 48	12472 52	14031 56	15590 60

- CFM** - cubic feet per minute
VP - velocity pressure - inches w.g.
Neg. SP - negative static pressure - inches w.g.
NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

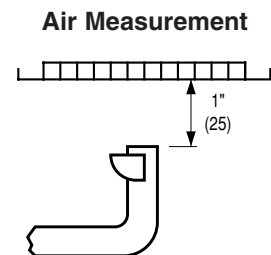
Performance Notes:

1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value – 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

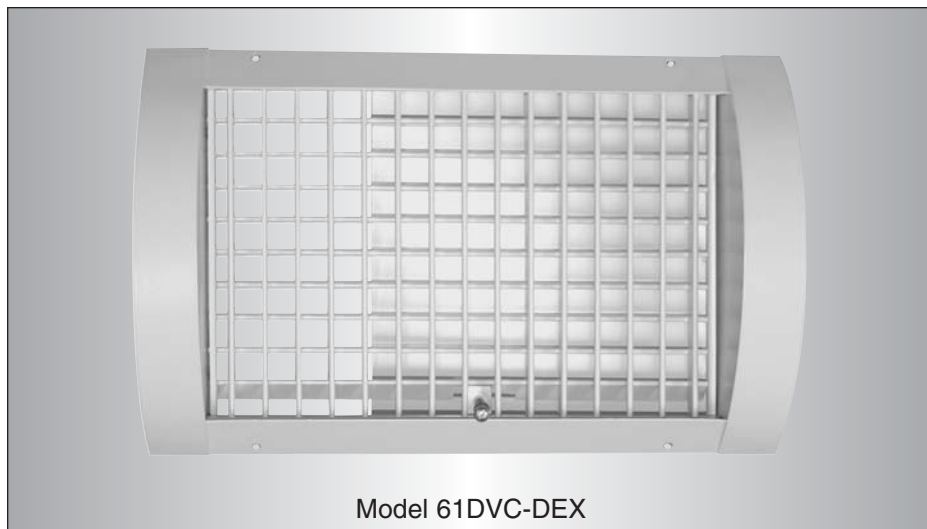
- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

CURVED SPIRAL DUCT GRILLES

- TRUE FULL RADIUS DESIGN
- DOUBLE DEFLECTION
- SUPPLY

Models:

61DVC and 61DHC



Model 61DVC-DEX

Models 61DVC and 61DHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern, therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

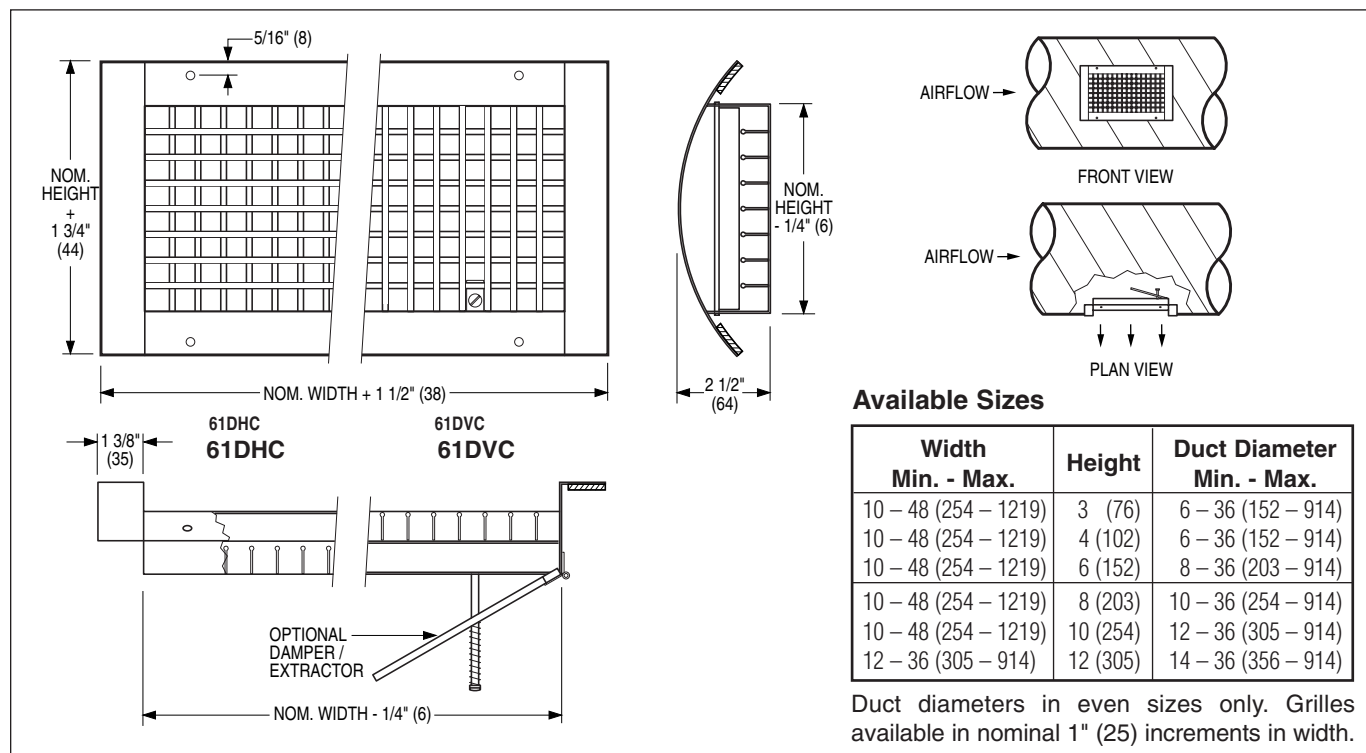
The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

FEATURES:

- Unique corrosion-resistant steel frame, with a 1 3/8" (35) face border, rolled to match required duct radius.
- Custom fabricated to fit only a single specified duct diameter.
- A dual set of individually adjustable, friction pivoted, extruded aluminum

- "teardrop" blades on 3/4" (19) centers.
- Furnished with Type A screw holes and mounting screws as standard.
- Standard finish is AW Appliance White baked enamel. Other finishes are available.

- A thick foam gasket is provided to ensure a tight seal to duct.
- An extensive range of sizes are available.
- Optional DEX Damper/Extractor (Air Scoop) is available.

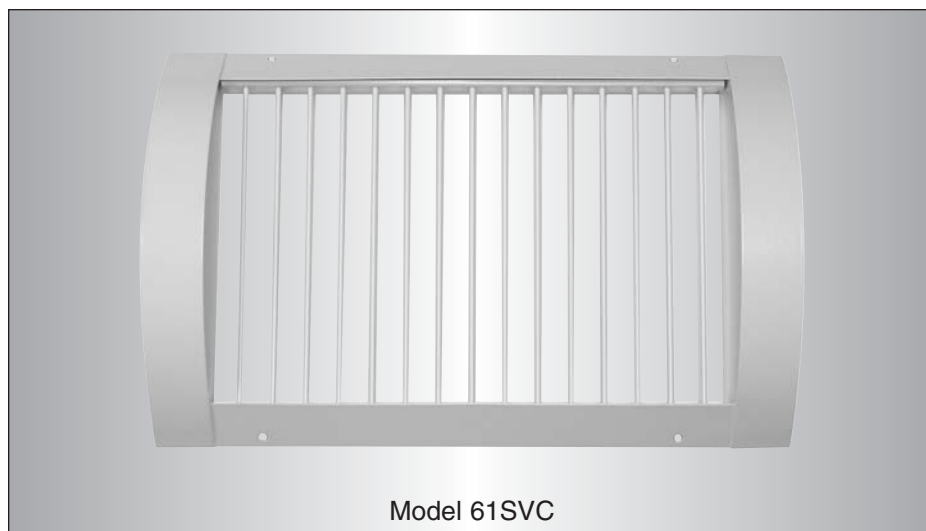


CURVED SPIRAL DUCT GRILLES

- SINGLE DEFLECTION
- SUPPLY

Models:

61SVC and 61SHC



Model 61SVC

Models 61SVC and 61SHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring adjustment in a single horizontal or vertical plane. The vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

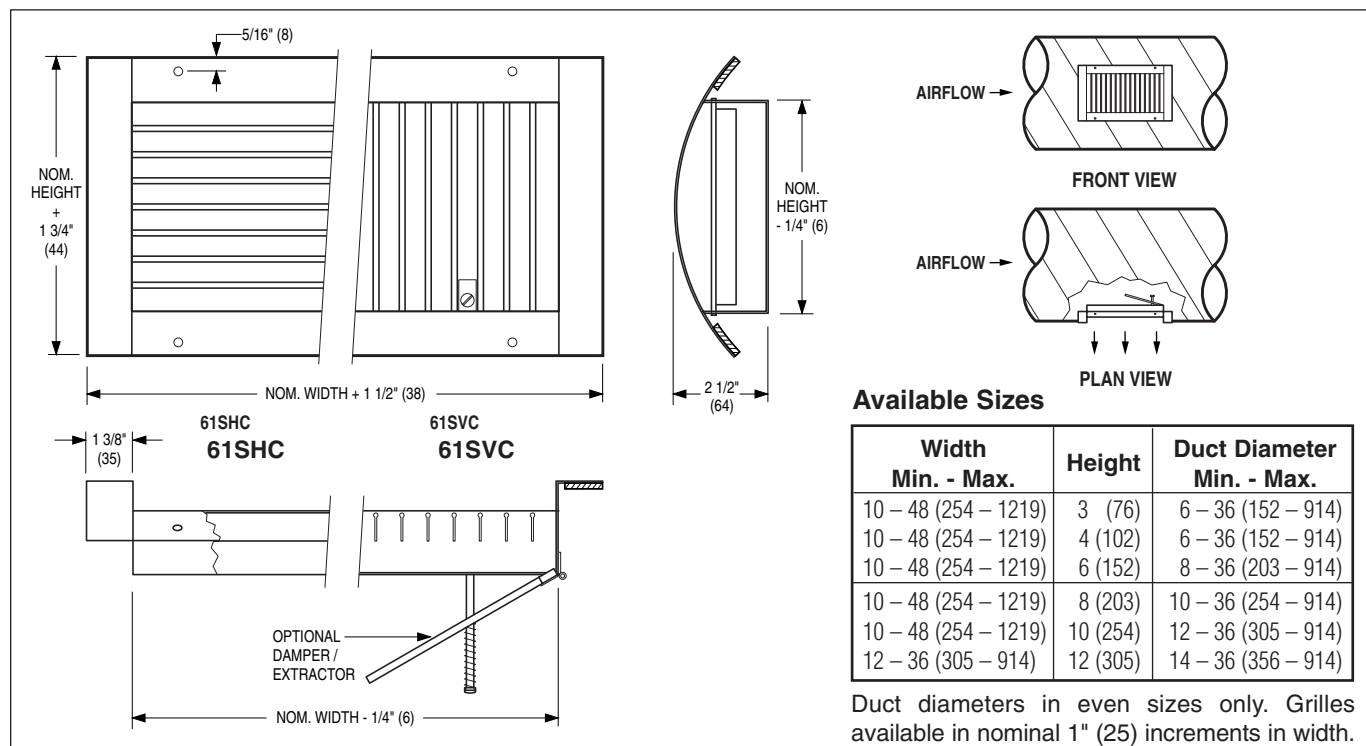
FEATURES:

- Unique one piece, corrosion-resistant steel frame, with a 1 3/8" (35) face border, rolled to match required duct radius.
- Custom fabricated to fit only a single duct diameter.
- A single set of individually adjustable, friction pivoted, extruded aluminum

"teardrop" blades on 3/4" (19) centers.

- Furnished with Type A screw holes and mounting screws as standard.
- Standard finish is AW Appliance White baked enamel. Other finishes are available.

- A thick foam gasket is provided to ensure a tight seal to duct.
- An extensive range of sizes are available.
- Optional DEX Damper/Extractor (Air Scoop) is available.



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Curved Spiral Duct Supply Grilles – Model Series 6100C

MODEL _____		61 DV C - 12 x 6 - 12 - S - AW - A - —			
- Steel Frame	61			DAMPER/EXTRACTOR	
				- None (default)	—
				- Damper/Extractor	DEX
SUPPLY _____				FASTENING	
Double Deflection with:				- Screw Holes (default)	A
- Vertical Front Blades	DV			- None	N
- Horizontal Front Blades	DH			FINISH	
Single Deflection with:				- Appliance White (default)	AW
- Vertical Front Blades	SV			- Aluminum	AL
- Horizontal Front Blades	SH			- Special Custom Color	SP
CURVED DESIGNATION _____				FRAME/BORDER TYPE	
				- Surface Mount (default)	S
WIDTH x HEIGHT _____				DUCT DIAMETER inches	
inches (mm) x inches (mm)				- 06 through 36	
				(in 2" (51) increments)	

Notes:

1. Nailor recommends the selection of vertical front blades on supply models for the majority of applications.
2. Refer to "Available Sizes" table on page G47 or G48 for grille height/duct diameter limitations.
3. Not available in fractional or metric sizes.
4. For a standard grille with no special requirements, the "default" will automatically be selected. For example, a double deflection grille with vertical front blades is Model 61DVC. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.

SUGGESTED SPECIFICATION:**61DVC, 61DHC Double Deflection**

Furnish and install **Nailor Model** (select one) **61DVC** or **61DHC Double Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of extruded aluminum "teardrop" blades spaced on 3/4" (19) centers. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

61SVC, 61SHC Single Deflection

Furnish and install **Nailor Model** (select one) **61SVC** or **61SHC Single Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum "teardrop" blades spaced on 3/4" (19) centers. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Curved Spiral Duct Supply Grilles • 6100C Series

Models: 61DVC, 61DHC, 61SVC, 61SHC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				0°	.013	.023	.036	.052	.071	.093	.145	.209	.285
				22 1/2°	.015	.026	.041	.060	.082	.107	.167	.241	.328
				45°	.023	.040	.063	.091	.125	.164	.254	.367	.499
10 x 3		0.15		CFM NC	45	60	75	90	105	120	150	180	210
			.14	0°	3-4-8	4-5-9	5-6-11	6-8-13	7-10-14	8-11-15	9-12-16	11-13-18	11-14-19
			.12 .10	T 22 1/2° 45°	2-3-6 2-2-4	3-4-7 2-3-5	4-5-9 3-3-6	5-6-10 3-4-7	6-8-11 4-5-7	6-9-12 4-6-8	7-10-13 5-6-8	9-10-14 6-7-9	9-11-15 6-7-10
12 x 3		0.19		CFM NC	57	76	95	114	133	152	190	228	266
			.14	0°	4-5-9	5-6-11	6-8-13	7-10-14	8-11-15	8-11-16	11-13-18	11-14-19	12-15-21
			.12 .10	T 22 1/2° 45°	3-4-7 2-3-5	4-5-9 3-4-6	4-7-10 3-4-6	6-8-11 4-5-7	6-8-12 4-6-8	7-9-13 4-6-8	8-10-14 6-6-9	9-11-15 6-7-10	10-12-17 6-8-11
10 x 4	14 x 3	0.22		CFM NC	66	88	110	132	154	176	220	164	308
			.14	0°	4-5-10	5-7-12	6-9-13	7-10-15	8-11-16	9-12-17	11-14-19	12-15-20	13-16-22
			.12 .10	T 22 1/2° 45°	3-4-8 2-3-5	4-6-10 3-4-6	5-7-10 3-5-7	6-8-12 4-5-8	6-9-13 4-6-8	7-10-14 5-6-9	8-11-15 6-7-10	9-12-16 6-8-10	10-13-18 7-8-11
12 x 4	16 x 3	0.27		CFM NC	81	108	135	162	189	216	270	324	378
			.18	0°	4-6-11	6-8-13	7-10-14	8-11-16	9-13-18	11-13-19	12-15-21	13-16-22	13-17-25
			.16 .14	T 22 1/2° 45°	3-4-8 2-3-6	4-7-10 3-4-6	6-8-11 4-5-7	6-9-13 4-6-8	7-10-14 5-6-9	8-11-15 6-7-10	9-12-17 6-8-11	10-13-18 6-8-11	11-13-20 7-8-13
18 x 3		0.29		CFM NC	87	116	145	174	203	232	290	348	406
			.18	0°	4-6-12	6-9-14	7-11-15	8-12-17	10-13-19	12-14-20	13-16-22	14-17-24	14-18-26
			.16 .14	T 22 1/2° 45°	3-5-10 2-3-6	5-7-11 3-5-7	6-9-12 4-6-8	6-10-14 4-6-9	8-10-15 5-7-10	10-11-16 6-7-10	10-13-18 7-8-11	11-14-19 7-9-12	11-14-21 7-9-13
20 x 3	10 x 6 14 x 4	0.32		CFM NC	96	128	160	192	224	256	320	384	448
			.24	0°	4-6-13	6-9-15	7-11-17	8-13-18	11-14-20	12-15-21	14-16-23	15-18-25	15-19-27
			.21 .18	T 22 1/2° 45°	4-5-10 2-4-6	5-7-12 4-5-8	6-9-13 4-6-8	7-11-15 4-7-9	8-11-15 6-7-10	10-12-17 6-8-11	11-13-18 7-8-12	12-14-20 8-9-13	13-15-22 8-10-14
16 x 4	22 x 3	0.36		CFM NC	108	144	180	216	252	288	360	432	504
			.26	0°	4-6-13	6-10-15	8-11-18	9-13-19	11-15-20	13-15-22	13-17-24	15-18-26	16-20-28
			.22 .20	T 22 1/2° 45°	4-5-11 2-4-7	5-8-13 4-5-8	6-9-14 4-6-9	7-11-15 5-7-10	9-12-16 6-8-11	10-13-18 6-8-11	11-13-19 7-8-12	12-15-21 8-9-13	13-15-22 8-10-14
12 x 6	18 x 4 24 x 3	0.42		CFM NC	126	168	210	252	294	336	420	504	588
			.29	0°	4-6-13	6-10-15	8-11-18	9-13-19	11-15-21	13-15-22	13-17-24	15-20-27	16-20-29
			.25 .22	T 22 1/2° 45°	4-5-11 2-4-7	5-8-13 4-5-8	6-9-14 4-6-9	7-11-15 5-7-10	9-12-17 6-8-11	10-13-18 6-8-11	11-13-19 7-8-12	12-15-21 8-10-13	13-16-23 8-11-15
20 x 4	28 x 3	0.45		CFM NC	135	180	225	270	315	360	450	540	630
			.34	0°	4-7-14	6-10-15	8-12-17	10-13-18	11-14-19	11-15-22	13-17-24	15-18-25	6-20-28
			.30 .26	T 22 1/2° 45°	3-6-11 2-4-7	5-8-12 3-5-8	6-10-14 4-6-9	8-10-14 5-7-9	9-11-15 6-7-10	9-12-18 6-8-11	10-14-19 7-9-12	12-14-20 8-9-13	13-16-22 8-10-14
14 x 6	10 x 8 22 x 4	0.50		CFM NC	150	200	250	300	350	400	500	600	700
			.34	0°	4-8-14	7-11-16	8-13-18	11-14-20	11-15-22	13-16-23	15-18-25	16-20-28	18-22-30
			.30 .26	T 22 1/2° 45°	4-6-11 2-4-7	6-8-13 4-6-8	7-10-14 4-6-9	8-11-15 6-7-10	9-13-18 6-8-11	11-13-18 7-8-12	12-14-20 8-9-13	13-15-22 8-10-14	14-18-24 9-11-15
12 x 8	16 x 6 24 x 4 32 x 3	0.58		CFM NC	174	232	290	348	406	464	580	696	812
			.39	0°	5-8-15	7-11-17	8-13-19	11-15-21	12-16-22	14-17-24	15-19-27	17-21-29	18-22-32
			.34 .30	T 22 1/2° 45°	4-6-12 3-4-8	6-8-13 4-6-8	7-11-15 4-7-10	8-12-17 6-8-11	9-13-18 6-8-11	10-13-19 7-8-12	11-13-20 8-10-13	13-15-22 8-11-15	15-18-25 9-11-16
10 x 10	26 x 4 34 x 3	0.61		CFM NC	183	244	305	366	427	488	610	732	854
			.41	0°	5-8-15	7-11-17	8-13-20	11-15-21	12-16-22	14-17-25	16-20-27	17-21-30	19-22-32
			.36 .31	T 22 1/2° 45°	4-6-12 3-4-8	6-9-13 4-6-8	7-11-15 5-7-10	9-12-17 6-8-11	10-13-18 6-8-11	11-13-20 7-8-13	13-15-22 8-10-14	13-17-24 8-11-15	15-18-26 10-11-16

For performance table notes, see page G52.

Performance Data

Curved Spiral Duct Supply Grilles • 6100C Series

Models: 61DVC, 61DHC, 61SVC, 61SHC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				0°	.013	.023	.036	.052	.071	.093	.145	.209	.285
				TP 22 1/2°	.015	.026	.041	.060	.082	.107	.167	.241	.328
				45°	.023	.040	.063	.091	.125	.164	.254	.367	.499
18 x 6	14 x 8 28 x 4 30 x 4 36 x 3	0.65		CFM NC	195	260	325	390	455	520	650	780	910
			.44	0°	5-8-15	8-11-18	9-14-20	11-15-22	13-17-24	15-18-25	17-20-28	18-22-32	20-24-34
			.38 .33	T 22 1/2° 45°	4-7-13 3-4-8	6-9-14 4-6-9	7-11-16 5-7-11	9-13-18 6-8-11	10-13-19 6-8-12	12-14-20 8-9-13	13-16-22 8-11-14	14-18-25 9-11-16	15-19-27 10-12-17
12 x 10	20 x 6 30 x 4	0.74		CFM NC	222	296	370	444	518	592	740	888	1036
			.50	0°	6-9-17	8-12-19	10-15-22	12-17-23	14-18-25	15-19-27	18-22-30	19-23-34	21-25-36
			.44 .38	T 22 1/2° 45°	4-7-13 3-5-8	6-10-15 4-6-10	8-12-18 5-8-11	10-13-18 6-8-12	11-15-20 7-9-13	13-15-22 8-10-14	14-18-24 9-11-15	15-18-27 10-12-17	17-20-29 11-13-18
22 x 6	16 x 8 34 x 4	0.80		CFM NC	240	320	400	480	560	640	800	960	1120
			.54	0°	6-9-18	8-13-20	11-15-22	13-18-25	14-19-27	16-20-29	18-22-32	20-25-35	22-27-37
			.47 .41	T 22 1/2° 45°	4-7-14 3-5-9	6-10-15 4-6-10	8-13-18 6-8-11	10-14-20 6-9-13	11-15-21 7-10-13	13-15-23 8-10-15	15-18-25 9-11-16	16-20-28 10-13-18	18-21-29 11-13-19
12 x 12	14 x 10 18 x 8 24 x 6 36 x 4	0.90		CFM NC	270	360	450	540	630	720	900	1080	1260
			.61	0°	6-10-18	8-13-20	11-16-23	13-18-25	15-19-27	17-20-29	19-23-33	20-25-36	22-27-39
			.53 .46	T 22 1/2° 45°	5-8-15 4-5-9	7-10-16 4-6-11	8-13-18 6-8-12	10-15-20 6-9-13	12-15-22 8-10-14	13-16-24 8-11-15	15-18-27 10-12-17	16-20-29 11-13-18	18-22-32 11-14-20
18 x 10	30 x 6	1.13		CFM NC	339	452	565	678	791	904	1130	1356	1582
			.77	0°	6-11-20	10-14-23	12-18-25	14-20-28	17-21-30	19-23-32	21-25-36	23-28-40	25-30-43
			.67 .58	T 22 1/2° 45°	5-8-16 4-6-11	8-11-18 5-7-12	10-14-20 6-9-13	11-16-22 7-11-14	13-17-24 8-11-15	15-18-26 10-12-16	17-20-29 11-13-18	18-22-32 12-14-20	20-24-34 13-15-22
24 x 8	16 x 12 20 x 10 24 x 8 34 x 6	1.20		CFM NC	360	480	600	720	840	960	1200	1440	1680
			.84	0°	8-13-23	11-18-27	14-20-29	17-23-33	19-25-36	22-27-38	25-29-42	27-33-46	29-36-50
			.73 .64	T 22 1/2° 45°	6-10-18 4-6-12	9-14-22 6-9-14	11-16-24 7-11-15	13-18-27 8-12-17	15-20-29 10-13-18	18-22-30 11-14-19	20-24-34 13-15-21	22-27-37 14-17-23	23-29-40 15-18-25
18 x 12	22 x 10 28 x 8 36 x 6	1.37		CFM NC	411	548	685	822	959	1096	1370	1644	1918
			.93	0°	8-13-23	11-18-27	14-21-30	17-23-33	20-25-36	22-27-38	25-30-43	27-33-47	29-36-50
			.81 .71	T 22 1/2° 45°	6-10-18 4-6-12	9-14-22 6-9-14	11-17-24 7-11-15	13-18-27 8-12-17	15-20-29 10-13-18	18-22-30 11-14-19	20-24-34 13-15-22	22-27-38 14-17-24	23-29-41 15-18-25
24 x 10	20 x 12 30 x 8	1.52		CFM NC	456	608	760	912	1064	1216	1520	1824	2128
			1.03	0°	8-13-25	11-18-29	15-22-32	18-25-35	20-27-37	24-29-40	26-32-45	29-35-49	30-37-53
			.90 .78	T 22 1/2° 45°	7-11-20 4-7-13	9-14-23 6-9-15	12-18-25 8-11-16	14-20-28 9-13-18	16-21-29 11-13-19	19-23-32 12-15-20	21-25-36 13-16-22	23-28-39 15-18-25	24-29-43 15-19-27
32 x 8	22 x 12 26 x 10	1.61		CFM NC	483	644	805	966	1127	1288	1610	1932	2254
			1.12	0°	8-14-26	12-18-29	15-22-33	18-26-36	22-28-39	25-29-41	27-33-47	29-36-51	32-39-55
			.97 .84	T 22 1/2° 45°	7-11-21 4-7-13	10-15-24 6-9-15	13-18-27 8-11-17	15-21-29 9-13-18	18-22-32 11-14-20	20-24-33 13-15-21	22-27-38 14-17-24	24-29-41 15-18-26	26-32-44 16-20-28
24 x 12	30 x 10 36 x 8	1.85		CFM NC	555	740	925	1110	1295	1480	1850	2220	2590
			1.26	0°	8-14-27	13-19-31	15-23-34	19-27-38	22-28-41	25-31-43	28-34-48	31-38-53	34-41-57
			1.09 .95	T 22 1/2° 45°	7-11-21 4-7-13	10-15-25 6-10-15	13-18-27 8-12-17	15-21-30 10-13-19	18-22-32 11-14-20	20-25-35 13-15-22	22-27-39 14-17-25	25-30-43 15-19-27	27-32-46 17-20-29
32 x 10	28 x 12	2.04		CFM NC	612	816	1020	1224	1428	1632	2040	2448	2856
			1.43	0°	9-15-28	13-20-33	17-25-36	20-28-40	23-30-43	27-33-46	29-36-52	33-40-57	35-43-61
			1.24 1.08	T 22 1/2° 45°	7-12-22 5-8-14	11-16-27 7-11-17	13-20-29 8-13-18	16-22-32 11-14-20	18-24-35 12-15-22	21-27-37 13-17-23	24-29-41 15-18-26	27-32-46 17-20-29	28-35-49 18-22-31
30 x 12	36 x 10	2.32		CFM NC	696	928	1160	1392	1624	1856	2320	2784	3248
			1.58	0°	10-16-30	15-22-35	18-27-39	22-30-43	25-33-47	29-35-50	32-37-55	35-43-60	38-47-66
			1.37 1.19	T 22 1/2° 45°	8-13-24 5-8-15	13-18-28 8-11-18	15-22-32 9-14-20	18-24-34 11-15-22	20-27-38 13-17-24	23-28-40 15-18-25	22-32-44 16-20-28	28-34-48 18-22-30	30-38-53 19-24-33

For performance table notes, see page G52.

G

GRILLES AND REGISTERS

Performance Data

Curved Spiral Duct Supply Grilles • 6100C Series

Models: 61DVC, 61DHC, 61SVC, 61SHC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400
				0°	.006	.010	.016	.022	.031	.040	.062	.090	.122
				22 1/2°	.013	.023	.036	.052	.071	.093	.145	.209	.285
				45°	.015	.026	.041	.060	.082	.107	.167	.241	.328
				CFM	.023	.040	.063	.091	.125	.164	.254	.367	.499
				NC	744	992	1240	1488	1736	1984	2480	2976	3472
					—	13	20	25	30	34	40	46	51
32 x 12	38 x 10 48 x 8	2.48	1.70	0°	10-17-32	15-22-36	19-28-41	22-32-45	26-34-48	30-36-52	34-41-57	36-45-63	39-48-68
			1.48	22 1/2°	8-13-25	13-18-29	15-22-32	18-25-36	21-27-38	24-29-41	27-32-46	29-36-50	32-38-55
			1.29	45°	5-8-16	8-11-18	10-14-20	11-16-22	13-18-24	15-18-26	17-20-29	18-22-32	20-24-34
				CFM	768	1024	1280	1536	1792	2048	2560	3072	3584
				NC	—	13	20	25	30	34	40	46	51
40 x 10		2.56	1.77	0°	11-17-32	15-22-37	19-29-41	22-32-46	27-35-49	31-37-53	34-41-59	37-46-64	41-49-69
			1.54	22 1/2°	8-13-26	13-18-29	15-23-33	18-26-36	21-28-39	25-29-42	27-33-47	29-36-52	32-39-55
			1.34	45°	6-8-16	8-11-19	10-15-21	11-16-23	13-18-25	15-19-27	18-21-29	19-23-32	20-25-35
				CFM	837	1116	1395	1674	1953	2232	2790	3348	3906
				NC	—	13	20	25	30	34	40	46	51
36 x 12	44 x 10	2.79	1.90	0°	11-18-34	16-24-39	20-29-43	24-34-48	28-36-51	32-39-54	35-43-60	39-48-67	41-51-72
			1.65	22 1/2°	8-14-27	13-19-31	15-24-34	19-27-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57
			1.44	45°	6-9-17	8-12-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-30	20-30-34	21-26-36
				CFM	924	1232	1540	1848	2156	2464	3080	3696	4312
				NC	—	14	21	26	31	35	41	47	52
48 x 10		3.08	2.16	0°	12-19-35	17-25-41	20-32-46	25-35-50	29-38-54	33-41-57	37-46-64	41-50-71	43-54-76
			1.87	22 1/2°	10-15-28	13-20-32	16-25-36	20-28-40	24-30-43	27-32-46	29-36-52	32-40-57	35-43-61
			1.63	45°	6-10-18	8-13-20	11-16-23	13-18-25	15-19-27	17-20-29	19-23-32	20-25-36	22-27-39

CFM - cubic feet per minute
 TP - total pressure - inches w.g.
 VP - velocity pressure - inches w.g.
 T - throw in feet
 NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts @ 0° deflection.
 Core velocity is in feet per minute.

2. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.

3. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions, direct duct mounted grille, exposed duct with no ceiling effect.

Performance Notes:

1. Performance data is based on double deflection grille without damper / extractor.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

NC Corrections for Blade Deflection and Damper/Extractor set at 45 degrees (add).

Model Type	Damper/Extractor	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	+5	+7	+12
	Without	0	+2	+7
Single Deflection	With	+1	+3	+10
	Without	-4	-2	+5

TP Correction Factors for Grilles with Damper/Extractor set at 45 degrees.

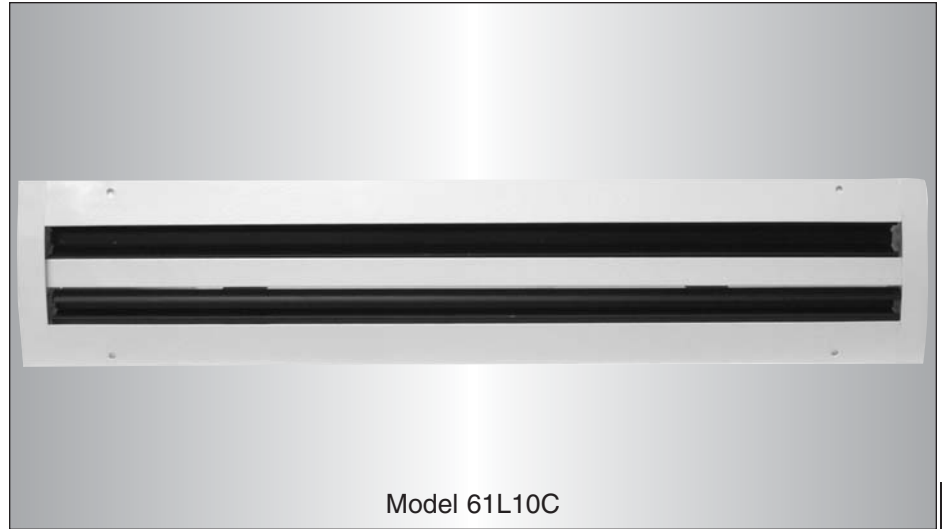
Blade Deflection	0°	22 1/2°	45°
Double defl. Factor	x 2.00	x 2.08	x 2.23
Single defl. Factor	x 1.83	x 1.91	x 2.13

CURVED SPIRAL DUCT GRILLES

- LINEAR SLOT FACE
- SUPPLY

Models:

61L50C, 61L75C and 61L10C



Model 61L10C

Models 61DVC and 61DHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring maximum flexibility. This linear grille provides stable diffusion under large amounts of air with both constant and changing load conditions. The volume and direction of the discharge air can be adjusted by moving the pattern controllers.

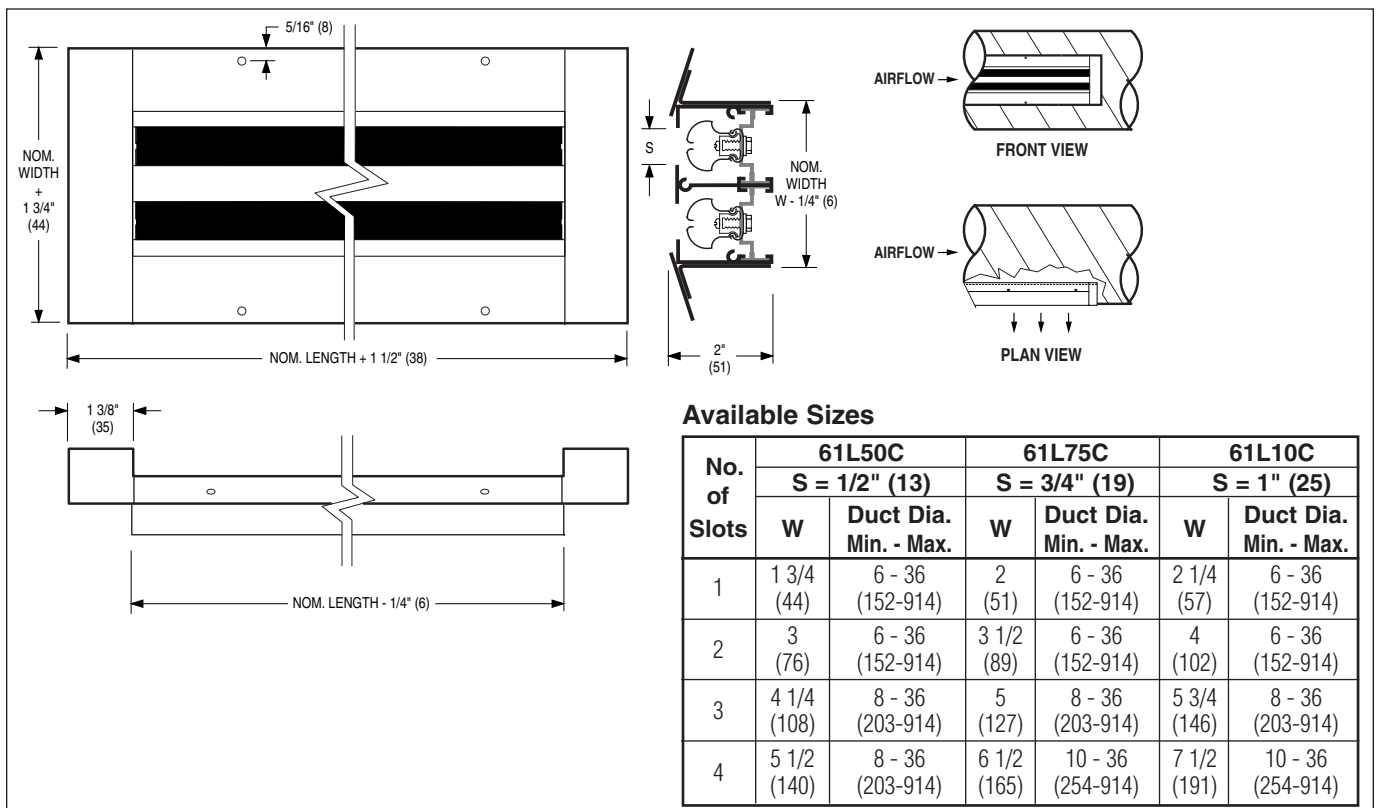
The innovative design incorporates a unique rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

FEATURES:

- Unique one piece, corrosion-resistant steel frame, with a 1 3/8" (35) face border, rolled to match required duct radius.
- Custom fabricated to fit only a single specified duct diameter.
- A dual set of individually adjustable, friction pivoted, extruded aluminum

- "teardrop" blades on 3/4" (19) centers.
- Furnished with Type A screw holes and mounting screws as standard.
- Standard finish is AW Appliance White baked enamel frame with black pattern controllers. Other finishes are available.

- A thick foam gasket is provided to ensure a tight seal to duct.



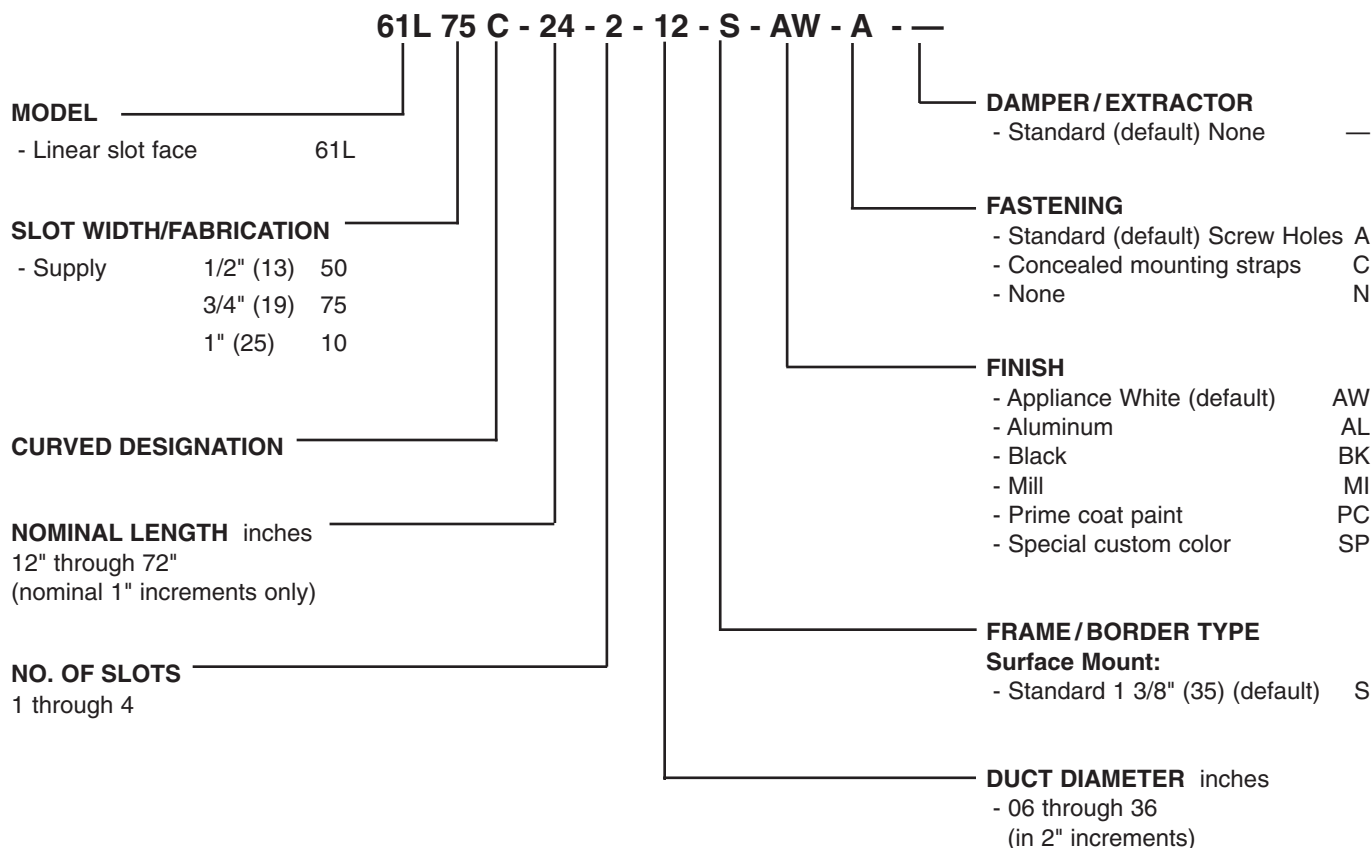
HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Curved Spiral Duct Linear Slot Grilles - Model Series 61LC.

GRILLES AND REGISTERS

G



Notes:

1. Refer to "Available Sizes" table on page G53.
2. Not available in fractional or metric sizes.
3. For a standard grille with no special requirements, the "default" will automatically be selected. For example, a linear with a 3/4" (19) slot is model 61L75C. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **61L10C (1", (25) slot)**, **61L75C (3/4", (19) slot)** or **61L50C (1/2", (13) slot)** of the sizes and capacities as shown on the plans and air distribution schedules. The linear shall be supplied in 1 - 4 slots wide as specified. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The pattern deflectors shall have an aerodynamic 'ice tong' shape that can be adjusted to regulate the volume and direction of the airflow. The pattern deflector finish shall be black. The frame is to be AW Appliance White baked enamel (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Curved Spiral Duct Supply Linear Slot

Model 61L50C • 1/2" (13) Slot Width

1 Slot	Airflow, CFM per Ft.	5	10	15	20	25	30	35	40
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	NC	—	14	17	21	26	31	35	38
	Throw	1-1-2	2-3-6	3-5-9	4-6-11	4-6-12	4-7-13	5-7-14	5-8-15
2 Slot	Airflow, CFM per Ft.	10	20	30	40	50	60	70	80
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	NC	—	15	20	24	28	34	38	41
	Throw	1-2-3	2-4-7	4-6-12	5-7-14	5-8-15	6-9-17	6-9-18	7-10-20
3 Slot	Airflow, CFM per Ft.	15	30	45	60	75	90	105	120
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	NC	—	16	21	26	31	36	40	43
	Throw	1-2-4	3-5-10	5-8-15	6-9-18	7-11-21	7-11-22	9-13-25	8-12-23
4 Slot	Airflow, CFM per Ft.	20	40	60	80	100	120	140	160
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	NC	—	17	22	27	32	37	41	44
	Throw	2-3-6	4-6-11	5-8-16	7-10-20	7-11-22	8-12-24	9-13-26	10-15-29

Model 61L75C • 3/4" (19) Slot Width

1 Slot	Airflow, CFM per Ft.	5	10	20	25	30	35	40	50
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	NC	—	—	16	21	26	30	33	38
	Throw	1-1-2	2-3-6	3-5-10	4-6-12	4-7-13	5-7-14	5-8-15	5-8-16
2 Slot	Airflow, CFM per Ft.	10	20	40	50	60	70	80	100
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	NC	—	—	19	24	29	33	36	41
	Throw	1-2-3	3-4-8	4-6-11	5-8-15	6-9-18	7-10-20	7-11-21	7-11-22
3 Slot	Airflow, CFM per Ft.	15	30	60	75	90	105	120	150
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	NC	—	—	21	26	31	35	38	43
	Throw	2-3-6	3-5-10	5-8-15	6-10-19	7-10-20	8-12-24	9-13-25	9-14-27
4 Slot	Airflow, CFM per Ft.	20	40	80	100	120	140	160	200
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	NC	—	—	22	27	32	36	39	44
	Throw	2-3-5	4-6-11	6-9-18	7-11-21	9-13-25	9-14-27	10-15-30	11-16-31

For performance notes, see next page.

Performance Data

Curved Spiral Duct Supply Linear Slot

Model 61L10C • 1" (25) Slot Width

1 Slot	Airflow, CFM per Ft.	10	15	25	30	40	50	55	65
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	NC	—	—	17	21	26	31	35	38
	Throw	1-1-2	3-4-8	4-6-12	4-7-13	5-8-15	5-8-16	6-9-17	6-9-18
2 Slot	Airflow, CFM per Ft.	20	30	50	60	80	100	110	130
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	NC	17	22	27	31	34	37	39	41
	Throw	1-2-4	3-5-10	5-8-16	6-10-19	7-10-20	7-11-21	8-12-23	9-13-25
3 Slot	Airflow, CFM per Ft.	30	45	75	90	120	150	165	195
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	NC	20	24	28	31	34	36	38	40
	Throw	2-3-6	4-6-11	6-9-18	7-11-22	9-13-25	9-14-27	10-15-30	11-16-31
4 Slot	Airflow, CFM per Ft.	40	60	100	120	160	200	220	260
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	NC	20	24	28	31	34	36	38	40
	Throw	2-4-7	4-7-13	7-11-21	9-13-26	10-15-29	10-15-30	12-17-34	12-18-36

NC Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Supply	-3	-1	0	+1	+2
Return	0	+2	+3	+3	+4

Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Multiplier	0.70	0.85	1.0	1.125	1.25

Performance Notes:

- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions. Exposed duct (no ceiling effect).
- Horizontal throws are based on the same direction of all slots.

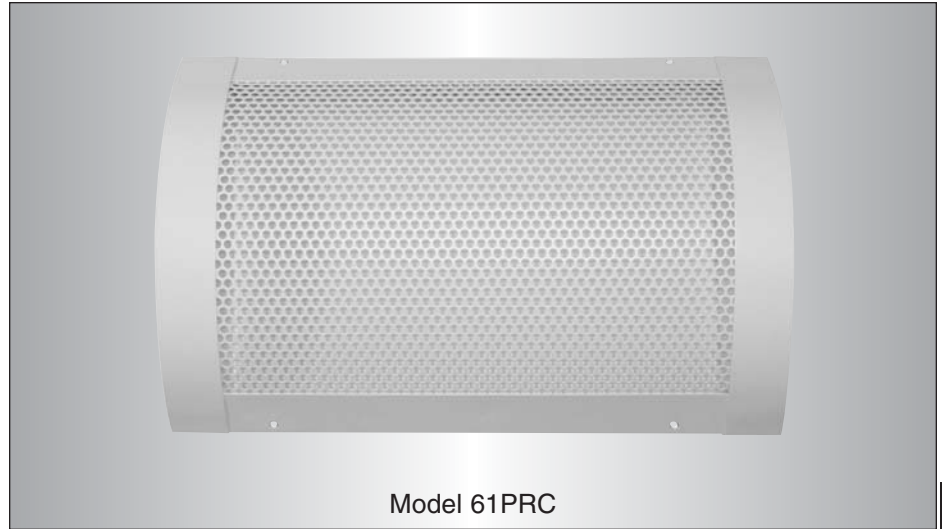
- Throw values are based on a 4 ft. section. For other lengths, use the correction factor table above.
- All pressures are in inches w.g.
- NC values (Noise Criteria) are based on a room absorption of 10 dB, re 10⁻¹² watts. Dash (—) in space denotes an NC level of less than 15.

- NC values are based on a 4 ft. section, horizontal throw. For other lengths, use the correction factor table above.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

CURVED SPIRAL DUCT GRILLES

- PERFORATED FACE
- SUPPLY OR RETURN

Model:
61PRC

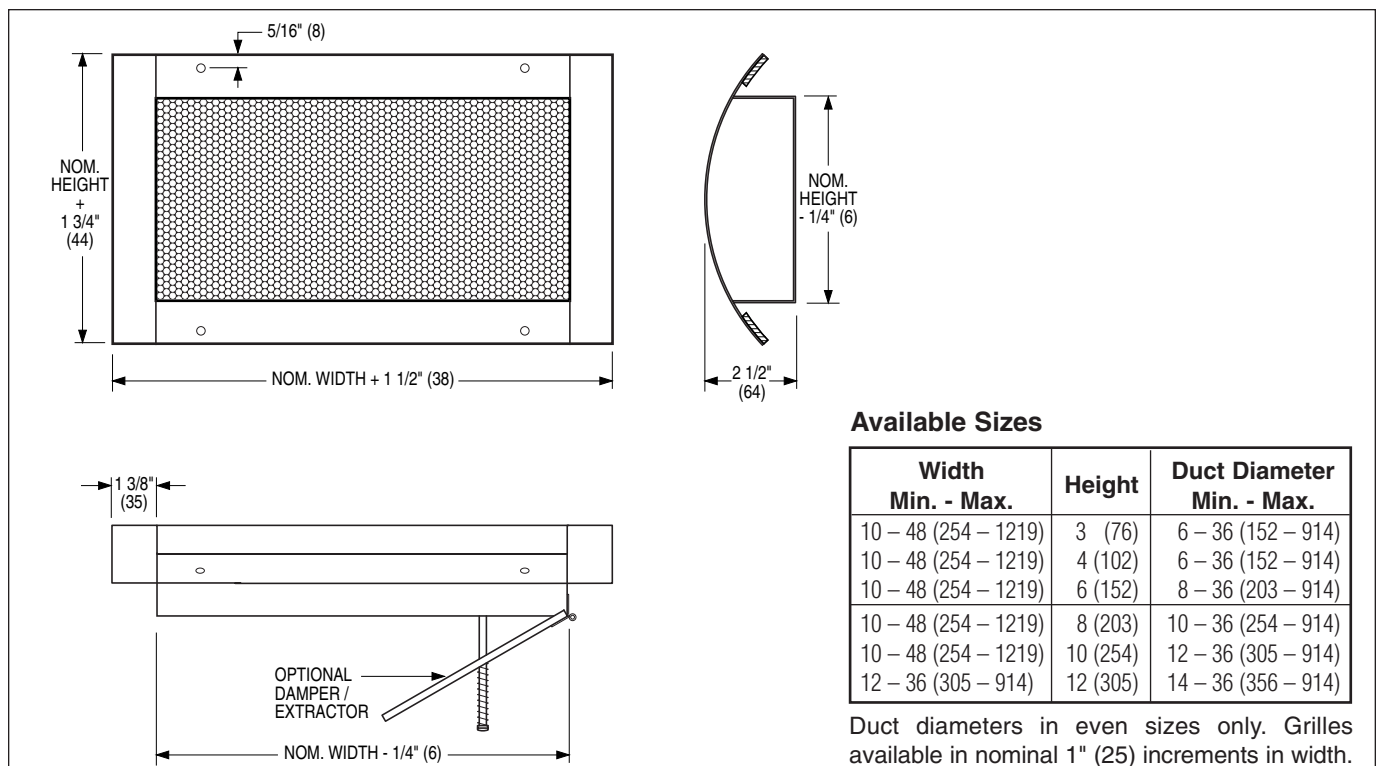


Model 61PRC

Model 61PRC Curved Spiral Duct Grilles are for use in exposed spiral duct supply or return applications. The innovative design incorporates a unique corrosion-resistant steel frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. The perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Many architects prefer the smooth, unobtrusive appearance this grille has to offer.

FEATURES:

- Unique corrosion-resistant steel frame, with a 1 3/8" (35) face border, rolled to match required duct radius.
- Custom fabricated to fit only a single specified duct diameter.
- The perforated face has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.
- Furnished with Type A screw holes and mounting screws as standard.
- Standard finish is AW Appliance White baked enamel. Other finishes are available.
- A thick foam gasket is provided to ensure a tight seal to duct.
- An extensive range of sizes are available.
- Optional DEX Damper/Extractor (Air Scoop) is available.



Available Sizes

Width Min. - Max.	Height	Duct Diameter Min. - Max.
10 - 48 (254 - 1219)	3 (76)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	4 (102)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	6 (152)	8 - 36 (203 - 914)
10 - 48 (254 - 1219)	8 (203)	10 - 36 (254 - 914)
10 - 48 (254 - 1219)	10 (254)	12 - 36 (305 - 914)
12 - 36 (305 - 914)	12 (305)	14 - 36 (356 - 914)

Duct diameters in even sizes only. Grilles available in nominal 1" (25) increments in width.

CURVED SPIRAL DUCT GRILLES

- FIXED 45° BLADES WITH 3/4" (19) OR 1/2" (13) SPACING
- RETURN

Models:

6145HC and 6155HC



Model 6145HC

Models 6145HC and 6155HC Curved Spiral Duct Grilles are for use in exposed spiral duct, return air applications. The streamlined blades and open spacing minimizes intake velocity, reduces inlet pressure and provides quiet operation.

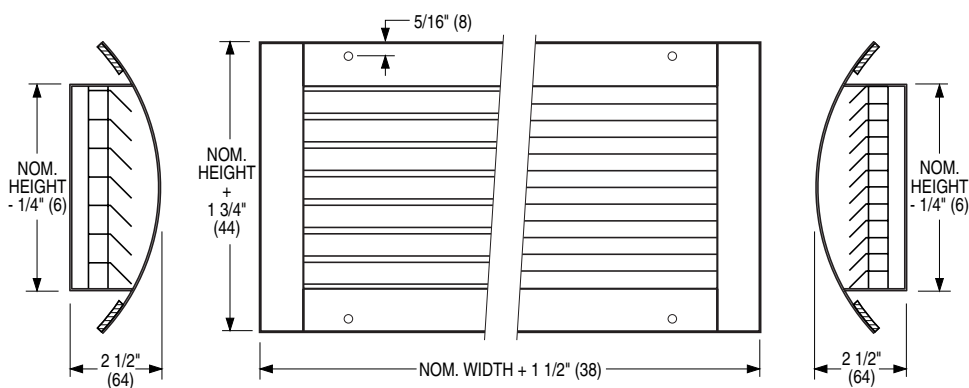
The innovative design incorporates a unique corrosion-resistant steel frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. A single set of roll-formed blades on 3/4" (19) or 1/2" (13) centers are fixed at 45° and incorporate a concealed rear reinforcing mullion [max. 16" (406) centers] and a single blade pack that provides a continuous louvered appearance.

FEATURES:

- Unique corrosion-resistant steel frame, with a 1 3/8" (35) face border, rolled to match required duct radius.
- Custom fabricated to fit a single specified duct diameter.

- A single set of roll formed blades on 3/4" (19) or 1/2" (13) centers fixed at 45°.
- Furnished with Type A screw holes and mounting screws as standard.
- Standard finish is AW Appliance White baked enamel. Other finishes are available.

- A thick foam gasket is provided to ensure a tight seal to duct.
- An extensive range of sizes are available.



6145HC

6155HC

Available Sizes

Width Min. - Max.	Height	Duct Diameter Min. - Max.
10 - 48 (254 - 1219)	3 (76)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	4 (102)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	6 (152)	8 - 36 (203 - 914)
10 - 48 (254 - 1219)	8 (203)	10 - 36 (254 - 914)
10 - 48 (254 - 1219)	10 (254)	12 - 36 (305 - 914)
12 - 36 (305 - 914)	12 (305)	14 - 36 (356 - 914)

Duct diameters in even sizes only. Grilles available in nominal 1" (25) increments in width.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Curved Spiral Duct Return Grilles – Model Series 6100C

MODEL _____

- Steel Frame 61

RETURN _____

- Perforated Face PR
- Fixed 45° Defl., 3/4" (19) Spacing 45H
- Fixed 45° Defl., 1/2" (13) Spacing 55H

CURVED DESIGNATION _____

WIDTH x HEIGHT _____

inches (mm) x inches (mm)

Available Sizes

Width Min. - Max.	Height	Duct Diameter Min. - Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

61 45H C - 12 x 6 - 12 - S - AW - A - —

DAMPER/EXTRACTOR

- None (default) —
- Damper/Extractor * DEX

FASTENING

- Screw Holes (default) A
- None N

FINISH

- Appliance White (default) AW
- Aluminum AL
- Special Custom Color SP

FRAME/BORDER TYPE

- Surface Mount (default) S

DUCT DIAMETER inches

- 06 through 36
(in 2" (51) increments)

Duct diameters in even sizes only. Grilles available in nominal 1" (25) increments in width.

Notes:

1. Refer to table above for grille height/duct diameter limitations.
2. Not available in fractional or metric sizes.
- 3.*Only available on Model 61PRC.
4. For a standard grille with no special requirements, the "default" will automatically be selected. For example, a perforated face grille is Model 61PRC. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.

SUGGESTED SPECIFICATION:

61PRC Perforated Face

Furnish and install **Nailor Model 61PRC Perforated Face Curved Spiral Duct Supply or Return Grilles** of the type and size as shown on the plans and air distribution schedules. The perforated face shall have 3/16" (5) dia. holes on staggered 1/4" (6) centers providing 51% free area. The frame shall be made from corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

6145HC, 6155HC 45° Deflection

Furnish and install **Nailor Model** (select one) **6145HC** or **6155HC Fixed Blade 45° Deflection Curved Spiral Duct Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of roll formed blades on 3/4" (19) or 1/2" (13) centers. The frame shall be made from corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White baked enamel (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.



GRILLES AND REGISTERS

Performance Data

Curved Spiral Duct Return Grilles • 6100C Series

Models: 6145HC, 6155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .013	300 .006 .028	400 .010 .050	500 .016 .078	600 .022 .113	700 .031 .153	800 .040 .200	900 .050 .253	1000 .062 .313
10 x 3		0.15	0.18	CFM NC	15 —	30 —	45 —	60 —	75 —	90 15	105 20	120 24	135 28	150 32
12 x 3		0.19	0.22	CFM NC	19 —	38 —	57 —	76 —	95 —	114 15	133 20	152 24	171 28	190 32
10 x 4	14 x 3	0.22	0.25	CFM NC	22 —	44 —	66 —	88 —	110 —	132 16	154 21	176 25	198 29	220 33
12 x 4	16 x 3	0.27	0.29	CFM NC	27 —	54 —	81 —	108 —	135 —	162 16	189 21	216 25	243 29	270 33
18 x 3		0.29	0.31	CFM NC	29 —	58 —	87 —	116 —	145 —	174 17	203 22	232 26	261 30	290 34
20 x 3	10 x 6 14 x 4	0.32	0.34	CFM NC	32 —	64 —	96 —	128 —	160 —	192 17	224 22	256 26	288 30	320 34
16 x 4	22 x 3	0.36	0.38	CFM NC	36 —	72 —	108 —	144 —	180 —	216 18	252 23	288 27	324 31	360 35
12 x 6	18 x 4 24 x 3	0.42	0.45	CFM NC	42 —	84 —	126 —	168 —	210 —	252 19	294 23	336 28	378 32	420 36
20 x 4	28 x 3	0.45	0.47	CFM NC	45 —	90 —	135 —	180 —	225 —	270 19	315 23	360 28	405 32	450 36
14 x 6	10 x 8 22 x 4	0.50	0.51	CFM NC	50 —	100 —	150 —	200 —	250 15	300 20	350 24	400 29	450 33	500 37
12 x 8	16 x 6 24 x 4 32 x 3	0.58	0.59	CFM NC	58 —	116 —	174 —	232 —	290 15	348 20	406 24	464 29	522 33	580 37
10 x 10	26 x 4 34 x 3	0.61	0.62	CFM NC	61 —	122 —	183 —	244 —	305 15	366 20	427 25	488 30	549 33	610 37
18 x 6	14 x 8 28 x 4 30 x 4 36 x 3	0.65	0.67	CFM NC	65 —	130 —	195 —	260 —	325 16	390 21	455 26	520 30	585 34	650 37
12 x 10	20 x 6 30 x 4	0.74	0.74	CFM NC	74 —	148 —	222 —	296 —	370 16	444 21	518 26	592 31	666 35	740 38
22 x 6	16 x 8 34 x 4	0.80	0.80	CFM NC	80 —	160 —	240 —	320 —	400 16	480 21	560 26	640 31	720 35	800 38
12 x 12	14 x 10 18 x 8 24 x 6 36 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 —	450 17	540 22	630 27	720 32	810 35	900 38
18 x 10	30 x 6	1.13	1.12	CFM NC	113 —	226 —	339 —	452 —	565 17	678 22	791 27	904 32	1017 36	1130 39
24 x 8	16 x 12 20 x 10 24 x 8 34 x 6	1.20	1.19	CFM NC	120 —	240 —	360 —	480 —	600 17	720 22	840 27	960 32	1080 36	1200 39

For performance table notes, see page G61.

Performance Data

Curved Spiral Duct Return Grilles • 6100C Series

Models: 6145HC, 6155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .013	300 .006 .028	400 .010 .050	500 .016 .078	600 .022 .113	700 .031 .153	800 .040 .200	900 .050 .253	1000 .062 .313
18 x 12	22 x 10 28 x 8 36 x 6	1.37	1.34	CFM NC	137 —	274 —	411 —	548 —	685 18	822 23	959 28	1096 33	1233 36	1370 39
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 —	608 —	760 18	912 23	1064 28	1216 34	1368 37	1520 40
32 x 8	22 x 12 26 x 10	1.61	1.59	CFM NC	161 —	322 —	483 —	644 —	805 19	966 24	1127 29	1288 34	1449 37	1610 40
24 x 12	30 x 10 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 —	740 —	925 19	1110 24	1295 29	1480 34	1665 37	1850 41
32 x 10	28 x 12	2.04	1.96	CFM NC	204 —	408 —	612 —	816 —	1020 19	1224 25	1428 30	1632 35	1836 38	2040 41
30 x 12	36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 —	928 15	1160 20	1392 25	1624 30	1856 35	2088 38	2320 42
32 x 12	38 x 10 48 x 8	2.48	2.38	CFM NC	248 —	496 —	744 —	992 15	1240 20	1488 26	1736 31	1984 36	2232 39	2480 42
40 x 10		2.56	2.44	CFM NC	256 —	512 —	768 —	1024 15	1280 20	1536 26	1792 31	2048 36	2304 39	2560 42
36 x 12	44 x 10	2.79	2.66	CFM NC	279 —	558 —	837 —	1116 16	1395 21	1674 27	1953 31	2232 36	2511 39	2790 43
48 x 10		3.08	2.92	CFM NC	308 —	616 —	924 —	1232 16	1540 21	1848 27	2156 31	2464 36	2772 39	3080 43

CFM - cubic feet per minute
VP - velocity pressure - inches w.g.
Neg. SP - negative static pressure - inches w.g.
NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

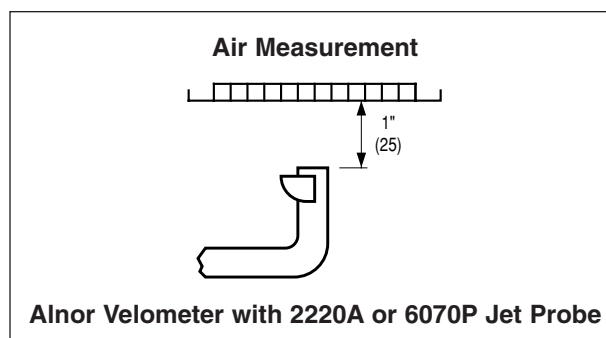
Performance Notes:

1. Performance data is based on Model 6145HC. For Model 6155HC apply the following correction factors:

Neg. SP Listed Value x 1.3.

NC Listed value + 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.



Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
 Airflow (CFM) = Average velocity (V_k) x Ak.

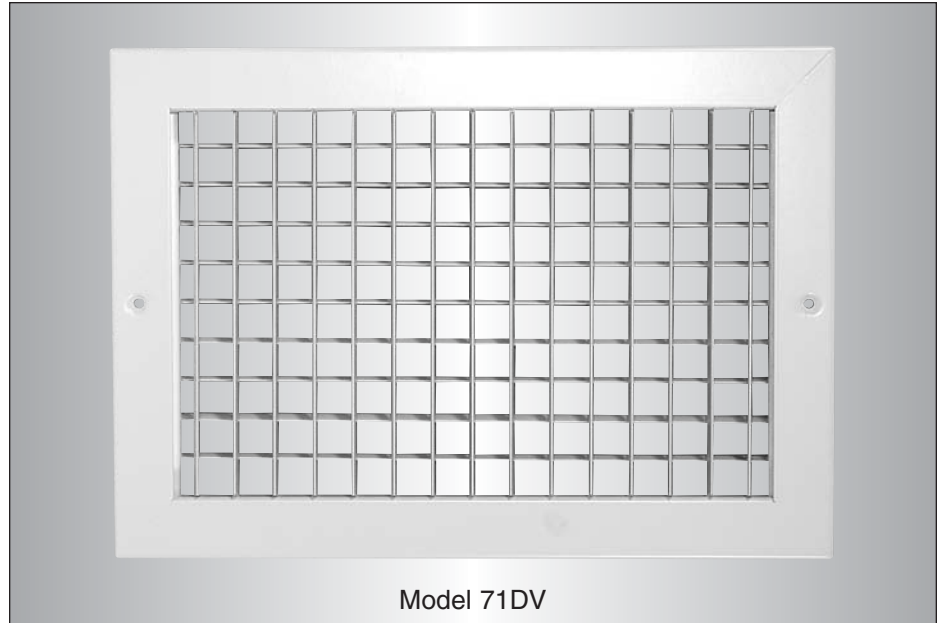
AIRFOIL SERIES DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY
- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE

Models:

71DV and 71DH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper

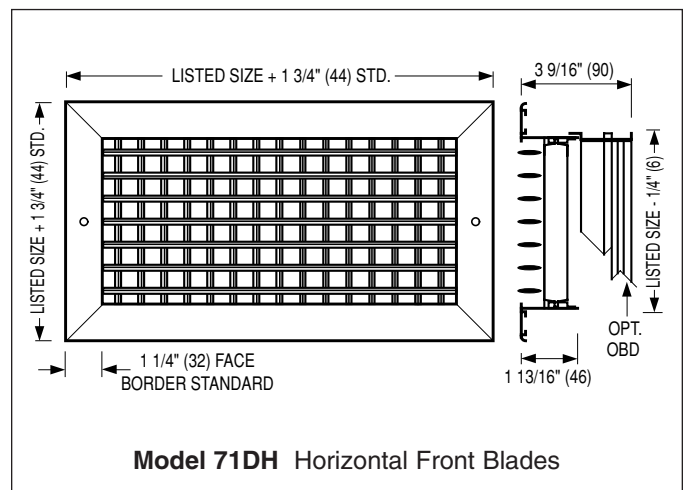
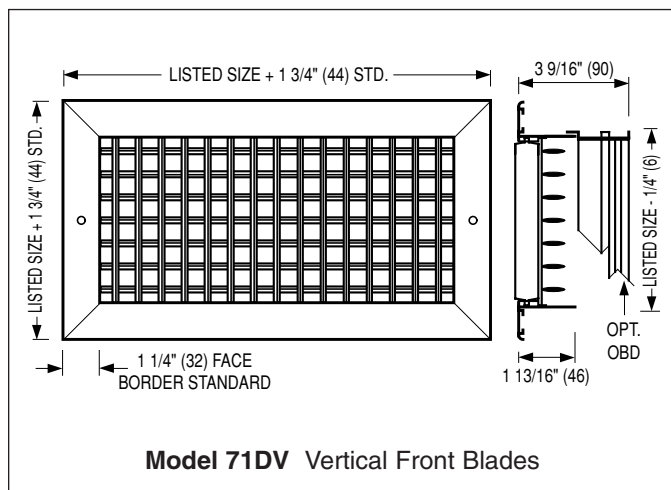


Models 71DV and 71DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined airfoil shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of approximately 77%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.
- Adjustable air pattern – Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.



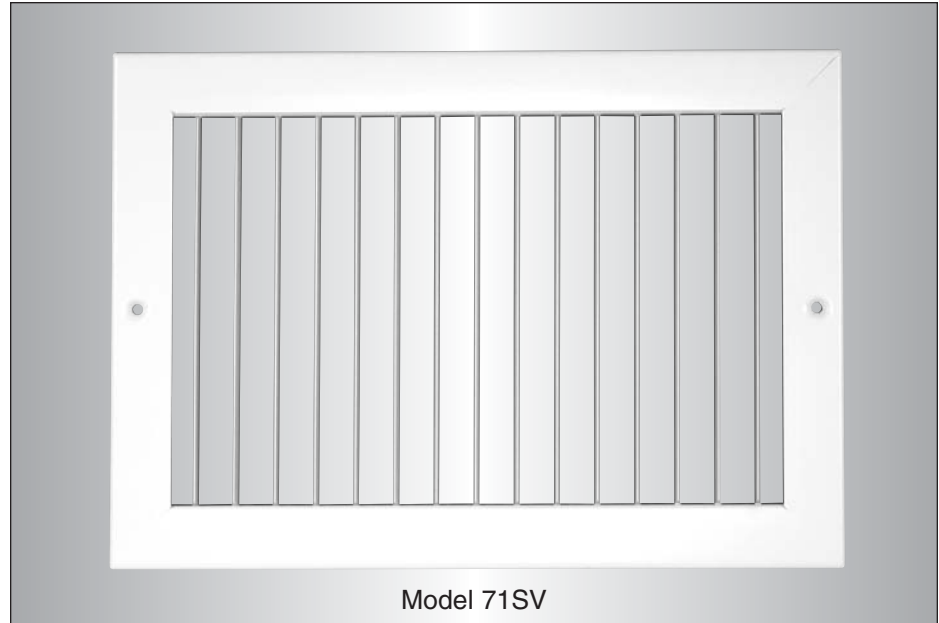
AIRFOIL SERIES SINGLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY
- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE

Models:

71SV and 71SH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper

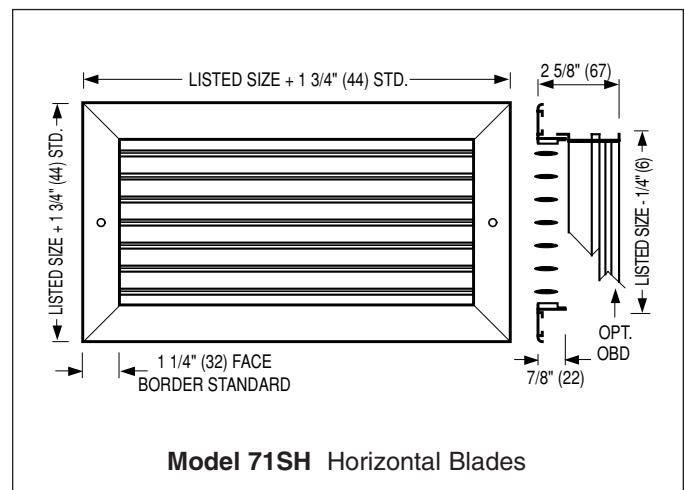
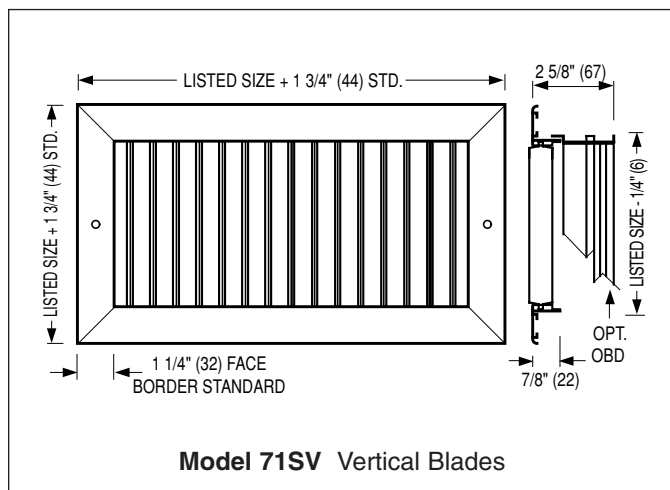


Models 71SV and 71SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined airfoil shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of approximately 77%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.
- Adjustable air pattern – Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Airfoil Blade Supply Grilles and Registers – Model Series 7100

GRILLES AND REGISTERS

		71 D V - O - 24 x 12 - S - AW - A - —			
MODEL	_____			ACCESSORIES	
- Aluminum Airfoil Blade	71			- None (default)	—
SUPPLY	_____			- Plaster Sub-frame	PF
- Double Deflection	D			- Foam Gasket	GK
- Single Deflection	S			FASTENING	
FRONT BLADE DIRECTION	_____			- Screw Holes (default)	A
- Vertical	V			- Concealed Mounting Straps	C
- Horizontal	H			- Concealed Screw Holes in Neck	D
DAMPER (OBD)	_____			- None	N
- Steel (standard)	O			FINISH	
- Aluminum	OA			- Appliance White (default)	AW
- No Damper	—			- Aluminum	AL
WIDTH x HEIGHT	_____			- Special Custom Color	SP
inches (mm) x inches (mm)				- Satin (clear) Anodized	SA
				FRAME / BORDER TYPE	
				Surface Mount:	
				- Standard 1 1/4" (32) (default)	S
				- Narrow 1" (25)	NF

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example; an airfoil blade double deflection register, front blades vertical and steel damper, is Model 71DV-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
- Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
- The larger dimension must always be specified first; for example 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

71DV, 71DH Double Deflection

Furnish and install **Nailor Model** (select one) **71DV** or **71DH Airfoil Blade Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

71SV, 71SH Single Deflection

Furnish and install **Nailor Model** (select one) **71SV** or **71SH Airfoil Blade Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Notes for Supply Grilles and Registers

Airfoil Blade 7100 Series

Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

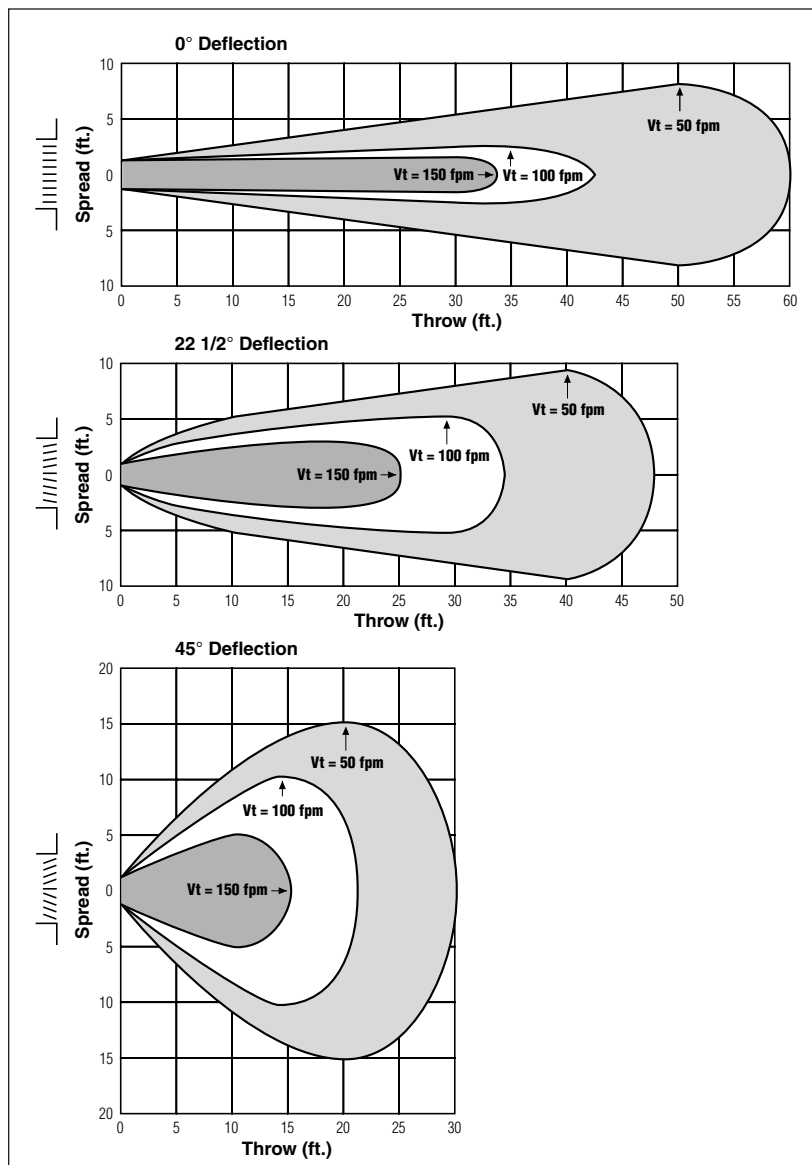
In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The

angle of spread and temperature differential between the supply air and room air (ΔT) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F ΔT) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

Spread Characteristics With Three Deflection Settings



NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

TP Correction Factors for Grilles Without Damper (multiply)

Blade deflection	0°	22 1/2°	45°
Double Defl. Factor	x .73	x .76	x .84
Single Defl. Factor	x .66	x .70	x .80

NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18

Performance Data

Supply Grilles and Registers • Airfoil Blade 7100 Series

Models: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				0°	.011	.019	.030	.044	.060	.078	.122	.175	.238
				TP 22 1/2°	.012	.022	.034	.049	.067	.087	.136	.196	.267
				45°	.019	.033	.052	.074	.101	.132	.207	.298	.406
6 x 6	8 x 4 10 x 4	0.20		CFM NC	60	80	100	120	140	160	200	240	280
				0°	—	—	—	11	16	20	26	32	37
			.16 .15 .14	T 22 1/2° 45°	5-7-13 4-6-10 3-4-7	7-9-16 6-7-13 4-5-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-15-21 9-12-17 6-8-11	12-16-23 10-13-18 8-10-12	15-18-25 12-14-20 8-9-13	16-20-27 13-16-22 8-10-14	17-21-30 14-17-24 9-11-15
8 x 6	10 x 5 12 x 4	0.27		CFM NC	81	108	135	162	189	216	270	324	378
				0°	—	—	—	12	17	21	27	33	38
			.21 .20 .18	T 22 1/2° 45°	5-8-15 4-6-12 3-4-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-16-23 9-13-18 6-8-12	13-18-25 10-14-20 7-9-13	15-19-27 12-15-22 8-10-14	17-21-30 14-17-24 9-11-15	18-23-32 14-18-26 9-12-16	19-24-35 15-19-28 10-12-18
10 x 6	12 x 5 16 x 4	0.35		CFM NC	105	140	175	210	245	280	350	420	490
				0°	—	—	—	13	18	22	28	34	39
			.27 .26 .24	T 22 1/2° 45°	6-9-18 5-7-14 3-5-9	9-13-21 7-10-17 5-7-11	10-16-24 8-13-19 5-8-12	12-19-26 10-15-21 6-10-13	15-20-28 12-16-22 8-10-14	17-21-30 14-17-24 9-11-15	20-23-33 16-18-26 10-12-17	21-25-36 17-20-29 11-13-18	22-27-39 18-22-31 11-14-20
8 x 8	14 x 5	0.38		CFM NC	114	152	190	228	266	304	380	456	532
				0°	—	—	—	14	19	23	29	35	40
			.30 .29 .26	T 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-29 13-17-23 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-26-37 17-21-30 11-13-19	23-28-40 18-22-32 12-14-20
12 x 6	18 x 4	0.42		CFM NC	126	168	210	252	294	336	420	504	588
				0°	—	—	—	14	19	23	29	35	40
			.33 .32 .29	T 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-28-38 17-22-30 11-14-19	23-29-41 18-23-33 12-15-21
14 x 6	10 x 8	0.50		CFM NC	150	200	250	300	350	400	500	600	700
				0°	—	—	—	15	20	24	30	36	41
			.39 .38 .34	T 22 1/2° 45°	6-11-20 5-9-16 3-6-10	10-15-23 8-12-18 5-8-12	12-18-25 10-14-20 6-9-13	15-20-28 12-16-22 8-10-14	16-22-31 13-18-25 8-11-16	19-23-33 15-18-26 10-12-17	21-25-36 17-20-29 11-13-18	23-28-40 18-22-32 12-14-20	25-31-43 20-25-34 13-16-22
12 x 8	16 x 6 24 x 4	0.58		CFM NC	174	232	290	348	406	464	580	696	812
				0°	—	—	—	16	21	25	31	37	42
			.45 .44 .39	T 22 1/2° 45°	7-11-21 6-9-17 4-6-11	10-15-24 8-12-19 5-8-12	12-19-27 10-15-22 6-10-14	15-21-30 12-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-34 16-19-27 10-12-17	22-27-38 18-22-30 11-14-19	24-30-42 19-24-34 12-15-21	26-32-45 21-26-36 13-16-23
10 x 10	14 x 7 26 x 4	0.61		CFM NC	183	244	305	366	427	488	610	732	854
				0°	—	—	—	16	21	25	31	37	42
			.48 .46 .41	T 22 1/2° 45°	7-11-21 6-9-17 4-6-11	10-16-24 8-13-19 5-8-12	13-19-28 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-35 16-19-28 10-12-18	23-28-39 18-22-31 12-14-20	24-30-43 19-24-34 12-15-22	27-32-46 22-26-37 14-16-23
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM NC	195	260	325	390	455	520	650	780	910
				0°	—	—	—	17	22	26	32	38	43
			.51 .49 .44	T 22 1/2° 45°	7-12-22 6-10-18 4-6-11	11-16-25 9-13-20 6-8-13	13-20-29 10-16-23 7-10-15	16-22-32 13-18-26 8-11-16	18-24-34 14-19-27 9-12-17	21-25-36 17-20-29 11-13-18	24-29-40 19-23-32 12-15-20	25-32-45 20-26-36 13-16-23	28-34-48 22-27-38 14-17-24
12 x 10	20 x 6 24 x 5	0.74		CFM NC	222	296	370	444	518	592	740	888	1036
				0°	—	—	—	17	22	26	32	38	43
			.58 .56 .50	T 22 1/2° 45°	8-13-24 6-10-19 4-7-12	11-17-27 9-14-22 6-9-14	14-21-31 11-17-25 7-11-16	17-24-33 14-19-26 9-12-17	20-26-36 16-21-29 10-13-18	22-27-39 18-22-31 11-14-20	25-31-43 20-25-34 13-16-22	27-33-48 22-26-38 14-17-24	30-36-51 24-29-41 15-18-26
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM NC	240	320	400	480	560	640	800	960	1120
				0°	—	—	—	18	23	27	33	39	44
			.62 .60 .54	T 22 1/2° 45°	8-13-25 6-10-20 4-7-13	11-18-28 9-14-22 6-9-14	15-22-32 12-18-26 8-11-16	18-25-35 14-20-28 9-13-18	20-27-38 16-22-30 10-14-19	23-28-41 18-22-33 12-14-21	26-32-45 21-26-36 13-16-23	28-35-50 22-28-40 14-18-25	31-38-53 25-30-42 16-19-27
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM NC	270	360	450	540	630	720	900	1080	1260
				0°	—	—	—	18	23	27	33	39	44
			.70 .68 .61	T 22 1/2° 45°	9-14-26 7-11-21 5-7-13	12-18-29 10-14-23 6-9-15	15-23-33 12-18-26 8-12-17	18-26-36 14-21-29 9-13-18	21-27-39 17-22-31 11-14-20	24-29-42 19-23-34 12-15-21	27-33-47 22-26-38 14-17-24	29-36-51 23-29-41 15-18-26	32-39-56 26-31-45 16-20-28
18 x 10	30 x 6	1.13		CFM NC	339	452	565	678	791	904	1130	1356	1582
				0°	—	—	—	19	24	28	34	40	45
			.88 .85 .77	T 22 1/2° 45°	9-15-29 7-12-23 5-8-15	14-20-33 11-16-26 7-10-17	17-25-36 14-20-29 9-13-18	20-29-40 16-23-32 10-15-20	24-30-43 19-24-34 12-15-22	27-33-46 22-26-37 14-17-23	30-36-51 24-29-41 15-18-26	33-40-57 26-32-46 17-20-29	35-43-61 28-34-49 18-22-31

G

GRILLES AND REGISTERS

Performance Data

Supply Grilles and Registers • Airfoil Blade 7100 Series

Models: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400
				0°	.006	.010	.016	.022	.031	.040	.062	.090	.122
				TP 22 1/2°	.011	.019	.030	.044	.060	.078	.122	.175	.238
				45°	.012	.022	.034	.049	.067	.087	.136	.196	.267
					.019	.033	.052	.074	.101	.132	.207	.298	.406
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM NC	372	496	620	744	868	992	1240	1488	1736
					—	—	14	19	24	28	34	40	45
			.97 .93 .84	T 0° 22 1/2° 45°	11-18-33 9-14-26 6-9-17	16-25-39 13-20-31 8-13-20	20-29-42 16-23-34 10-15-21	24-33-47 19-26-38 12-17-24	27-36-51 22-29-41 14-18-26	31-39-54 25-31-43 16-20-27	35-42-60 28-34-48 18-21-30	39-47-66 31-38-53 20-24-33	41-51-71 33-41-57 21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM NC	411	548	685	822	959	1096	1370	1644	1918
					—	—	15	20	25	29	35	41	46
			1.07 1.03 .93	T 0° 22 1/2° 45°	11-18-33 9-14-26 6-9-17	16-25-39 13-20-31 8-13-20	20-30-43 16-24-34 10-15-22	24-33-47 19-26-38 12-17-24	28-36-51 22-29-41 14-18-26	32-39-54 26-31-43 16-20-27	35-43-61 28-34-49 18-22-31	39-47-67 31-38-54 20-24-34	41-51-72 33-41-58 21-26-36
24 x 10	20 x 12 30 x 8	1.52		CFM NC	456	608	760	912	1064	1216	1520	1824	2128
					—	—	15	20	25	29	35	41	46
			1.19 1.14 1.03	T 0° 22 1/2° 45°	12-19-35 10-15-28 6-10-18	16-25-41 13-20-33 8-13-21	21-32-45 17-26-36 11-16-23	25-35-50 20-28-40 13-18-25	29-38-53 23-30-42 15-19-27	34-41-57 27-33-46 17-21-29	37-45-64 30-36-51 19-23-32	41-50-70 33-40-56 21-25-35	43-53-76 34-42-61 22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM NC	492	656	820	984	1148	1312	1640	1968	2296
					—	—	15	20	25	29	35	41	46
			1.28 1.23 1.12	T 0° 22 1/2° 45°	12-20-37 10-16-30 6-10-19	17-26-42 14-21-34 9-13-21	22-32-47 18-26-38 11-16-24	26-37-51 21-30-41 13-19-26	31-40-56 25-32-45 16-20-28	35-42-59 28-34-47 18-21-30	39-47-67 31-38-54 20-24-34	42-51-73 34-41-58 21-26-37	46-56-79 37-45-63 23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM NC	555	740	925	1110	1295	1480	1850	2220	2590
					—	—	16	21	26	30	36	42	47
			1.44 1.39 1.26	T 0° 22 1/2° 45°	12-20-38 10-16-30 6-10-19	18-27-44 14-22-35 9-14-22	22-33-48 18-26-38 11-17-24	27-38-54 22-30-43 14-19-27	32-40-58 26-32-46 16-20-29	36-44-62 29-35-50 18-22-31	40-48-69 32-38-55 20-24-35	44-54-76 35-43-61 22-27-38	48-58-82 38-46-66 24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM NC	630	840	1050	1260	1470	1680	2100	2520	2940
					—	—	16	21	26	30	36	42	47
			1.64 1.58 1.43	T 0° 22 1/2° 45°	13-21-40 10-17-32 7-11-20	19-29-47 15-23-38 10-15-24	24-36-52 19-29-42 12-18-26	29-40-57 23-32-46 15-20-29	33-43-62 26-34-50 17-22-31	38-47-66 30-38-53 19-24-33	42-52-74 34-42-59 21-26-37	47-57-81 38-46-65 24-29-41	50-62-87 40-50-70 25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM NC	696	928	1160	1392	1624	1856	2320	2784	3248
					—	—	17	22	27	31	37	43	48
			1.81 1.74 1.58	T 0° 22 1/2° 45°	14-23-43 11-18-34 7-12-22	21-31-50 17-25-40 11-16-25	26-39-56 21-31-45 13-20-28	31-43-61 25-34-49 16-22-31	36-47-67 29-38-54 18-24-34	41-50-71 33-40-57 21-25-36	46-56-79 32-45-63 23-28-40	50-61-86 40-49-69 25-31-43	54-67-94 43-54-75 27-34-47
24 x 16	32 x 12	2.50		CFM NC	750	1000	1250	1500	1750	2000	2500	3000	3500
					—	—	17	22	27	31	37	43	48
			1.95 1.88 1.70	T 0° 22 1/2° 45°	14-24-45 11-19-36 7-12-23	22-32-52 18-26-42 11-16-26	27-40-58 22-32-46 14-20-29	32-45-64 26-36-51 16-23-32	37-49-68 30-39-54 19-25-34	43-52-74 34-42-59 22-26-37	48-58-82 38-46-66 24-29-41	52-64-90 42-51-72 26-32-45	56-68-97 45-54-78 28-34-49
20 x 20	22 x 18	2.61		CFM NC	783	1044	1305	1566	1827	2088	2610	3132	3654
					—	—	17	22	27	31	37	43	48
			2.04 1.96 1.77	T 0° 22 1/2° 45°	15-24-46 12-19-37 8-12-23	22-32-53 18-26-42 11-16-27	27-41-59 22-33-47 14-21-30	32-46-65 26-37-52 16-23-33	38-50-70 30-40-56 19-25-35	44-53-75 35-42-60 22-27-38	49-59-84 39-47-67 25-30-42	53-65-92 42-52-74 27-33-46	58-70-99 46-56-79 29-35-50
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM NC	837	1116	1395	1674	1953	2232	2790	3348	3906
					—	—	17	22	27	31	37	43	48
			2.18 2.09 1.90	T 0° 22 1/2° 45°	15-25-48 12-20-38 8-13-24	23-34-55 18-27-44 12-17-28	28-42-61 22-34-49 14-21-31	34-48-68 27-38-54 17-24-34	4-51-73 32-41-58 20-26-37	45-55-77 36-44-62 23-28-39	50-61-86 40-49-69 25-31-43	55-68-95 44-54-76 28-34-48	59-73-103 47-58-82 30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM NC	951	1268	1585	1902	2219	2536	3170	3804	4438
					—	—	18	23	28	32	38	44	49
			2.47 2.38 2.16	T 0° 22 1/2° 45°	17-27-50 14-22-40 9-14-25	24-36-58 19-29-46 12-18-29	29-45-65 23-36-52 15-23-33	36-50-71 29-40-57 18-25-36	42-54-77 34-43-62 21-27-39	47-58-82 38-46-66 24-29-41	53-65-92 42-52-74 27-33-46	58-71-101 46-57-81 29-36-51	62-77-109 50-62-87 31-39-55
42 x 12	36 x 14	3.27		CFM NC	981	1308	1635	1962	2289	2616	3270	3924	4578
					—	—	18	23	28	32	38	44	49
			2.55 2.45 2.22	T 0° 22 1/2° 45°	17-27-51 14-22-41 9-14-26	24-36-59 19-29-47 12-18-30	30-45-66 24-36-53 15-23-33	36-51-72 29-41-58 18-26-36	42-55-77 34-44-62 21-28-39	48-59-83 38-47-66 24-30-42	53-66-93 42-53-74 27-33-47	59-72-101 47-58-81 3-36-51	63-77-109 50-62-87 32-39-55
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM NC	1062	1416	1770	2124	2478	2832	3540	4248	4956
					—	—	18	23	28	32	38	44	49
			2.76 2.66 2.41	T 0° 22 1/2° 45°	18-28-53 14-22-42 9-14-27	25-37-61 20-30-49 13-19-31	31-47-69 25-38-55 16-24-35	37-53-75 30-42-60 19-27-38	44-57-81 35-46-65 22-29-41	50-61-86 40-49-69 25-31-43	56-69-97 45-55-78 28-35-49	61-75-106 49-60-85 31-38-53	66-81-115 53-65-92 33-41-58

Performance Data

Supply Grilles and Registers • Airfoil Blade 7100 Series

Models: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				0°	.011	.019	.030	.044	.060	.078	.122	.175	.238
				TP 22 1/2°	.012	.022	.034	.049	.067	.087	.136	.196	.267
				45°	.019	.033	.052	.074	.101	.132	.207	.298	.406
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM NC	1137	1516	1895	2274	2653	3032	3790	4548	5306
					—	11	18	23	28	32	38	44	49
			2.96	0°	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
			2.84	T 22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
			2.58	45°	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	29-35-50	31-39-54	34-42-59
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM NC	1287	1716	2145	2574	3003	3432	4290	5148	6006
					—	12	19	24	29	33	39	45	50
			3.35	0°	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
			3.22	T 22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
			2.92	45°	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	31-38-53	34-42-59	37-45-63
26 x 26	28 x 24 48 x 14	4.47		CFM NC	1341	1788	2235	2682	3129	3576	4470	5364	6258
					—	12	19	24	29	33	39	45	50
			3.49	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
			3.35	T 22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
			3.04	45°	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM NC	1431	1908	2385	2862	3339	3816	4770	5724	6678
					—	12	19	24	29	33	39	45	50
			3.72	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
			3.58	T 22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
			3.24	45°	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	33-40-56	36-44-62	39-47-67
42 x 18	28 x 26	4.99		CFM NC	1497	1996	2495	2994	3493	3992	4990	5988	6986
					—	13	20	25	30	34	40	46	51
			3.89	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
			3.74	T 22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
			3.39	45°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	30-36-51	33-40-57	36-44-63	39-48-68
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM NC	1560	2080	2600	3120	3640	4160	5200	6240	7280
					—	13	20	25	30	34	40	46	51
			4.06	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
			3.90	T 22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
			3.54	45°	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	34-41-58	37-45-64	40-49-69
42 x 20	30 x 28	5.57		CFM NC	1671	2228	2785	3342	3899	4456	5570	6684	7798
					—	13	20	25	30	34	40	46	51
			4.34	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
			4.18	T 22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114
			3.79	45°	11-18-33	16-24-38	20-29-42	24-33-47	28-36-50	31-38-54	35-42-60	38-47-66	41-50-71
36 x 24	40 x 22 44 x 20	5.74		CFM NC	1722	2296	2870	3444	4018	4592	5740	6888	8036
					—	13	20	25	30	34	40	46	51
			4.48	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
			4.31	T 22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
			3.90	45°	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	36-44-62	39-48-69	43-52-74
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM NC	1797	2396	2995	3594	4193	4792	5990	7188	8386
					—	13	20	25	30	34	40	46	51
			4.67	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
			4.49	T 22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
			4.07	45°	12-18-35	17-25-40	21-31-45	25-35-49	29-38-53	33-40-57	37-45-63	40-49-69	43-53-75
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM NC	2016	2688	3360	4032	4704	5376	6720	8064	9408
					—	14	21	26	31	35	41	47	52
			5.24	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
			5.04	T 22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
			4.57	45°	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	39-47-66	42-51-72	45-56-79
32 x 32	40 x 26	6.84		CFM NC	2052	2736	3420	4104	4788	5472	6840	8208	9576
					—	14	21	26	31	35	41	47	52
			5.34	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
			5.13	T 22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	73-90-126
			4.65	45°	12-20-37	17-26-42	22-33-47	26-37-52	31-40-56	35-42-60	39-47-67	42-52-73	46-56-79
36 x 30	38 x 28	7.22		CFM NC	2166	2888	3610	4332	5054	5776	7220	8664	10108
					—	14	21	26	31	35	41	47	52
			5.63	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
			5.42	T 22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
			4.91	45°	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	40-49-70	44-54-76	47-58-82
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM NC	2307	3076	3845	4614	5383	6152	7690	9228	10766
					—	15	22	27	32	36	42	48	53
			6.00	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
			5.77	T 22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
			5.23	45°	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	41-50-71	45-55-78	49-59-84

Performance Data

Supply Grilles and Registers • Airfoil Blade 7100 Series

Models: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300	400	500	600	700	800	1000	1200	1400
				0°	.006	.010	.016	.022	.031	.040	.062	.090	.122
				TP 22 1/2°	.011	.019	.030	.044	.060	.078	.122	.175	.238
				45°	.012	.022	.034	.049	.067	.087	.136	.196	.267
					.019	.033	.052	.074	.101	.132	.207	.298	.406
36 x 34	38 x 32 40 x 30 48 x 26	8.20		CFM NC	2460	3280	4100	4920	5740	6560	8200	9840	11480
			6.40	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
			6.15	T 22 1/2°	21-34-63	30-46-73	38-56-82	46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	78-97-137
			5.58	45°	13-21-40	19-29-46	24-35-51	29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86
36 x 36	38 x 34 42 x 30 46 x 28	8.69		CFM NC	2607	3476	4345	5214	6083	6952	8690	10428	12166
			6.78	0°	28-45-84	39-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
			6.52	T 22 1/2°	22-36-67	31-48-77	39-59-86	48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	83-102-144
			5.91	45°	14-23-42	20-30-48	25-37-54	30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90
38 x 38	42 x 34	9.70		CFM NC	2910	3880	4850	5820	6790	7760	9700	11640	13580
			7.57	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
			7.28	T 22 1/2°	22-38-70	34-50-81	42-62-91	50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	87-107-152
			6.60	45°	14-24-44	21-31-51	27-39-57	31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95
42 x 36	44 x 34 48 x 30	10.16		CFM NC	3048	4064	5080	6096	7112	8128	10160	12192	14224
			7.92	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
			7.62	T 22 1/2°	23-38-72	34-51-83	42-64-94	51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	90-110-156
			6.91	45°	15-24-45	22-32-52	27-40-59	32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98
40 x 40	42 x 38 46 x 34 48 x 32	10.77		CFM NC	3231	4308	5385	6462	7539	8616	10770	12924	15078
			8.40	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
			8.08	T 22 1/2°	25-40-75	35-54-86	45-67-97	54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	94-114-162
			7.32	45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	50-61-86	54-66-94	59-72-102
42 x 42	44 x 40 46 x 38 48 x 36	11.89		CFM NC	3567	4756	5945	7134	8323	9512	11890	14268	16646
			9.27	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-149-210
			8.92	T 22 1/2°	26-42-78	37-55-90	46-69-100	55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	98-119-168
			8.09	45°	16-26-49	23-35-56	29-43-63	35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105
44 x 44	46 x 42	13.07		CFM NC	3921	5228	6535	7842	9149	10456	13070	15684	18298
			10.19	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
			9.80	T 22 1/2°	27-44-83	39-59-96	49-74-106	59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	103-126-178
			8.89	45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112
46 x 46		14.30		CFM NC	4290	5720	7150	8580	10010	11440	14300	17160	20020
			11.15	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
			10.73	T 22 1/2°	28-46-86	41-61-99	50-76-110	61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	107-130-185
			9.72	45°	18-29-54	26-38-62	32-48-69	38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	62-82-116
48 x 48		15.59		CFM NC	4677	6236	7795	9354	10913	12472	15590	18708	21826
			12.16	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
			11.69	T 22 1/2°	30-48-90	42-64-105	54-80-117	64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	112-138-195
			10.60	45°	19-30-57	27-40-66	34-50-73	40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122

CFM - cubic feet per minute

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts @ 0° deflection.

Core velocity is in feet per minute.

Performance Notes:

1. Performance data is based on double deflection grille with opposed blade damper (register).

2. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.

3. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.

4. Additional performance notes and correction factors for various models and settings may be found on page G61.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

AIRFOIL BLADE RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE

Models:

7145H, 7145V, 71FH & 71FV

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Models 7145H and 71FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 7145V and 71FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance compliments the supply grilles and registers in the **7100 Series**.

The streamlined airfoil shaped blades and open spacing maintain a minimum effective free area capacity of 55% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and compliment "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G175 in the Options and Accessories section for further information.

FEATURES:

• Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

• Aluminum construction - rigid, heavy-gauge extruded frames with reinforced mitered corners.

• Aluminum blades - streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

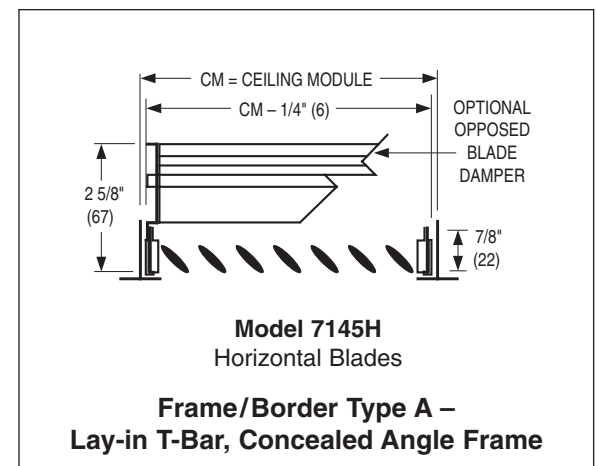
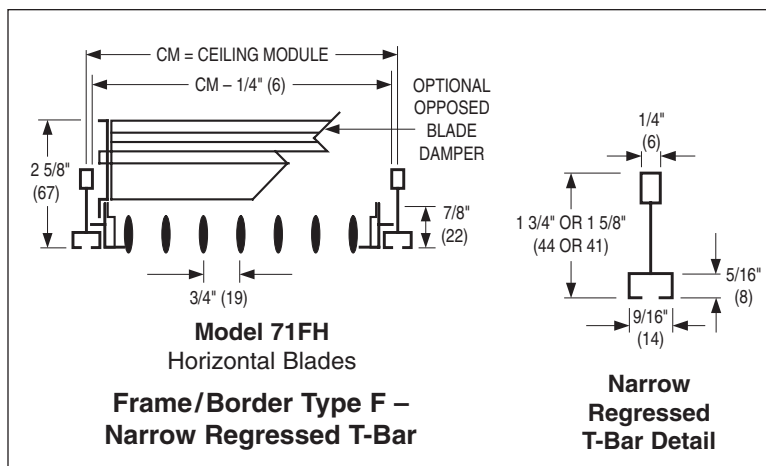
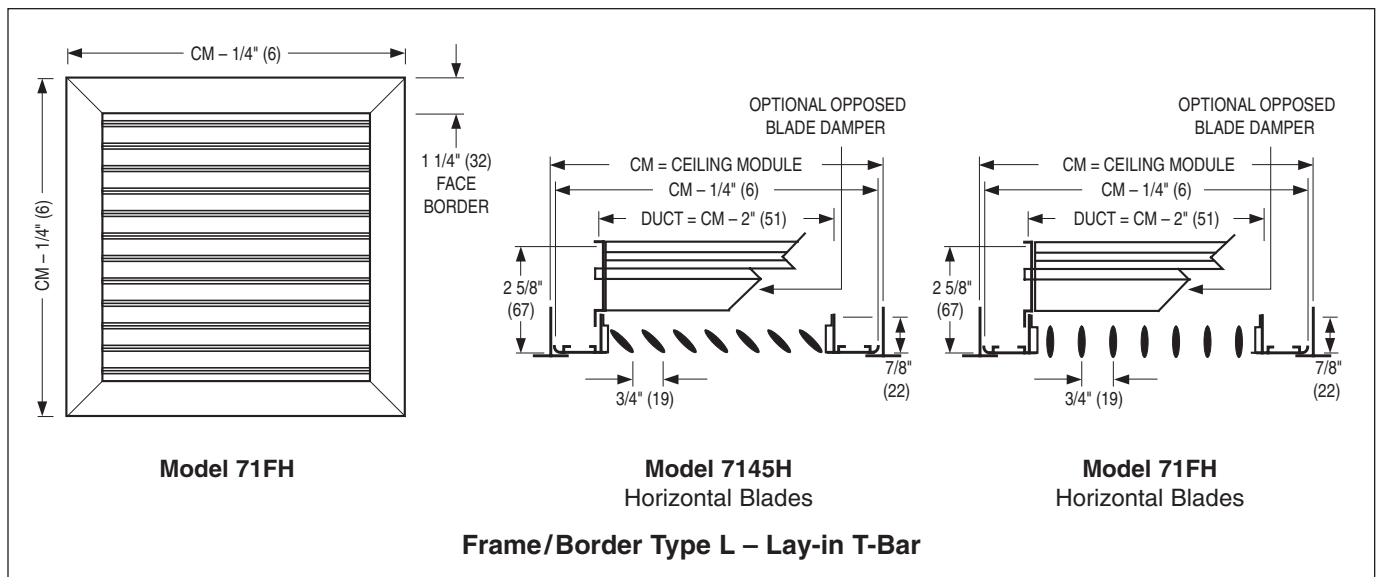
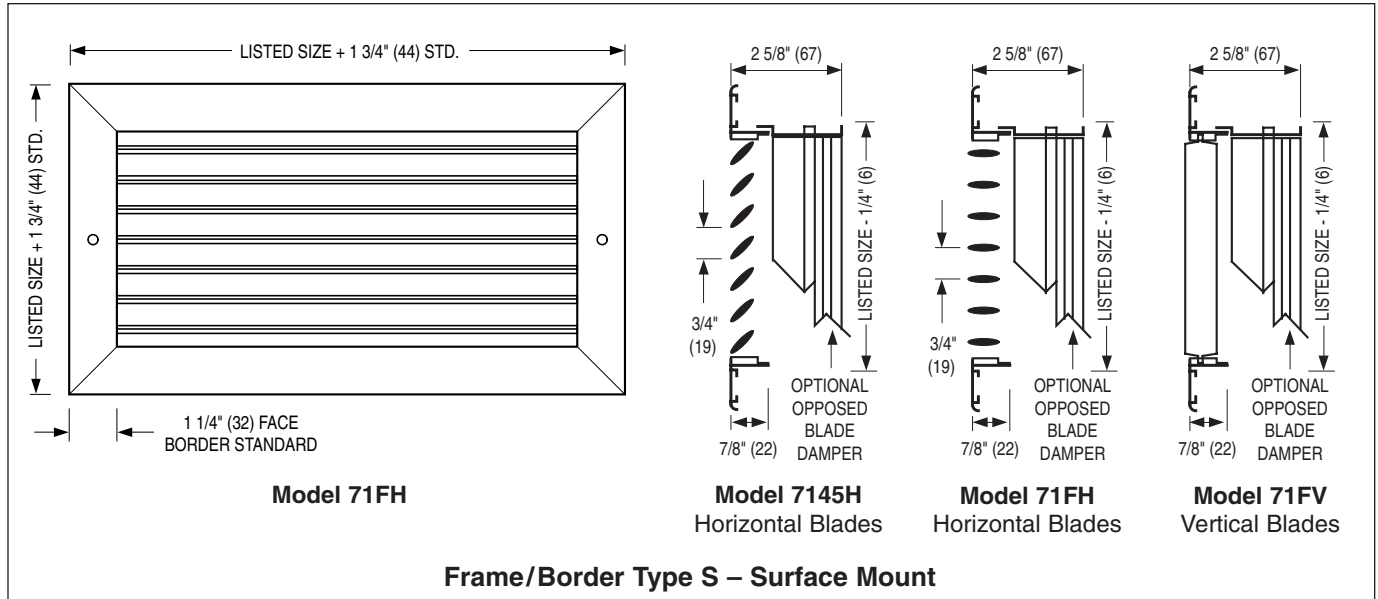
• Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

• AW Appliance White baked enamel finish is standard. Other finishes are available.

• Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

Dimensional Data

7100 Series Return 3/4" (19) Blade Spacing



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Airfoil Blade Return Grilles and Registers – Model Series 7100

71 45 H - O - 24 x 12 - S - OO - AW - A - —

MODEL

- Aluminum Airfoil Blade 71

RETURN

- Fixed 0° Defl., 3/4" (19) Spacing F
- Fixed 45° Defl., 3/4" (19) Spacing 45

BLADE DIRECTION

- Horizontal H
(Blades run long dimension)
- Vertical V
(Blades run short dimension)

DAMPER (OBD)

- Steel (standard) O
- Aluminum OA
- No Damper —

WIDTH X HEIGHT

inches (mm) x inches (mm)
For Type S, NF, PL, SP, MP, FP and TP, W x H = Duct Size
For Type L, F, and A, W x H = Ceiling Module Size

FRAME/BORDER TYPE

Surface Mount:

- Standard 1 1/4" (32) (default) S
- Narrow 1" (25) NF

Ceiling Grid:

- Lay-in T-Bar * L
- Angle Frame A
- Fineline® F

Panel Mount: **

	Steel	or	Aluminum
- Lay-in T-Bar	PLS	or	PLA
- Spline	SPS	or	SPA
- Metal Pan	MPS	or	MPA
- Fineline® Type	FPS	or	FPA
- Tegular	TPS	or	TPA

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a 45° deflection register, horizontal blades and steel damper, is Model 7145H-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
- The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).
- * For Type L Lay-in, grille neck size is ceiling module size - 2" (51).
** For Panel mounting, maximum grille neck size is ceiling module size - 3" (76).
Refer to Options and Accessories Page No. G175 for Dimensional Data.
*** Only available on Fixed 0° deflection models.

ACCESSORIES

- None (default) —
- Plaster Sub-frame PF
- Earthquake Tabs EQT

FASTENING

(only for frame / border types S, NF)
- Screw Holes (default) A
- Concealed Mounting Straps C
- Concealed Screw Holes in Neck ***D
- None N

FINISH

- Appliance White (default) AW
- Aluminum AL
- Special Custom Color SP
- Satin (clear) Anodized SA

CEILING MODULE SIZE

(Use only for panel mounting, frame / border types PL, SP, MP, FP, TP)
- None (default) OO

Imperial:

12 x 12, 24 x 12, 36 x 12,
48 x 12, 20 x 20, 24 x 24,
36 x 24, 48 x 24

Metric:

300 x 300, 600 x 300, 900 x 300,
1200 x 300, 500 x 500, 600 x 600,
900 x 600, 1200 x 600

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **7145H, 7145V, 71FH or 71FV Airfoil Blade Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have extruded aluminum fixed blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Fixed Blade Return Grilles and Registers • Airfoil Blade 7100 Series

Models: 7145H, 7145V

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .011	300 .006 .025	400 .010 .045	500 .016 .070	600 .022 .101	700 .031 .138	800 .040 .180	900 .050 .228	1000 .062 .281
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 —	100 —	120 17	140 22	160 26	180 30	200 34
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 —	140 —	168 18	196 23	224 27	252 31	280 35
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 —	175 —	210 19	245 24	280 28	315 32	350 36
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 —	190 15	228 20	266 25	304 29	342 33	380 37
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 —	210 16	252 21	294 25	336 30	378 34	420 38
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 —	232 —	290 17	348 22	406 26	464 31	522 35	580 39
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 —	244 —	305 17	366 22	427 27	488 32	549 35	610 39
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 —	260 —	325 18	390 23	455 28	520 32	585 36	650 39
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 —	296 —	370 18	444 23	518 28	592 33	666 37	740 40
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 —	450 19	540 24	630 29	720 34	810 37	900 40
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 —	496 —	620 19	744 24	868 29	992 34	1116 38	1240 41
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 —	548 15	685 20	822 25	959 30	1096 35	1233 38	1370 41
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 —	608 15	760 20	912 25	1064 30	1216 36	1368 39	1520 42
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 —	656 16	820 21	984 26	1148 31	1312 36	1476 39	1640 42
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 —	740 16	925 21	1110 26	1295 31	1480 36	1665 39	1850 43
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 —	630 —	840 16	1050 21	1260 27	1470 32	1680 37	1890 40	2100 43
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 —	928 17	1160 22	1392 27	1624 32	1856 37	2088 40	2320 44
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 —	783 —	1044 17	1305 22	1566 28	1827 33	2088 38	2349 41	2610 44
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 —	951 —	1268 18	1585 23	1902 29	2219 33	2536 38	2853 41	3170 45
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 —	1062 —	1416 18	1770 23	2124 29	2478 34	2832 39	3186 42	3540 46
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 —	1137 —	1516 18	1895 23	2274 29	2653 34	3032 39	3411 42	3790 46
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 —	1281 —	1708 19	2135 24	2562 30	2989 35	3416 40	3843 43	4270 47
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 —	1341 —	1788 19	2235 24	2682 30	3129 35	3576 40	4023 43	4470 47
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 —	1431 —	1908 20	2385 25	2862 31	3339 36	3816 40	4293 44	4770 48
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 —	1560 —	2080 20	2600 25	3120 31	3640 36	4160 41	4680 44	5200 48
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 —	1722 —	2296 20	2870 26	3444 32	4018 36	4592 41	5166 45	5740 49
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 —	1797 —	2396 20	2995 26	3594 32	4193 37	4792 41	5391 45	5990 49

Performance Data

Fixed Blade Return Grilles and Registers • Airfoil Blade 7100 Series

Models: 7145H, 7145V

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .011	300 .006 .025	400 .010 .045	500 .016 .070	600 .022 .101	700 .031 .138	800 .040 .180	900 .050 .228	1000 .062 .281
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 —	1368 —	2052 —	2736 21	3420 27	4104 33	4788 37	5472 42	6156 46	6840 50
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 —	1538 —	2307 15	3076 21	3845 27	4614 33	5383 38	6152 42	6921 46	7690 50
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 —	1738 —	2607 15	3476 22	4345 27	5214 34	6083 39	6952 43	7821 47	8690 51
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 —	1940 —	2910 16	3880 22	4850 28	5820 34	6790 39	7760 43	8730 47	9700 51
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 —	2154 —	3231 16	4308 22	5385 28	6462 34	7539 40	8616 43	9693 48	10770 52
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 —	2378 —	3567 17	4756 23	5945 29	7134 35	8323 40	9512 44	10701 48	11890 52
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 —	2614 —	3921 17	5228 23	6535 29	7842 35	9149 40	10456 44	11763 48	13070 52
46 x 46		14.30	13.10	CFM NC	1430 —	2860 —	4290 18	5720 24	7150 30	8580 36	10010 41	11440 45	12870 49	14300 53
48 x 48		15.59	14.26	CFM NC	1559 —	3118 —	4677 18	6236 24	7795 30	9354 36	10913 41	12472 45	14031 49	15590 53

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

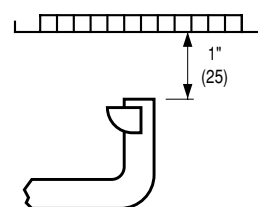
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value – 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

Performance Data

Fixed Blade Return Grilles and Registers • Airfoil Blade 7100 Series

Models: 71FH, 71FV

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .002	200 .002 .007	300 .006 .017	400 .010 .030	500 .016 .047	600 .022 .067	700 .031 .092	800 .040 .120	900 .050 .152	1000 .062 .187
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 —	100 —	120 —	140 16	160 19	180 23	200 28
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 —	140 —	168 15	196 17	224 20	252 24	280 29
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 —	175 —	210 16	245 18	280 21	315 25	350 30
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 —	190 —	228 17	266 19	304 22	342 26	380 30
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 —	210 —	252 17	294 20	336 23	378 27	420 31
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 —	232 —	290 —	348 17	406 20	464 24	522 28	580 32
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 —	244 —	305 —	366 17	427 20	488 25	549 28	610 33
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 —	260 —	325 —	390 18	455 21	520 25	585 29	650 33
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 —	296 —	370 —	444 19	518 22	592 26	666 30	740 33
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 —	450 15	540 19	630 22	720 27	810 30	900 33
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 —	496 —	620 15	744 20	868 23	992 27	1116 31	1240 34
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 —	548 —	685 16	822 21	959 24	1096 29	1233 32	1370 35
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 —	608 —	760 16	912 21	1064 25	1216 30	1368 33	1520 36
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 —	656 —	820 17	984 21	1148 25	1312 30	1476 33	1640 36
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 —	740 —	925 17	1110 22	1295 25	1480 30	1665 33	1850 37
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 —	630 —	840 —	1050 17	1260 22	1470 26	1680 31	1890 34	2100 37
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 —	928 —	1160 17	1392 22	1624 26	1856 31	2088 34	2320 38
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 —	783 —	1044 —	1305 17	1566 22	1827 26	2088 31	2349 34	2610 38
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 —	951 —	1268 —	1585 18	1902 23	2219 27	2536 31	2853 34	3170 38
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 —	1062 —	1416 —	1770 18	2124 23	2478 27	2832 32	3186 35	3540 39
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 —	1137 —	1516 —	1895 18	2274 23	2653 28	3032 32	3411 35	3790 39
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 —	1281 —	1708 15	2135 20	2562 24	2989 28	3416 33	3843 36	4270 40
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 —	1341 —	1788 15	2235 20	2682 24	3129 28	3576 33	4023 36	4470 40
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 —	1431 —	1908 16	2385 21	2862 25	3339 29	3816 33	4293 37	4770 41
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 —	1560 —	2080 16	2600 21	3120 25	3640 29	4160 34	4680 37	5200 41
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 —	1722 —	2296 16	2870 21	3444 25	4018 29	4592 34	5166 38	5740 42
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 —	1797 —	2396 16	2995 21	3594 26	4193 30	4792 34	5391 38	5990 42

Performance Data

Fixed Blade Return Grilles and Registers • Airfoil Blade 7100 Series

Models: 71FH, 71FV

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .002	200 .002 .007	300 .006 .017	400 .010 .030	500 .016 .047	600 .022 .067	700 .031 .092	800 .040 .120	900 .050 .152	1000 .062 .187
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 —	1368 —	2052 —	2736 16	3420 22	4104 26	4788 30	5472 35	6156 39	6840 43
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 —	1538 —	2307 —	3076 16	3845 22	4614 27	5383 31	6152 35	6921 39	7690 43
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 —	1738 —	2607 —	3476 17	4345 22	5214 27	6083 32	6952 36	7821 40	8690 44
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 —	1940 —	2910 —	3880 17	4850 23	5820 28	6790 32	7760 36	8730 40	9700 44
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 —	2154 —	3231 —	4308 18	5385 24	6462 28	7539 33	8616 36	9693 41	10770 45
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 —	2378 —	3567 —	4756 18	5945 24	7134 29	8323 33	9512 37	10701 41	11890 45
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 —	2614 —	3921 —	5228 18	6535 24	7842 29	9149 33	10456 37	11763 41	13070 45
46 x 46		14.30	13.10	CFM NC	1430 —	2860 —	4290 —	5720 19	7150 25	8580 30	10010 34	11440 38	12870 42	14300 46
48 x 48		15.59	14.26	CFM NC	1559 —	3118 —	4677 —	6236 19	7795 25	9354 30	10913 34	12472 38	14031 42	15590 46

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

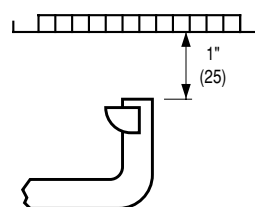
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value – 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

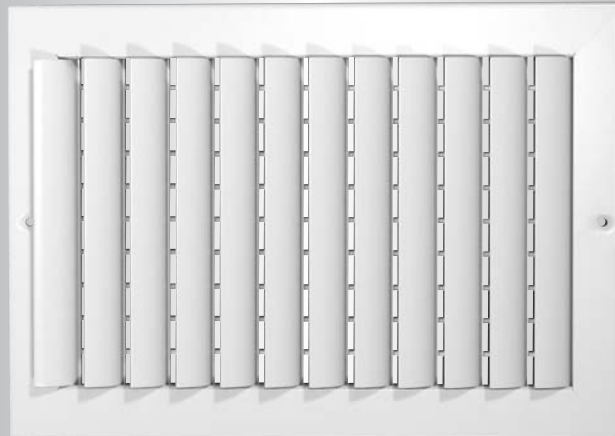
ALUMINUM CURVED BLADE GRILLES AND REGISTERS

• SUPPLY

Models:

51C and 51CD with One and Two-way Discharge Pattern

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51CD (Pattern 1B)

Models 51C and 51CD are supply grilles and registers which incorporate individually adjustable curved blades. The blades can be positioned to provide one-way, two-way and two-way corner blow discharge air patterns. They are commonly used in ceiling and/or side wall locations and are recommended for use in both heating and cooling applications.

Both one-way and two-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

FEATURES:

- High quality, extruded aluminum construction.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Heavy gauge extruded aluminum margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers.

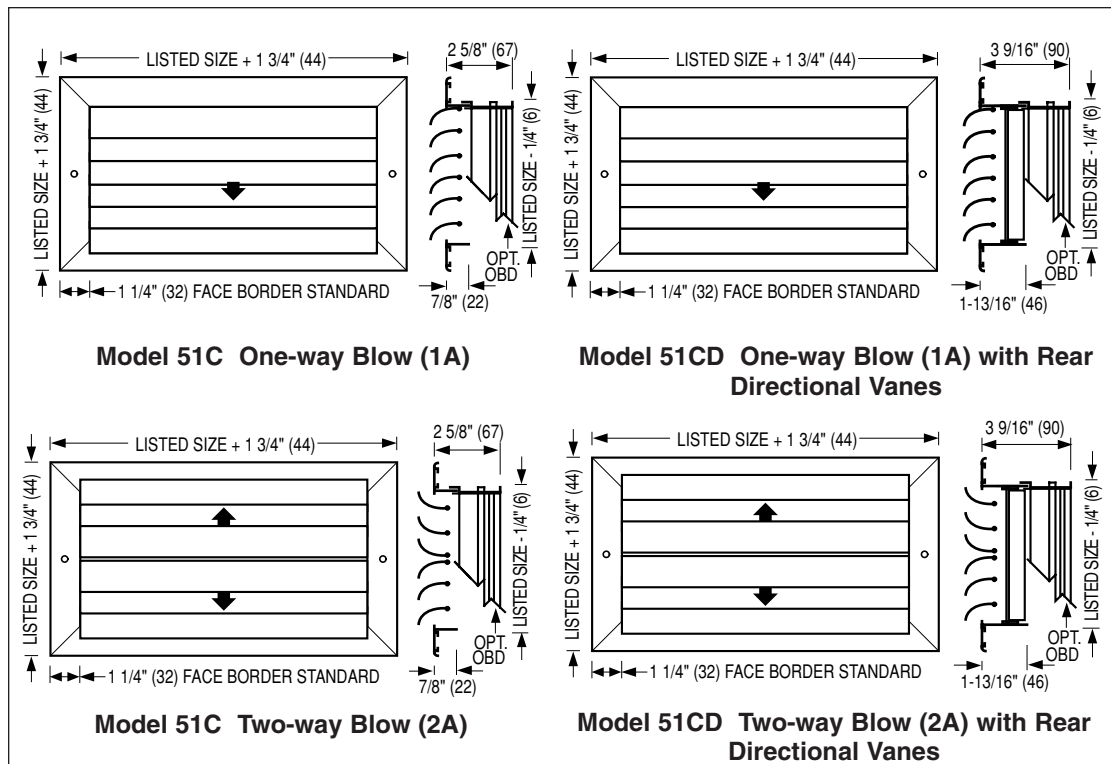
Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.

- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.
- Adjustable pattern – grille blades easily adjustable to provide horizontal one-way or two-way air path from a ceiling location.

Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.

- AW Appliance White baked enamel finish is standard. Other finishes are available.

- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).



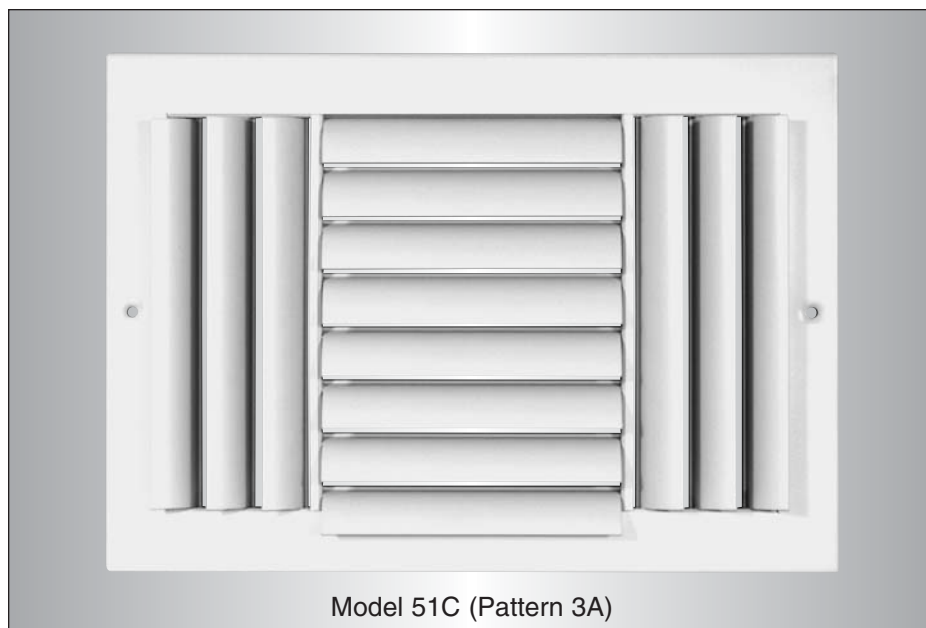
ALUMINUM CURVED BLADE GRILLES AND REGISTERS

• SUPPLY

Model:

51C with Three and Four-way Discharge Pattern

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51C (Pattern 3A)

Model 51C Pattern 3A, 3B or 3C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a three-way ceiling air pattern. **Model 51C Pattern 4A, 4B or 4C Supply Ceiling Grilles and Registers** have individually adjustable curved blades arranged to provide a four-way ceiling air pattern. They are recommended for applications in ceiling locations for heating and cooling systems.

Both three-way and four-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

FEATURES:

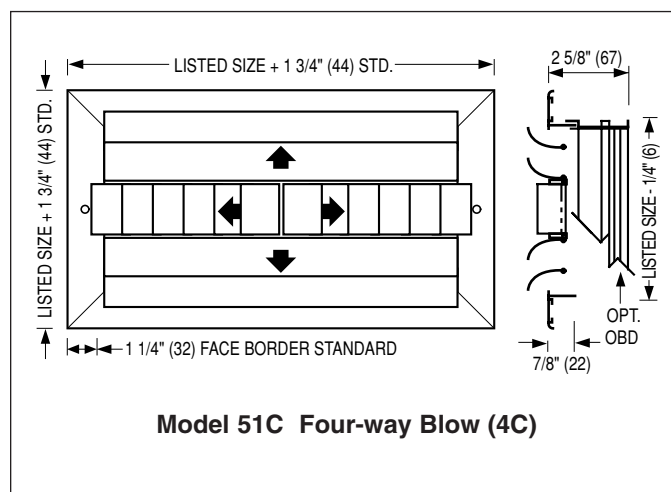
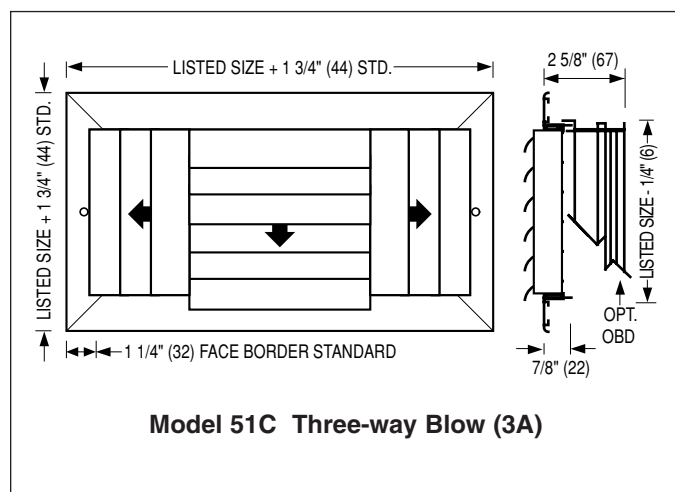
- High quality, extruded aluminum construction.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Heavy gauge extruded aluminum margins, mechanically interlocked

with reinforced mitered corners.

- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.
- Adjustable pattern – grille blades easily adjustable to provide horizontal

three-way or four-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.

- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).



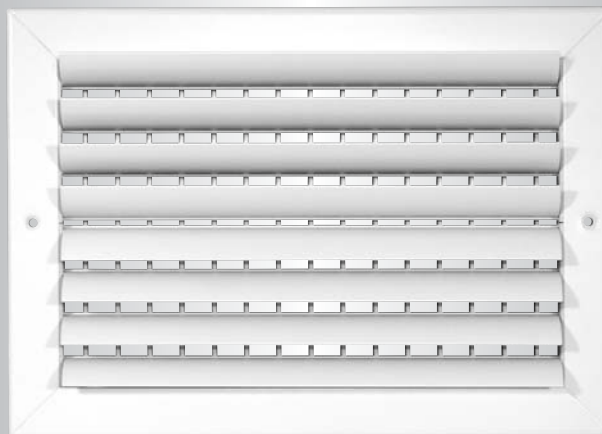
STEEL CURVED BLADE GRILLES AND REGISTERS

• SUPPLY

Models:

61C and 61CD with One and Two-way Discharge Pattern

- Suffix '-O' adds a steel opposed blade damper



Model 61CD (Pattern 2A)

Models 61C and 61CD are supply grilles and registers which incorporate individually adjustable curved blades. The blades can be positioned to provide one-way, two-way and two-way corner blow discharge air patterns. They are commonly used in ceiling and/or side wall locations and are recommended for use in both heating and cooling applications.

Both one-way and two-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

FEATURES:

- Cost effective, corrosion-resistant steel construction.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

Concealed mounting is optional.

- Heavy gauge, roll-formed steel margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to

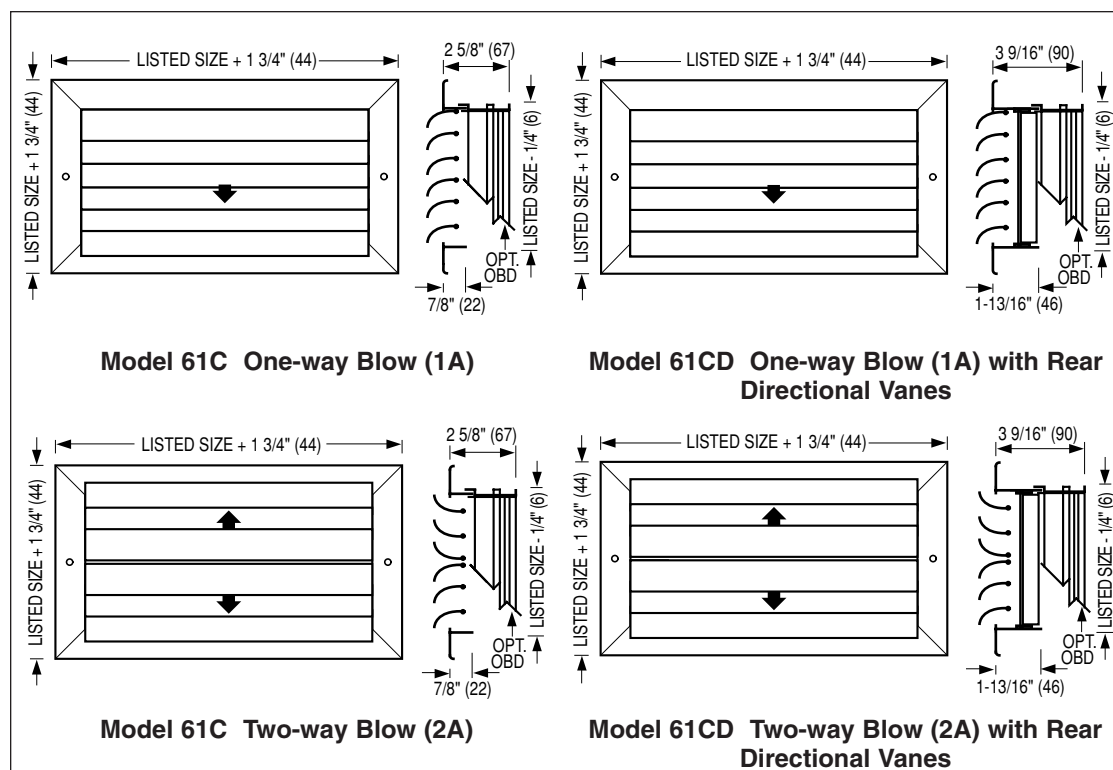
firmly hold deflection setting.

- Integral dampers – roll-formed steel blades. Opposed blade design with a screwdriver slot operator.
- Adjustable pattern – grille blades easily adjustable to provide horizontal one-way or two-way air path from a ceiling

location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.

- AW Appliance White baked enamel finish is standard. Other finishes are available.

- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).



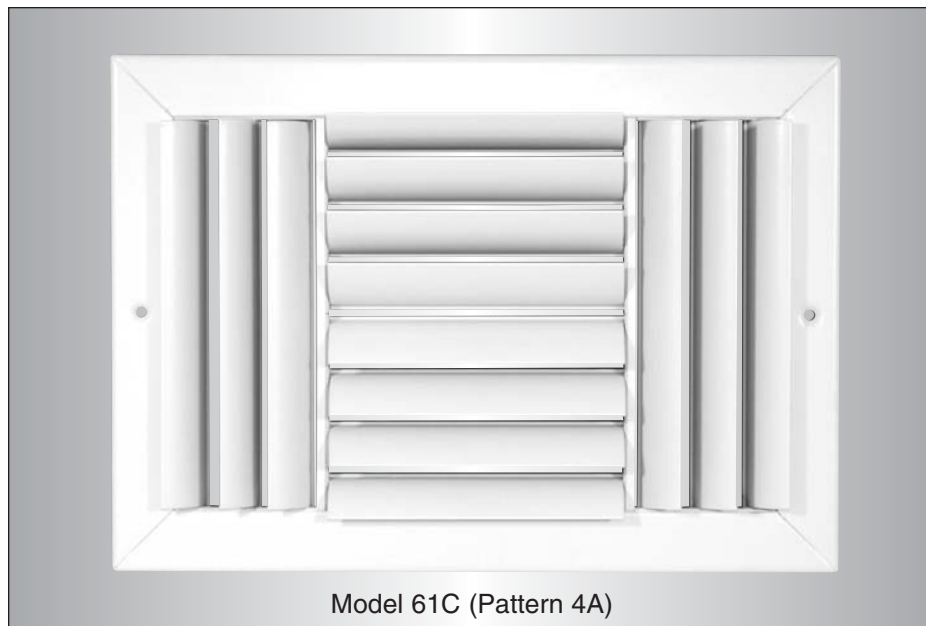
STEEL CURVED BLADE GRILLES AND REGISTERS

• SUPPLY

Model:

61C with Three and Four-way Discharge Pattern

- Suffix '-O' adds a steel opposed blade damper



Model 61C (Pattern 4A)

Model 61C Patterns 3A, 3B or 3C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a three-way ceiling air pattern. **Model 61C Patterns 4A, 4B or 4C Supply Ceiling Grilles and Registers** have individually adjustable curved blades arranged to provide a four-way ceiling air pattern. They are recommended for applications in ceiling locations for heating and cooling systems.

Both three-way and four-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

FEATURES:

- Cost effective, corrosion-resistant steel construction.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

Concealed mounting is optional.

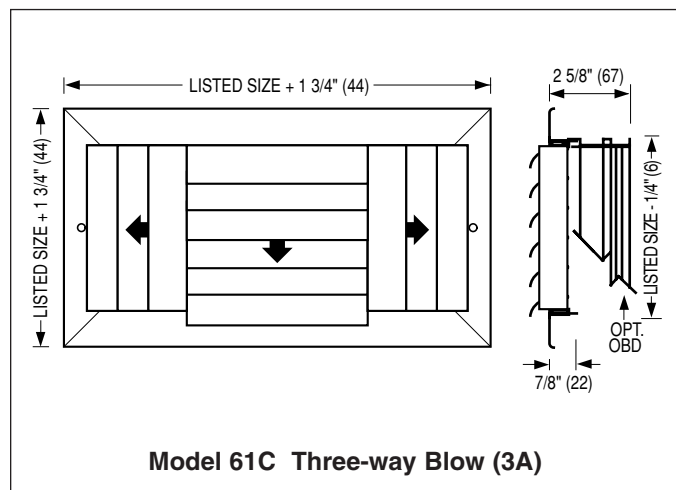
- Heavy gauge roll-formed steel margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers.

Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.

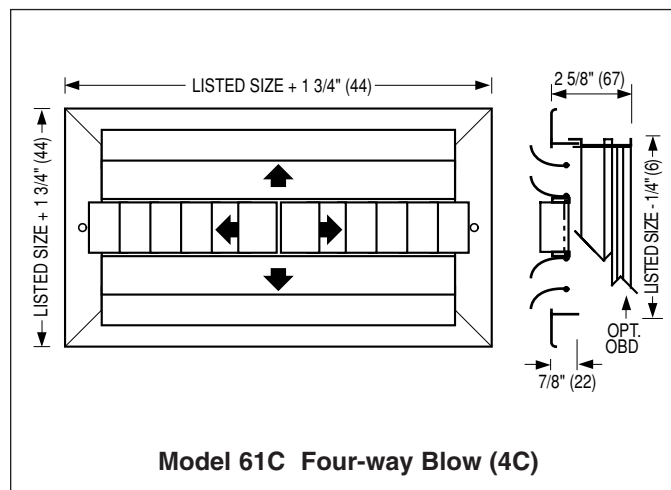
- Integral dampers – roll-formed steel blades. Opposed blade design with a screwdriver slot operator.
- Adjustable pattern – grille blades easily adjustable to provide horizontal three-way or four-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-

adjustable horizontal air path if specified.

- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).



Model 61C Three-way Blow (3A)



Model 61C Four-way Blow (4C)

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Curved Blade Grilles and Registers – Model Series 51C

MODEL 51C - O - 24 x 12 - S - AW - A - 4C - AB - —

- Aluminum Construction 51C
- Aluminum Construction with Rear Vanes 51CD

DAMPER (OBD)
- Steel (standard) O
- Aluminum OA
- No Damper —

WIDTH x HEIGHT
inches (mm) x inches (mm)

FRAME / BORDER TYPE

Surface Mount:
- Standard 1 1/4" (32) (default) S
- Narrow 1" (25) NF

AVAILABLE DISCHARGE PATTERNS

→ 1-WAY	 1A	 1B	
↕ 2-WAY	 2A	 2B	
↗ 2-WAY CORNER	 2C	 2D	
↗↖ 3-WAY	 3A	 3B	 3C
↗↖↕ 4-WAY	 4A	 4B	 4C

ACCESSORIES
- None (default) —
- Plaster Sub-frame PF
- Foam Gasket GK

FRONT BLADES
- Adjustable (default) AB
- Fixed FB

BLOW PATTERN
- 1-way long 1A
- 1-way short 1B
- 2-way long 2A
- 2-way short 2B
- 2-way corner 2C
- 2-way corner 2D
- 3-way short 3A
- 3-way long 3B
- 3-way long 3C
- 4-way long 4A
- 4-way equal 4B
- 4-way short 4C

FASTENING
- Screw Holes (default) A
- Concealed Mounting Straps C
- Concealed Screw Holes in Neck D
- None N

FINISH
- Appliance White (default) AW
- Aluminum AL
- Special Custom Color SP
- Satin (clear) Anodized SA

GRILLES AND REGISTERS

Note:

1. Model 51CD is only available with Blow Patterns 1-way and 2-way.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **51C** or **51CD (with rear vanes)** **Curved Blade Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The blades shall be aluminum, extruded into a streamlined curved shape, and assembled in a one, two, three or four-way pattern (specify pattern). The frames shall be heavy gauge extruded aluminum and mechanically interlocked for reinforcement, with hairline mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Steel Curved Blade Grilles and Registers – Model Series 61C

61C - O - 24 x 12 - S - AW - A - 4C - AB - —

MODEL

- Steel Construction 61C
- Steel Construction with Rear Vanes 61CD

DAMPER (OBD)

- Steel O
- No Damper —

WIDTH x HEIGHT

inches (mm) x inches (mm)

FRAME / BORDER TYPE

- Surface Mount (default) S

ACCESSORIES

- None (default) —
- Plaster Sub-frame PF
- Foam Gasket GK

FRONT BLADES

- Adjustable (default) AB
- Fixed FB

BLOW PATTERN

- 1-way long 1A
- 1-way short 1B
- 2-way long 2A
- 2-way short 2B
- 2-way corner 2C
- 2-way corner 2D
- 3-way short 3A
- 3-way long 3B
- 3-way long 3C
- 4-way long 4A
- 4-way equal 4B
- 4-way short 4C

FASTENING

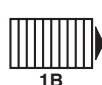
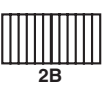
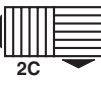
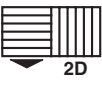
- Screw Holes (default) A
- Concealed Mounting Straps C
- Concealed Screw Holes in Neck D
- None N

FINISH

- Appliance White (default) AW
- Aluminum AL
- Special Custom Color SP

G

GRILLES AND REGISTERS

AVAILABLE DISCHARGE PATTERNS		
→ 1-WAY		
↕ 2-WAY		
↗↘ 2-WAY CORNER		
↕↔ 3-WAY		
↕↔↗↘ 4-WAY		
		

Note:

1. Model 61CD is only available with Blow Patterns 1-way and 2-way.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **61C** or **61CD (with rear vanes)** Curved Blade Supply Grilles of the type and size as shown on the plans and air distribution schedules. The blades shall be aluminum, extruded into a streamlined curved shape, and assembled in a one, two, three or four-way pattern (specify pattern). Frames shall be heavy gauge roll-formed steel and mechanically interlocked for reinforcement, with hairline mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Curved Blade • Supply Grilles and Registers • 51C and 61C Series

Models: 51C, 51CD

61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000
		TP	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
.12	6 x 4	CFM	10	25	35	50	60	70	85	95	110	120
		NC	—	—	—	14	20	23	27	30	33	36
		T 4-Way				5-7-11	5-8-13	7-10-16	8-12-18	9-13-20	10-15-23	11-16-25
		3-Way				5-7-12	9-6-14	7-11-16	8-12-19	10-14-22	10-16-24	12-17-27
		2-Way				5-8-13	7-10-16	8-12-18	9-14-21	10-16-24	12-17-27	13-18-30
.16	8 x 4	1-Way				7-10-16	8-12-18	10-14-22	11-16-26	12-18-29	14-20-33	15-22-36
		CFM	15	30	50	65	80	95	110	130	145	160
		NC	—	—	—	15	20	25	29	31	34	37
		T 4-Way			4-6-9	5-7-12	6-9-14	7-11-16	8-12-19	9-14-21	10-16-24	12-17-27
		3-Way			4-6-10	5-8-13	6-9-15	8-12-18	9-14-21	10-15-23	11-16-26	12-18-29
.20	10 x 4 6 x 6	2-Way			5-7-11	6-9-14	7-11-16	9-13-20	10-15-23	11-16-26	12-18-29	14-20-32
		1-Way			5-8-13	7-11-16	9-13-20	10-16-24	12-17-28	13-19-31	15-21-35	16-24-39
		CFM	20	40	60	80	100	120	140	160	180	200
		NC	—	—	—	15	21	26	29	32	35	38
		T 4-Way			4-6-9	5-8-13	6-9-15	8-11-17	9-13-20	10-15-23	11-16-26	12-17-28
.26	12 x 4 8 x 6	3-Way			4-6-10	6-9-14	7-10-16	8-12-19	10-14-22	11-16-25	12-17-28	13-19-31
		2-Way			5-7-11	6-9-15	8-11-17	9-13-20	10-15-23	11-16-26	13-18-30	14-20-33
		1-Way			5-7-12	7-10-16	8-12-19	10-15-23	11-16-26	13-18-30	14-20-33	16-23-37
		CFM	25	50	80	105	130	155	180	210	235	260
		NC	—	—	—	16	22	27	30	33	36	39
.30	14 x 4	T 4-Way		3-4-7	4-6-10	6-9-14	7-10-16	8-12-19	10-14-22	11-16-25	12-17-29	13-19-31
		3-Way		3-4-7	5-7-11	6-9-15	8-11-17	9-13-20	10-15-23	11-16-26	13-18-30	14-20-33
		2-Way		3-5-8	5-7-12	7-10-16	8-12-19	10-15-23	11-16-26	13-18-30	14-20-33	16-23-37
		1-Way		4-6-10	6-9-15	8-12-18	10-15-23	12-17-27	13-19-31	15-22-36	16-25-40	17-27-44
		CFM	30	60	90	120	150	180	210	240	270	300
.35	16 x 4 10 x 6 8 x 8	NC	—	—	—	17	22	27	31	34	37	40
		T 4-Way		3-4-7	5-7-11	6-9-15	8-11-17	9-13-20	10-16-24	12-17-27	13-18-30	14-20-33
		3-Way		3-5-8	5-7-12	6-9-15	8-12-18	10-14-22	11-16-25	14-18-29	14-20-32	15-22-36
		2-Way		4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-28	14-20-32	15-22-36	16-25-40
		1-Way		4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	17-24-39	17-26-43	19-30-48
.40	18 x 4 12 x 6	CFM	40	80	120	160	200	240	280	320	360	400
		NC	—	—	12	19	24	29	32	35	38	41
		T 4-Way		3-5-8	5-7-11	6-9-15	8-12-18	9-14-21	11-16-25	12-17-28	13-19-31	15-21-34
		3-Way		3-5-8	5-7-12	7-10-16	8-12-19	10-15-23	11-16-26	13-18-30	15-21-34	16-23-37
		2-Way		4-6-9	6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-25-41
.45	20 x 4 14 x 6 10 x 8	1-Way		5-7-11	7-10-16	9-14-21	11-16-25	13-18-30	15-21-35	16-23-38	18-28-45	20-31-49
		CFM	45	90	135	180	225	270	315	360	405	450
		NC	—	—	12	19	25	29	32	36	39	42
		T 4-Way		3-5-8	5-7-12	6-9-15	8-12-18	10-14-22	11-16-25	12-18-29	14-20-32	15-22-36
		3-Way		3-5-8	5-8-13	7-11-16	9-13-20	10-15-23	12-17-27	13-19-31	15-21-35	16-23-38
.55	24 x 4 16 x 6 12 x 8	2-Way		4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-18-30	15-21-34	16-23-38	17-26-43
		1-Way		5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-32-51
		CFM	55	110	165	220	275	330	385	440	495	550
		NC	—	—	13	20	25	29	33	37	39	42
		T 4-Way	2-3-4	3-5-8	5-7-12	7-10-16	8-12-19	10-15-23	12-17-27	13-18-30	15-22-34	16-23-38
		3-Way	2-3-5	4-6-9	5-8-13	8-11-17	9-14-21	11-16-25	12-18-29	14-20-32	16-23-37	16-25-40
		2-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-15-23	12-17-28	14-26-32	15-22-36	16-25-40	18-28-45
		1-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-28	14-20-33	16-23-38	17-26-43	20-3-49	22-34-54

CURVED BLADE GRILLES AND REGISTERS



Performance Data

Curved Blade • Supply Grilles and Registers • 51C and 61C Series

Models: 51C, 51CD

61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000
		TP	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
.62	18 x 6 10 x 10	CFM	60	125	185	250	310	370	435	495	560	620
		NC	—	—	12	20	26	30	34	37	40	43
		T 4-Way	2-3-4	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-27	13-19-21	15-21-35	16-24-39
		3-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-26	13-18-30	14-20-33	16-24-38	17-26-42
		2-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
.70	30 x 4 20 x 6 14 x 8 12 x 10	1-Way	2-4-6	5-7-12	8-11-17	10-15-27	12-18-29	15-21-24	17-25-40	18-28-45	20-31-49	23-35-55
		CFM	70	140	210	280	350	420	490	560	630	700
		NC	—	—	14	20	26	30	34	38	40	43
		T 4-Way	2-3-5	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-19-28	14-20-32	15-22-36	16-25-40
		3-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-19-31	15-21-35	16-24-39	17-26-43
.81	36 x 4 24 x 6 16 x 8 14 x 10	2-Way	2-4-6	5-7-11	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	17-24-39	17-26-43	19-30-48
		1-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-52	24-36-57
		CFM	80	160	245	325	405	485	565	650	730	810
		NC	—	—	15	21	27	31	35	38	41	44
		T 4-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-26-42
.87	18 x 8 12 x 12	3-Way	2-3-5	4-6-10	6-9-15	8-12-19	11-16-25	12-17-27	14-20-32	15-22-36	16-25-40	18-28-45
		2-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-25	13-18-30	15-21-35	17-25-40	18-28-45	20-31-49
		1-Way	3-4-7	5-8-13	8-12-18	11-16-25	13-19-31	16-23-37	17-26-43	19-30-48	22-33-53	25-38-60
		CFM	85	175	260	350	435	520	610	695	785	870
		NC	—	—	15	21	27	31	35	38	41	44
1.02	30 x 6 20 x 8 16 x 10 14 x 12	T 4-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-18-30	15-21-34	16-23-38	17-26-42
		3-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	19-28-46
		2-Way	2-4-6	5-7-12	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-31-51
		1-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-23-38	18-27-44	20-30-49	22-35-55	25-38-62
		CFM	100	205	305	410	510	610	715	815	920	1020
1.15	24 x 8 18 x 10 16 x 12	NC	—	—	15	22	28	32	36	39	42	45
		T 4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-15-23	12-17-27	13-19-31	15-21-35	16-25-40	18-27-44
		3-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-43	19-29-47
		2-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-42	19-30-48	22-33-53
		1-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-46-57	26-40-63
1.25	36 x 6 20 x 10 14 x 14	CFM	115	230	345	460	575	690	805	920	1040	1150
		NC	—	—	16	23	29	32	36	40	43	46
		T 4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	18-28-45
		3-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-25-40	18-27-44	20-30-49
		2-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-28	14-20-33	16-24-39	18-27-44	20-30-49	22-34-54
1.35	16 x 14 18 x 12	1-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-25-40	19-28-46	21-33-53	24-36-58	27-41-66
		CFM	125	250	375	500	625	750	875	1000	1120	1250
		NC	—	—	16	23	29	33	37	40	43	46
		T 4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
		3-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-26	13-19-31	15-22-36	16-25-40	18-28-45	20-31-49
1.53	30 x 8 24 x 10 20 x 12 18 x 14 16 x 16	2-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-18-29	15-21-34	16-25-40	18-28-45	20-31-49	23-35-55
		1-Way	3-5-8	6-9-15	9-14-21	12-17-28	15-21-34	17-25-40	19-29-47	22-33-53	25-38-60	28-42-67
		CFM	135	270	405	540	675	810	945	1080	1220	1350
		NC	—	—	16	23	29	33	37	40	43	46
		T 4-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-38	19-29-47
1.53	30 x 8 24 x 10 20 x 12 18 x 14 16 x 16	3-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-28	13-19-31	15-22-36	17-25-41	19-27-46	21-31-50
		2-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
		1-Way	3-5-8	6-9-15	10-14-22	12-17-28	15-21-35	17-26-42	20-30-49	22-34-54	25-38-61	28-43-68
		CFM	155	305	460	610	765	920	1070	1220	1380	1530
		NC	—	—	17	24	29	34	38	41	44	47
1.53	30 x 8 24 x 10 20 x 12 18 x 14 16 x 16	T 4-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-24-39	18-27-44	20-30-49
		3-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-43	19-30-48	21-33-52
		2-Way	3-4-7	5-8-13	8-12-18	10-16-24	13-19-31	15-22-36	17-26-42	19-29-46	22-33-53	24-36-58
		1-Way	3-5-8	7-10-16	10-14-22	12-18-29	15-22-36	17-26-43	20-31-49	23-35-49	26-40-63	29-45-71
		CFM	155	305	460	610	765	920	1070	1220	1380	1530

Performance Data

Curved Blade • Supply Grilles and Registers • 51C and 61C Series

Models: 51C, 51CD

61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000
		TP	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
1.82	36 x 8 30 x 10 24 x 12 20 x 14 18 x 16	CFM	182	365	545	730	910	1090	1270	1460	1640	1820
		NC	—	—	18	25	30	34	38	42	45	48
		T	4-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46
			3-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-17-28	15-21-34	16-24-39	18-27-44	20-31-49
			2-Way	3-4-7	6-9-14	8-12-19	11-16-26	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55
			1-Way	3-5-8	7-10-16	10-15-23	13-19-31	16-23-38	18-28-45	21-33-52	24-36-58	28-41-66
2.10	24 x 14 20 x 16 18 x 18	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100
		NC	—	—	19	25	30	35	39	42	45	48
		T	4-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-27	14-20-33	16-23-43	17-26-43	19-30-48
			3-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51
			2-Way	3-4-7	6-9-14	9-13-20	12-17-29	14-20-33	17-24-39	18-28-45	21-31-50	24-36-57
			1-Way	4-6-9	7-11-16	10-16-24	14-20-32	16-24-39	20-39-47	22-33-53	25-38-60	28-43-68
2.35	36 x 10 30 x 12 24 x 16 20 x 18	CFM	235	470	705	940	1180	1410	1640	1880	2120	2350
		NC	—	—	19	26	31	35	39	43	46	49
		T	4-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-17-28	15-21-34	16-24-39	18-27-44	20-30-49
			3-Way	3-4-7	5-8-13	8-12-19	10-16-24	13-18-30	15-22-36	17-26-42	19-30-48	22-33-53
			2-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-25-41	19-29-47	21-33-52	24-37-59
			1-Way	4-6-9	7-11-16	11-16-25	14-20-33	17-25-41	19-30-48	23-35-55	26-39-62	29-44-70
2.68	36 x 12 30 x 14 24 x 18 20 x 20	CFM	270	535	805	1070	1340	1610	1880	2140	2410	2680
		NC	—	—	19	26	31	36	40	43	46	48
		T	4-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-31-50
			3-Way	3-4-7	6-9-14	8-12-19	11-16-25	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55
			2-Way	3-5-8	6-9-15	9-14-21	12-17-28	15-21-35	19-29-47	21-34-54	25-38-60	27-43-68
			1-Way	4-6-9	8-11-17	11-16-26	15-21-34	17-26-42	20-31-49	24-36-57	27-40-64	30-46-73
3.15	36 x 14 30 x 16 24 x 20	CFM	315	630	945	1260	1580	1890	2200	2520	2840	3150
		NC	—	10	20	27	32	37	41	44	47	49
		T	4-Way	3-4-7	5-8-13	8-12-18	11-16-25	13-18-30	15-22-36	17-26-42	19-30-48	22-34-53
			3-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-37-57
			2-Way	3-5-8	7-10-16	10-15-23	12-18-29	16-23-37	18-27-44	20-31-49	23-35-56	26-41-63
			1-Way	4-6-10	8-12-18	12-17-27	15-20-37	18-27-44	21-32-51	25-38-60	28-42-67	32-49-77
3.65	36 x 16 30 x 18 24 x 24	CFM	365	730	1100	1460	1820	2190	2560	2920	3280	3650
		NC	—	10	20	28	33	37	41	45	48	50
		T	4-Way	3-4-7	6-9-14	8-12-19	11-16-26	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55
			3-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-25-41	19-29-47	22-33-53	24-37-59
			2-Way	3-5-8	7-10-16	10-15-23	13-19-31	16-23-38	18-28-45	21-33-52	24-36-58	27-41-66
			1-Way	4-6-10	8-12-19	12-17-28	15-22-36	18-28-45	22-33-53	26-39-62	29-44-70	33-50-80
4.05	36 x 18 30 x 20	CFM	405	810	1220	1620	2020	2430	2830	3240	3640	4050
		NC	—	11	21	28	33	38	42	45	48	50
		T	4-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-36-57
			3-Way	3-5-8	6-9-15	9-14-21	12-17-28	15-21-35	17-26-42	19-30-48	22-34-54	25-38-61
			2-Way	4-6-9	7-11-16	10-15-24	13-19-31	16-24-39	19-28-46	22-33-53	25-38-60	28-43-68
			1-Way	4-6-10	8-12-19	12-18-29	16-23-38	19-28-46	23-35-55	27-40-64	30-45-72	34-50-81
4.72	36 x 20 30 x 24	CFM	470	945	1420	1890	2360	2830	3300	3780	4250	4720
		NC	—	12	21	30	34	38	42	46	48	51
		T	4-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-26-41	19-29-47	21-33-52	24-37-59
			3-Way	3-5-8	7-10-16	10-14-23	12-18-29	16-23-37	18-27-44	21-31-50	23-35-56	27-40-64
			2-Way	4-6-9	7-11-16	11-16-25	14-20-33	17-25-41	19-30-48	23-35-55	26-39-62	29-45-71
			1-Way	5-7-11	9-13-20	13-18-30	16-24-39	19-30-48	24-36-57	27-41-66	31-48-76	36-53-85
5.82	36 x 24 30 x 30	CFM	580	1160	1750	2330	2910	3490	4070	4660	5240	5820
		NC	—	12	22	29	35	39	43	47	49	52
		T	4-Way	3-5-8	6-9-15	10-14-22	12-18-29	15-22-36	17-26-43	20-31-49	23-35-56	26-39-62
			3-Way	4-6-9	7-10-16	10-16-24	13-19-31	16-24-39	19-28-46	22-33-53	24-37-59	28-43-68
			2-Way	4-6-9	8-11-17	11-16-26	15-21-34	17-26-43	21-31-50	24-36-58	27-41-66	31-47-75
			1-Way	5-7-11	9-14-21	13-19-31	11-25-41	21-31-50	25-38-60	28-44-70	33-49-80	38-56-90

Performance Data

Curved Blade • Supply Grilles and Registers • 51C and 61C Series

Models: 51C, 51CD

61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000	
		TP	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369	
7.17	36 x 30	CFM	715	1430	2150	2870	3580	4300	5020	5740	6450	7170	
		NC	—	14	23	29	35	40	44	48	50	53	
		T	4-Way	3-5-8	7-10-16	10-15-23	13-19-31	16-22-38	18-28-45	21-33-52	24-36-58	27-41-66	31-47-74
			3-Way	4-6-9	7-11-16	11-16-25	14-20-33	17-25-41	20-30-49	23-35-55	26-40-63	29-45-71	33-49-80
			2-Way	4-6-10	8-12-19	12-17-28	15-22-36	18-28-45	22-33-53	26-39-62	29-44-70	33-49-80	37-55-89
			1-Way	5-7-12	10-14-22	14-20-33	17-26-43	22-33-53	27-40-64	31-47-75	35-52-84	40-59-95	45-67-107
8.63	36 x 36	CFM	865	1730	2590	3450	4320	5180	6040	6900	7700	8630	
		NC	—	14	24	30	36	41	45	48	50	53	
		T	4-Way	4-6-9	7-11-16	10-16-24	14-20-32	16-25-40	19-30-48	22-34-54	26-39-62	29-43-69	32-49-78
			3-Way	4-6-10	8-11-17	11-16-26	15-21-34	17-28-43	21-31-50	24-36-58	27-41-66	31-47-75	35-52-85
			2-Way	4-6-10	8-12-19	12-18-29	16-23-38	19-30-47	23-35-56	27-41-65	31-47-66	35-52-83	39-59-93
			1-Way	5-8-13	10-15-23	15-21-35	18-28-45	23-35-57	28-43-68	32-49-78	37-55-88	42-62-100	47-70-113

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. Throw values are given for terminal velocities of 150, 100 and 50 fpm, with a cooling temperature differential (ΔT) of 20°F and are based on surface mount units benefiting from the ceiling coanda effect. The blade settings were set for optimum discharge, parallel to the face of the grille, which has the outer blades closest to the frame, set with an opening of 1/8" (3) and progressively wider spacings between blades away from the frame. (**Note:** The throw values may be increased or decreased by as much as 20% by changing the blade setting).
2. Blades in the full open position
 - reduce the NC by 6.
 - multiply the total pressure x 0.3.
3. The NC values are based on a room absorption of 10 dB, re 10⁻¹² watts.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

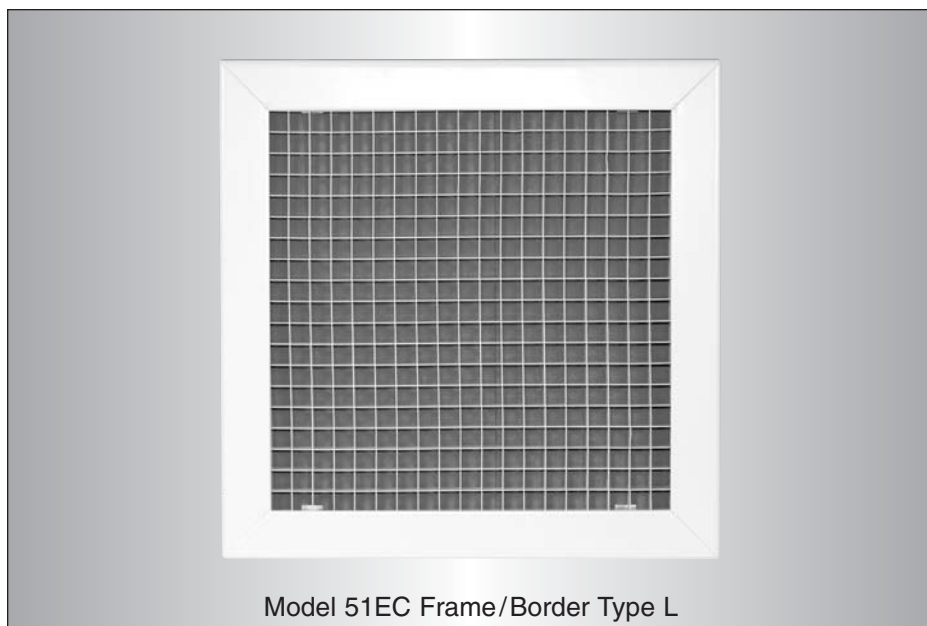
ALUMINUM EGGCRATE
GRILLES AND REGISTERS

• EXHAUST AND RETURN

Model:

51EC

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51EC Frame/Border Type L

Model 51EC Grilles and Registers have grid cores capable of transferring or returning high air volumes at minimum pressure requirements. They match in appearance the grid louvers on parabolic light fixtures and are available to suit both lay-in T-Bar openings in suspended grid ceilings and overlap openings in hard ceilings and walls.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws. Available with optional opposed blade damper.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish. Available with optional opposed blade damper.

Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame – This style has a narrow corrosion-resistant steel frame that surrounds the eggcrate core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. The angle frame provides a finished edge to the eggcrate core which may be desirable if it is to be handled on a frequent basis. It also permits the attachment of an optional opposed blade damper.

Frame/Border Type C Lay-in T-Bar, Core Only – The most cost effective return air grille for T-Bar ceilings. The ceiling grid conceals the raw edges of the eggcrate when installed. Suitable for use only in non-ducted plenum return air applications. This model is not available with a damper.

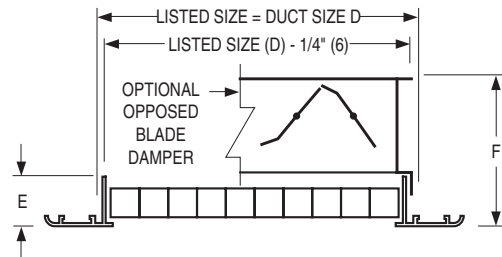
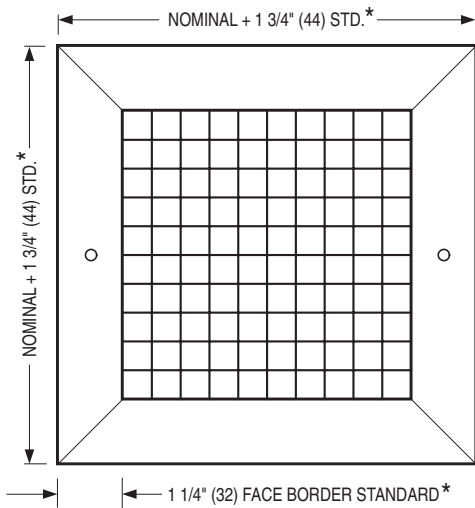
Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G175 in the Options and Accessories section for further information.

FEATURES:

- Frame/border Type S has a 1 1/4" (32) face border with a 1" (25) overlap margin, furnished with countersunk screw holes and mounting screws. Type NF Narrow frame with 1" (25) face border optional. Concealed mounting is optional.
- Aluminum construction – heavy gauge extruded aluminum frames mechanically interlocked with reinforced mitered corners.
- Grid cores are aluminum. Standard core size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with mechanically locked-in margins, or available as core only. Optional core sizes are 1/2" x 1/2" x 1" (13 x 13 x 25) and 1" x 1" x 1" (25 x 25 x 25).
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in most models.

Dimensional Data

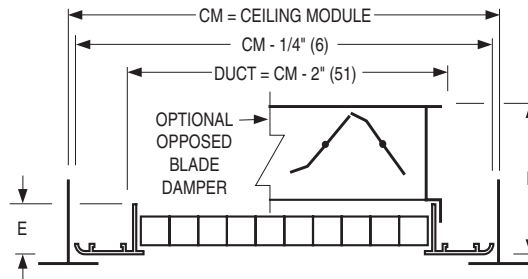
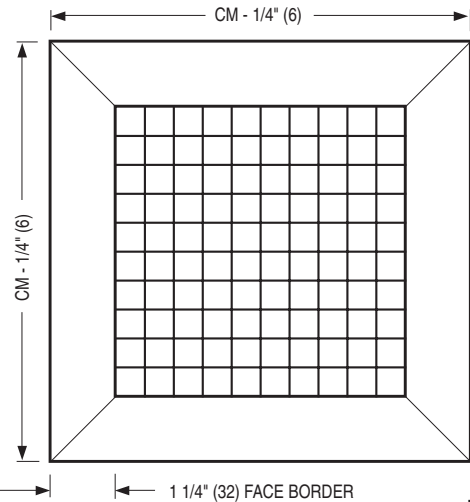
51EC Series Eggcrate Return and Exhaust



DIMENSION	STANDARD FRAME WITH 1/2 x 1/2 x 1/2 STD. CORE	OPTIONAL NF FRAME AND/OR OPTIONAL CORE
E	7/8\" (22)	1 1/4\" (32)
F	2 5/8\" (67)	3\" (76)

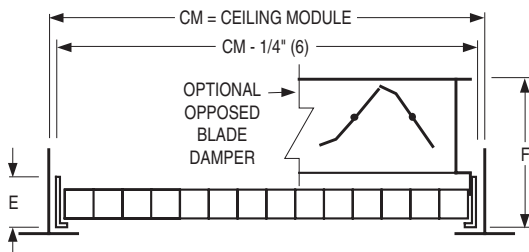
* Optional Type NF Narrow frame with 1\" (25) face border and a 3/4\" (19) overlap margin. O.A. flange to flange dim. = listed size + 1 1/4\" (32).

Frame/Border Type S – Surface Mount



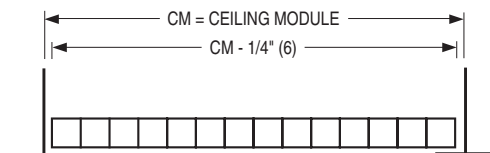
DIMENSION	STANDARD FRAME WITH 1/2 x 1/2 x 1/2 STD. CORE	WITH 1/2 x 1/2 x 1 OR 1 x 1 x 1 OPTIONAL CORE
E	7/8\" (22)	1 1/4\" (32)
F	2 5/8\" (67)	3\" (76)

Frame/Border Type L – Lay-in



DIMENSION	STANDARD FRAME WITH 1/2 x 1/2 x 1/2 STD. CORE	WITH 1/2 x 1/2 x 1 OR 1 x 1 x 1 OPTIONAL CORE
E	7/8\" (22)	1 1/4\" (32)
F	2 5/8\" (67)	3\" (76)

Frame/Border Type A – Concealed Angle Frame



Frame/Border Type C – Core Only

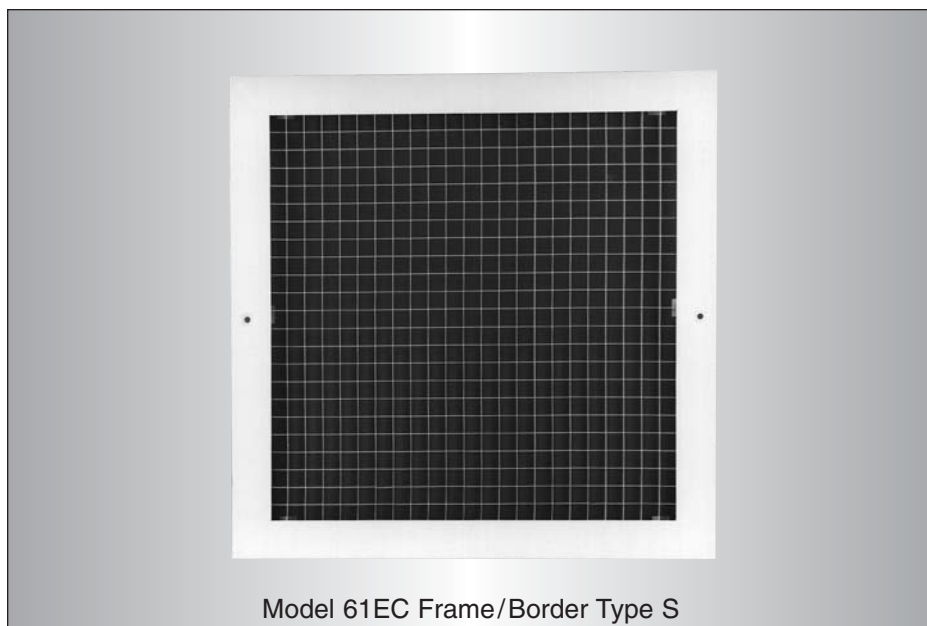
STEEL FRAME EGGCRATE GRILLES AND REGISTERS

• EXHAUST AND RETURN

Model:

61EC

- Suffix '-O' adds a steel opposed blade damper



Model 61EC Frame/Border Type S

Model 61EC Grilles and Registers have grid cores capable of transferring or returning high air volumes at minimum pressure requirements. They match in appearance the grid louvers on parabolic light fixtures and are available to suit both lay-in T-Bar openings in suspended grid ceilings and overlap openings in hard ceilings and walls.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws. Available with optional opposed blade damper.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish. Available with optional opposed blade damper.

Frame/Border Type F Narrow Regressed T-Bar – This style has been specially designed for return air applications to integrate with and compliment "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

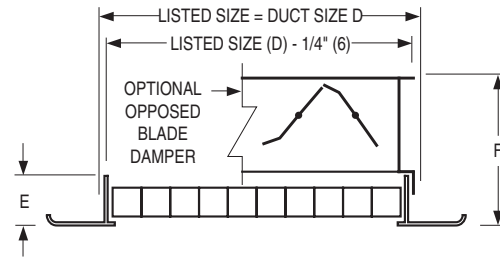
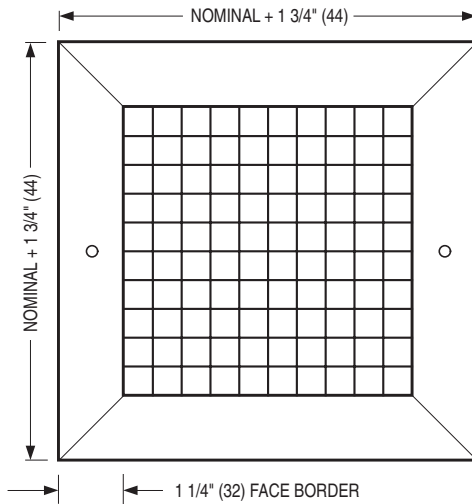
Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G175 in the Options and Accessories section for further information.

FEATURES:

- Cost effective, corrosion-resistant steel is used for the frame.
- Frame/border Type S has a 1 1/4" (32) face border with a 1" (25) overlap margin, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Heavy gauge, roll-formed frames mechanically interlocked with reinforced mitered corners.
- Grid cores are aluminum. Standard core size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with mechanically locked-in margins. Optional core sizes are 1/2" x 1/2" x 1" (13 x 13 x 25) and 1" x 1" x 1" (25 x 25 x 25).
- Integral dampers – roll-formed steel blades. Opposed blade design with a screwdriver slot operator.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in most models.

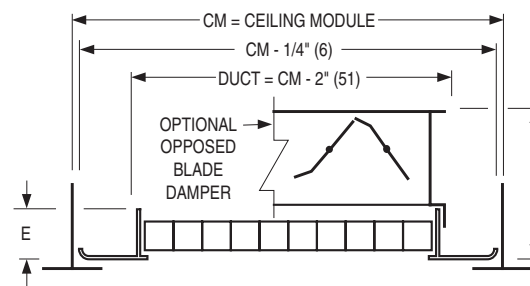
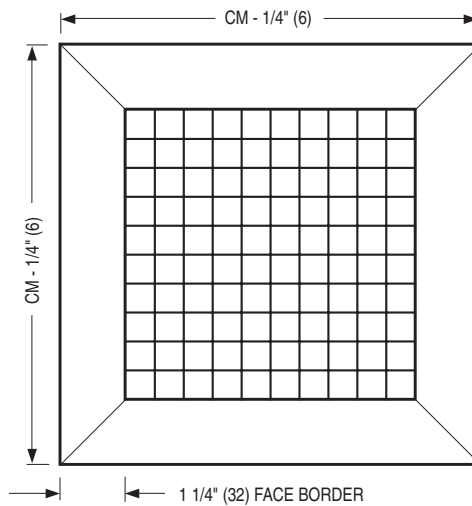
Dimensional Data

61EC Series Eggcrate Return and Exhaust



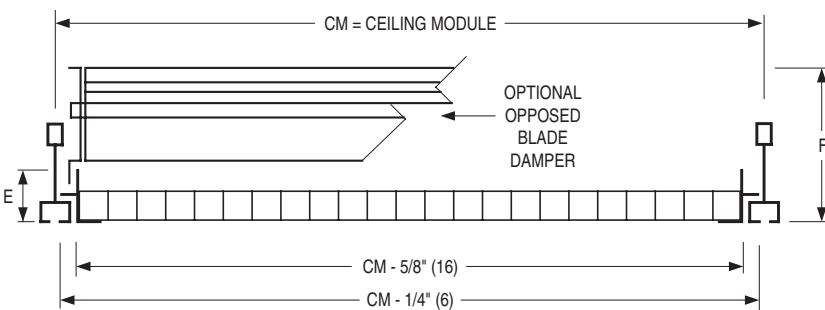
DIMENSION	STANDARD FRAME WITH 1/2 x 1/2 x 1/2 STD. CORE	WITH 1/2 x 1/2 x 1 OR 1 x 1 x 1 OPTIONAL CORE
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

Frame/Border Type S – Surface Mount

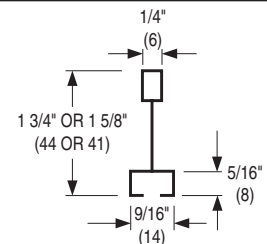


DIMENSION	STANDARD FRAME WITH 1/2 x 1/2 x 1/2 STD. CORE	WITH 1/2 x 1/2 x 1 OR 1 x 1 x 1 OPTIONAL CORE
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

Frame/Border Type L – Lay-in



**Narrow
Regressed
T-Bar
Detail**



DIM.	STANDARD FRAME WITH 1/2 x 1/2 x 1/2 STD. CORE	WITH 1/2 x 1/2 x 1 OR 1 x 1 x 1 OPTIONAL CORE
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

Frame/Border Type F – Narrow Regressed T-Bar

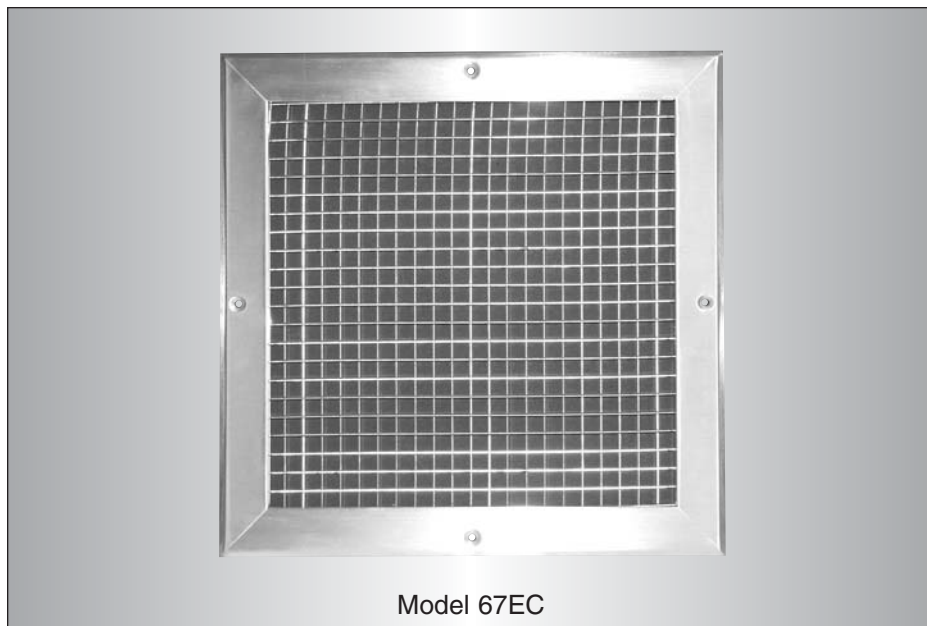
STAINLESS STEEL EGGCRATE GRILLES AND REGISTERS

• EXHAUST AND RETURN

Model:

67EC

- Suffix '-O' adds a stainless steel opposed blade damper



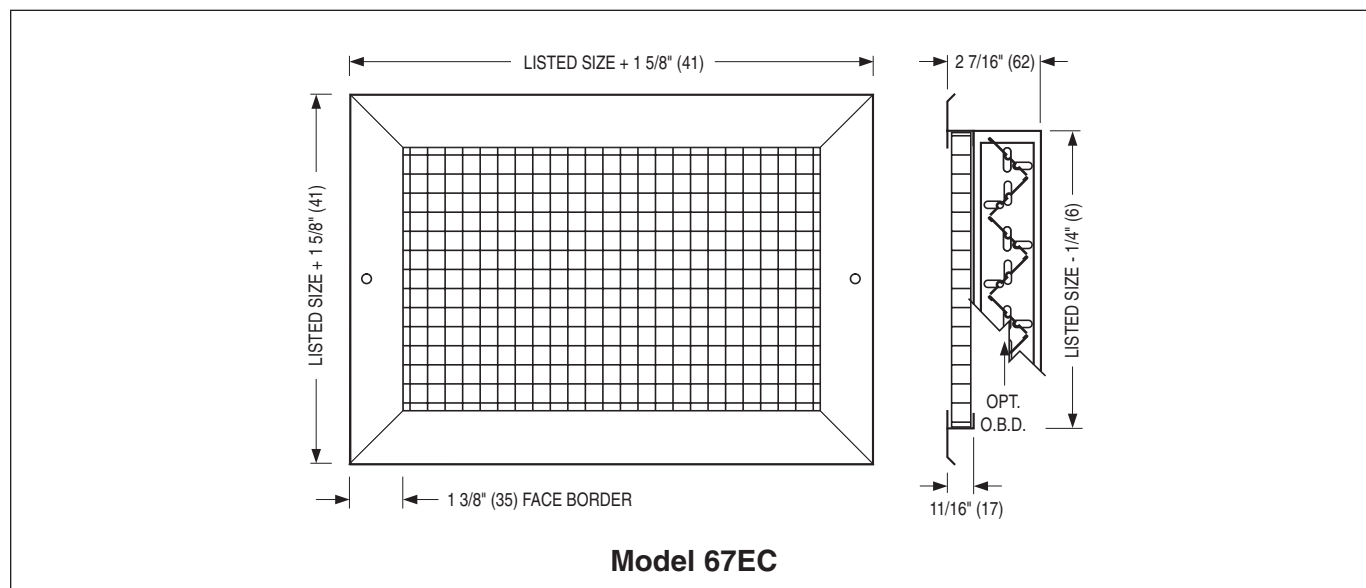
Model 67EC

The **Nailor Model Series 67EC Eggcrate Return and Exhaust Grilles and Registers** have grid cores that are capable of transferring or returning high air volumes at minimum pressure requirements. The stainless steel grid core is 1/2" x 1/2" x 1/2" (13 x 13 x 13) and the appearance matches the grid louvers on parabolic light fixtures.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, cleanrooms, laboratories, industrial and manufacturing facilities.

FEATURES:

- Type 304 stainless steel construction.
- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Grid core is 1/2" x 1/2" x 1/2" (13 x 13 x 13)
- #3 Satin polished finish is standard. AW Appliance White baked enamel finish is optional. Other finishes are available.
- Optional dampers – roll formed stainless steel, opposed blade design with a screwdriver operator.
- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914)
- Type 316 stainless steel construction available as an option.



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Eggcrate Return and Exhaust Grilles and Registers – Model Series 51EC

51EC - O - 24 x 12 - S - OO - AW - A - CA - —

MODEL

- Aluminum

51EC

DAMPER (OBD)

- Steel (standard)

O

- Aluminum

OA

- No Damper

—

WIDTH x HEIGHT

inches (mm) x inches (mm)

For Type S, NF, PL, SP, MP, FP and TP, W x H = Duct Size

For Type L, A and C, W x H = Ceiling Module Size

FRAME/BORDER TYPE

Surface Mount:

- Standard 1 1/4" (32) (default)

S

- Narrow 1" (25)

NF

Ceiling Grid:

- Lay-in T-Bar *

L

- Angle Frame

A

- Core Only

C

Panel Mount: **

Steel

Aluminum

- Lay-in T-Bar

PLS

or

PLA

- Spline

SPS

or

SPA

- Metal Pan

MPS

or

MPA

- Fineline® Type

FPS

or

FPA

- Tegular

TPS

or

TPA

ACCESSORIES

- None (default)

—

- Plaster Sub-frame

PF

- Earthquake Tabs

EQT

CORE STYLE

- 1/2 x 1/2 x 1/2 (default)

CA

- 1/2 x 1/2 x 1

CB

- 1 x 1 x 1

CC

FASTENING

(only for frame / border types S, NF)

- Screw Holes (default)

A

- Concealed Mounting Straps

C

- None

N

FINISH

- Appliance White (default)

AW

- Aluminum

AL

- Special Custom Color

SP

- Satin (clear) Anodized ***

SA

CEILING MODULE SIZE

(Use only for panel mounting, frame / border types PL, SP, MP, FP, TP)

- None (default)

OO

Imperial:

12 x 12, 24 x 12, 36 x 12,

48 x 12, 20 x 20, 24 x 24,

36 x 24, 48 x 24

Metric:

300 x 300, 600 x 300, 900 x 300,

1200 x 300, 500 x 500, 600 x 600,

900 x 600, 1200 x 600

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum register, eggcrate core, surface mount with damper, is Model 51EC-O. Unit will be supplied with a 1/2" x 1/2" x 1/2" (13 x 13 x 13) gridcore, screw holes and AW Appliance White baked enamel finish.
- * For Type L Lay-in, grille neck size is ceiling module size - 2" (51).
** For Panel mounting, maximum grille neck size is ceiling module size - 3" (76).
Refer to Options and Accessories Page No. G175 for dimensional data.
*** Satin anodized finish only available for Frame/Border Types S, NF and L (frame only, mill core).

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 51EC Eggcrate Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and an extruded aluminum frame that has reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Steel Frame Eggcrate Return and Exhaust Grilles and Registers – Model Series 61EC

MODEL _____		61EC - O - 24 x 12 - S - OO - AW - A - CA - —		
- Steel Frame	61EC			
DAMPER (OBD) _____				
- Steel (standard)	O			
- No Damper	—			
WIDTH x HEIGHT _____				
inches (mm) x inches (mm)				
For Type S, PL, SP, MP, FP and TP, W x H = Duct Size				
For Type L and F, W x H = Ceiling Module Size				
FRAME / BORDER TYPE _____				
- Surface Mount (default)	S			
Ceiling Grid:				
- Lay-in T-Bar *	L			
- Finline®	F			
Panel Mount: **		Steel		
- Lay-in T-Bar	PLS			
- Spline	SPS			
- Metal Pan	MPS			
- Finline® Type	FPS			
- Tegular	TPS			
			ACCESSORIES	
			- None (default)	—
			- Plaster Sub-frame	PF
			- Earthquake Tabs	EQT
			CORE STYLE	
			- 1/2 x 1/2 x 1/2 (default)	CA
			- 1/2 x 1/2 x 1	CB
			- 1 x 1 x 1	CC
			FASTENING	
			(only for frame / border type S)	
			- Screw Holes (default)	A
			- Concealed Mounting Straps	C
			- None	N
			FINISH	
			- Appliance White (default)	AW
			- Aluminum	AL
			- Special Custom Color	SP
			CEILING MODULE SIZE	
			(Use only for panel mounting, frame / border types PL, SP, MP, FP, TP)	
			- None (default)	OO
			Imperial:	
			12 x 12, 24 x 12, 36 x 12,	
			48 x 12, 20 x 20, 24 x 24,	
			36 x 24, 48 x 24	
			Metric:	
			300 x 300, 600 x 300, 900 x 300,	
			1200 x 300, 500 x 500, 600 x 600,	
			900 x 600, 1200 x 600	

G

GRILLES AND REGISTERS

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel register, eggcrate core, surface mount with damper, is Model 61EC-O. Unit will be supplied with a 1/2" x 1/2" x 1/2" (13 x 13 x 13) gridcore, screw holes and AW Appliance White baked enamel finish.
- * For Type L Lay-in, grille neck size is ceiling module size - 2" (51).
** For Panel mounting, maximum grille neck size is ceiling module size - 3" (76). Refer to Options and Accessories Page No. G175 for dimensional data.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 61EC Eggcrate Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and a corrosion-resistant steel frame that has reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

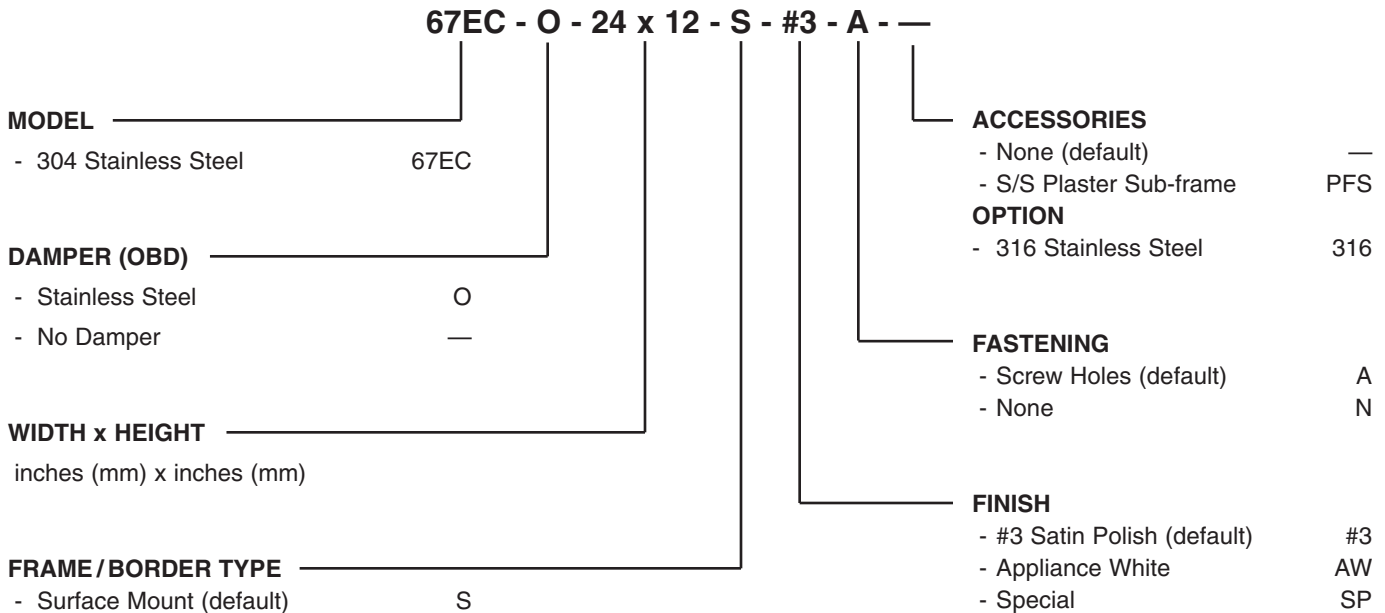
HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Stainless Steel Eggcrate Return and Exhaust Grilles and Registers – Model Series 67EC

GRILLES AND REGISTERS

G



Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a stainless steel register, eggcrate core, and stainless steel damper, is Model 67EC-O. Unit will be supplied with screw holes and #3 satin polished finish.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 67EC Eggcrate Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional). The grid core shall be 1/2" x 1/2" x 1/2" (13 x 13 x 13). The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #3 satin polished finish.

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Eggcrate Return and Exhaust Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51EC, 61EC, 67EC

51FE, 61FE

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	300 .006 .011	400 .010 .019	500 .016 .030	600 .022 .043	700 .031 .059	800 .040 .078	900 .051 .098	1000 .062 .120	1200 .090 .173	1400 .122 .236
6 x 6	8 x 4 10 x 4	0.20	0.25	CFM NC	60 —	80 —	100 —	120 13	140 18	160 22	180 27	200 30	240 36	280 41
8 x 6	10 x 5 12 x 4	0.27	0.33	CFM NC	81 —	108 —	135 —	162 14	189 19	216 24	243 28	270 31	324 37	378 42
10 x 6	12 x 5 16 x 4	0.35	0.41	CFM NC	105 —	140 —	175 —	210 15	245 21	280 25	315 29	350 32	420 38	490 43
8 x 8	14 x 5	0.38	0.44	CFM NC	114 —	152 —	190 —	228 16	266 22	304 25	342 30	380 33	456 39	532 44
12 x 6	18 x 4	0.42	0.50	CFM NC	126 —	168 —	210 10	252 16	294 22	336 26	378 30	420 33	504 39	588 44
12 x 8	16 x 6 24 x 4	0.58	0.66	CFM NC	174 —	232 —	290 11	348 18	406 24	464 27	522 31	580 34	696 40	812 45
10 x 10	14 x 7 26 x 4	0.61	0.69	CFM NC	183 —	244 —	305 12	366 18	427 24	488 27	549 32	610 35	732 41	854 46
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.74	CFM NC	195 —	260 —	325 12	390 18	455 24	520 28	585 32	650 35	780 41	910 46
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.82	CFM NC	222 —	296 —	370 13	444 19	518 25	592 28	666 32	740 36	888 42	1036 47
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.99	CFM NC	270 —	360 —	450 14	540 20	630 25	720 29	810 33	900 37	1080 43	1260 48
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.35	CFM NC	372 —	496 —	620 15	744 21	868 26	992 30	1116 34	1240 38	1488 44	1736 49
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.49	CFM NC	411 —	548 —	685 16	822 21	959 27	1096 31	1233 34	1370 38	1644 44	1918 49
24 x 10	20 x 12 30 x 8	1.52	1.65	CFM NC	456 —	608 —	760 16	912 22	1064 27	1216 31	1368 35	1520 39	1824 45	2128 50
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.76	CFM NC	492 —	656 —	820 16	984 22	1148 27	1312 31	1476 35	1640 39	1968 45	2296 50
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.98	CFM NC	555 —	740 —	925 16	1110 22	1295 27	1480 31	1665 35	1850 39	2220 45	2590 50
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.23	CFM NC	630 —	840 —	1050 16	1260 22	1470 27	1680 32	1890 35	2100 39	2520 45	2940 50
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.48	CFM NC	696 —	928 —	1160 16	1392 23	1624 27	1856 33	2088 36	2320 40	2784 46	3248 51
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.75	CFM NC	783 —	1044 —	1305 17	1566 23	1827 27	2088 33	2349 36	2610 40	3132 46	3654 51
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.33	CFM NC	951 —	1268 —	1585 17	1902 24	2219 28	2536 33	2853 37	3170 41	3804 47	4438 52
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.71	CFM NC	1062 —	1416 —	1770 18	2124 24	2478 29	2832 33	3186 37	3540 41	4248 47	4956 52
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.96	CFM NC	1137 —	1516 11	1895 18	2274 25	2653 30	3032 34	3411 38	3790 42	4548 48	5306 53
36 x 18	32 x 20 46 x 14 40 x 16	4.29	4.46	CFM NC	1287 —	1716 11	2145 18	2574 25	3003 30	3432 34	3861 38	4290 42	5148 48	6006 53
26 x 26	28 x 24 48 x 14	4.47	4.65	CFM NC	1341 —	1788 12	2235 19	2682 26	3129 31	3576 35	4023 39	4470 43	5364 49	6258 54
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.95	CFM NC	1431 —	1908 12	2385 20	2862 26	3339 31	3816 35	4293 39	4770 43	5724 49	6678 54
28 x 28	30 x 26 40 x 20 36 x 22	5.20	5.39	CFM NC	1560 —	2080 13	2600 20	3120 26	3640 31	4160 36	4680 39	5200 43	6240 49	7280 54
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.94	CFM NC	1722 —	2296 13	2870 21	3444 27	4018 32	4592 36	5166 40	5740 43	6888 50	8036 55
30 x 30	34 x 26 48 x 20 38 x 24	5.99	6.19	CFM NC	1797 —	2396 14	2995 21	3594 27	4193 32	4792 36	5391 40	5990 44	7188 50	8386 55

Performance Data

Eggcrate Return and Exhaust Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51EC, 61EC, 67EC

51FE, 61FE

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	300 .006 .011	400 .010 .019	500 .016 .030	600 .022 .043	700 .031 .059	800 .040 .078	900 .051 .098	1000 .062 .120	1200 .090 .173	1400 .122 .236
32 x 32	36 x 30 46 x 22 38 x 28	6.84	7.04	CFM NC	2052 —	2736 14	3420 22	4104 27	4788 33	5472 37	6156 41	6840 44	8208 50	9576 55
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.92	CFM NC	2307 —	3076 15	3845 23	4614 28	5383 33	6152 37	6921 42	7690 45	9228 51	10766 56
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.91	CFM NC	2607 —	3476 15	4345 23	5214 29	6083 34	6952 38	7821 42	8690 45	10428 51	12166 56
38 x 38	42 x 34 48 x 30 44 x 36	9.70	9.93	CFM NC	2910 —	3880 16	4850 23	5820 29	6790 34	7760 38	8730 43	9700 46	11640 52	13580 57
40 x 40	42 x 36 48 x 32 46 x 34	10.77	11.00	CFM NC	3231 —	4308 16	5385 23	6462 29	7539 35	8616 39	9693 44	10770 47	12924 53	15078 58
42 x 42	44 x 40 48 x 36 46 x 38	11.89	12.13	CFM NC	3567 —	4756 17	5945 24	7134 30	8323 35	9512 39	10701 44	11890 47	14268 53	16646 58
44 x 44	46 x 42	13.07	13.31	CFM NC	3921 —	5228 17	6535 24	7842 30	9149 35	10456 40	11763 44	13070 47	15684 53	18298 58
46 x 46		14.30	14.55	CFM NC	4290 10	5720 18	7150 25	8580 31	10010 36	11440 40	12870 44	14300 47	17160 53	20020 59
48 x 48		15.59	15.84	CFM NC	4677 10	6236 18	7795 25	9354 31	10913 36	12472 40	14031 44	15590 47	18708 53	21826 59

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

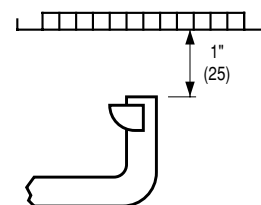
1. Grille tested without damper. Apply the following corrections for addition of opposed blade damper to grille:

Neg. SP Listed Value x 1.10.

NC Add 5 dB to listed value.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

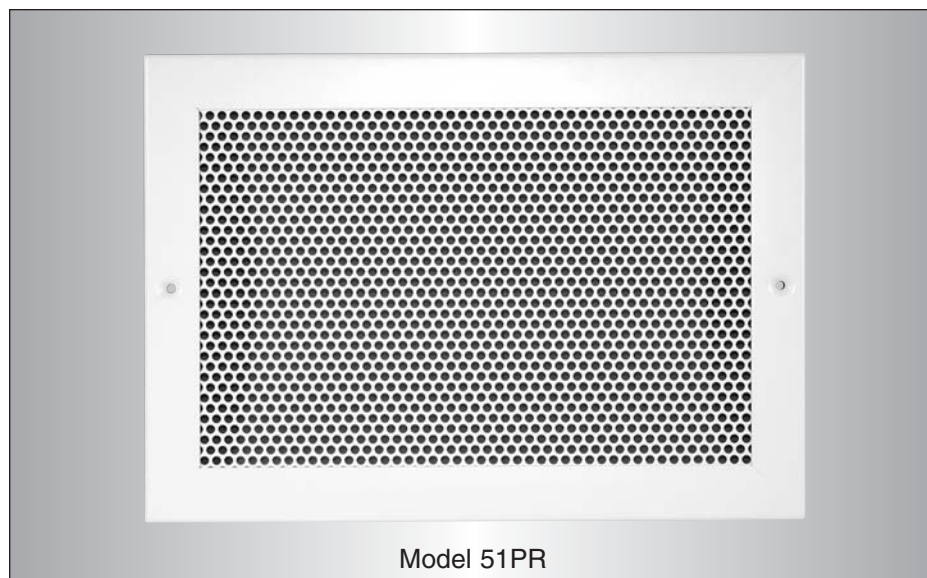
PERFORATED RETURN GRILLES AND REGISTERS

Models:

51PR Aluminum

61PR Steel

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper (available on Model 51PR only)



The Nailor Model Series 51PR and 61PR Perforated Return Grilles and Registers are medium capacity return or exhaust outlets. The perforated cores have 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Their design is clean and unobtrusive, providing the uncluttered appearance preferred by many architects and a face that is easy to maintain and clean. Their general appearance matches and compliments the popular perforated supply diffusers (refer to the range of **4300 Series** in the diffuser section of the catalog).

Models are available to suit both lay-in T-Bar openings in suspended ceiling systems and overlap openings in hard walls and ceilings.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

Frame/Border Type L Lay-in T-Bar – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

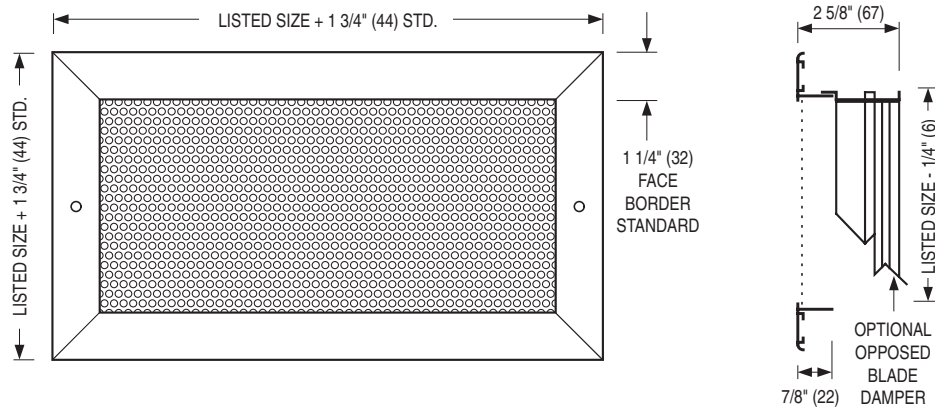
Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number G175 in the Options and Accessories section for further information.

FEATURES:

- Available in all aluminum construction with extruded frames or cost effective, corrosion-resistant steel with roll-formed frames.
- Frame/border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin as standard, furnished with countersunk screw holes and mounting screws. NF Narrow frame with 1" (25) face border is optional on Model 51PR.
- Frames are staked and mechanically interlocked to provide reinforced mitered corners.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219).

Dimensional Data

51PR/61PR Series Perforated Return

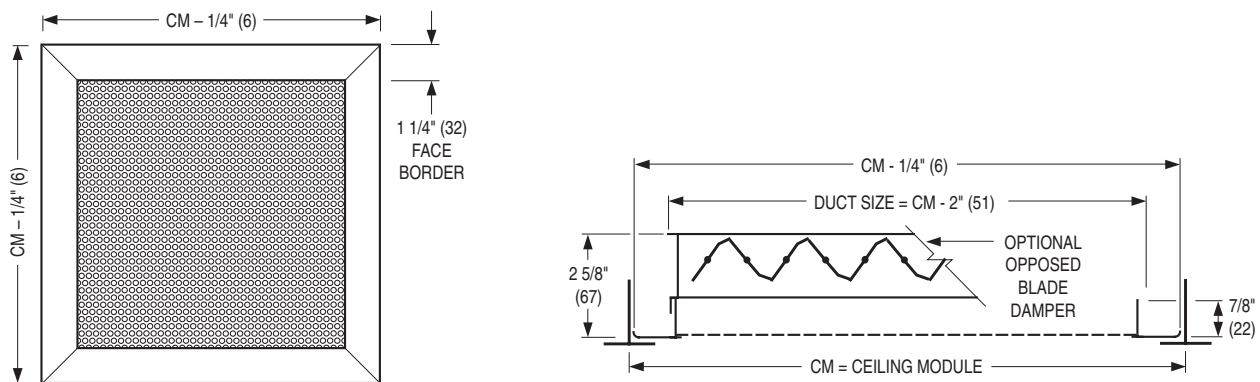


Model 51PR

Model 51PR

Note: Model 51PR is available with an optional Type NF Frame. It has a 3/4" (19) overlap margin.
Overall flange to flange dimensions = listed size + 1 1/4" (32).

Frame/Border Type S – Surface Mount



Model 61PR

Model 61PR

Frame/Border Type L – Lay-in T-Bar

G

GRILLES AND REGISTERS

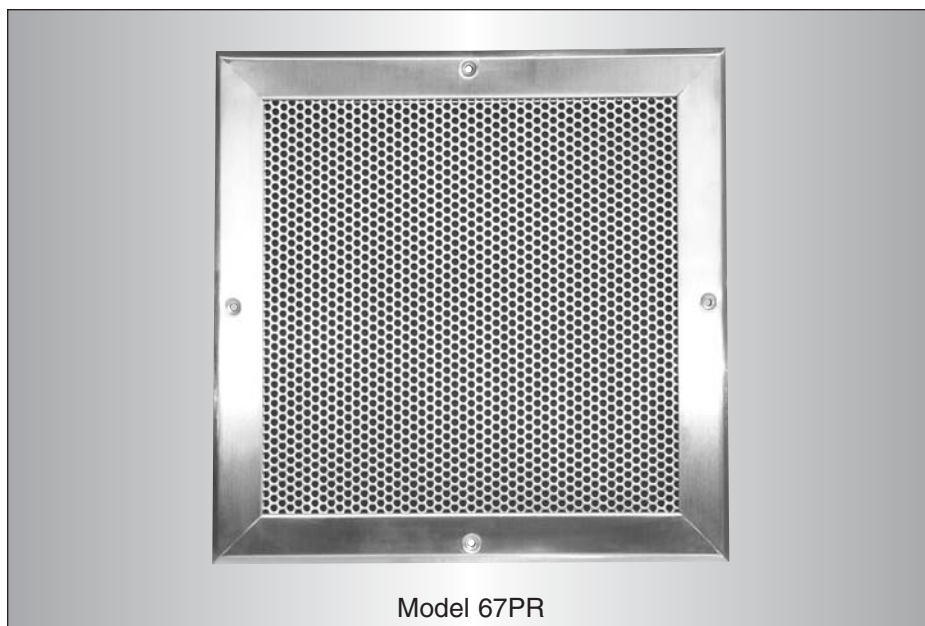
PERFORATED RETURN GRILLES AND REGISTERS

• STAINLESS STEEL

Model:

67PR

- Suffix '-O' adds a stainless steel opposed blade damper



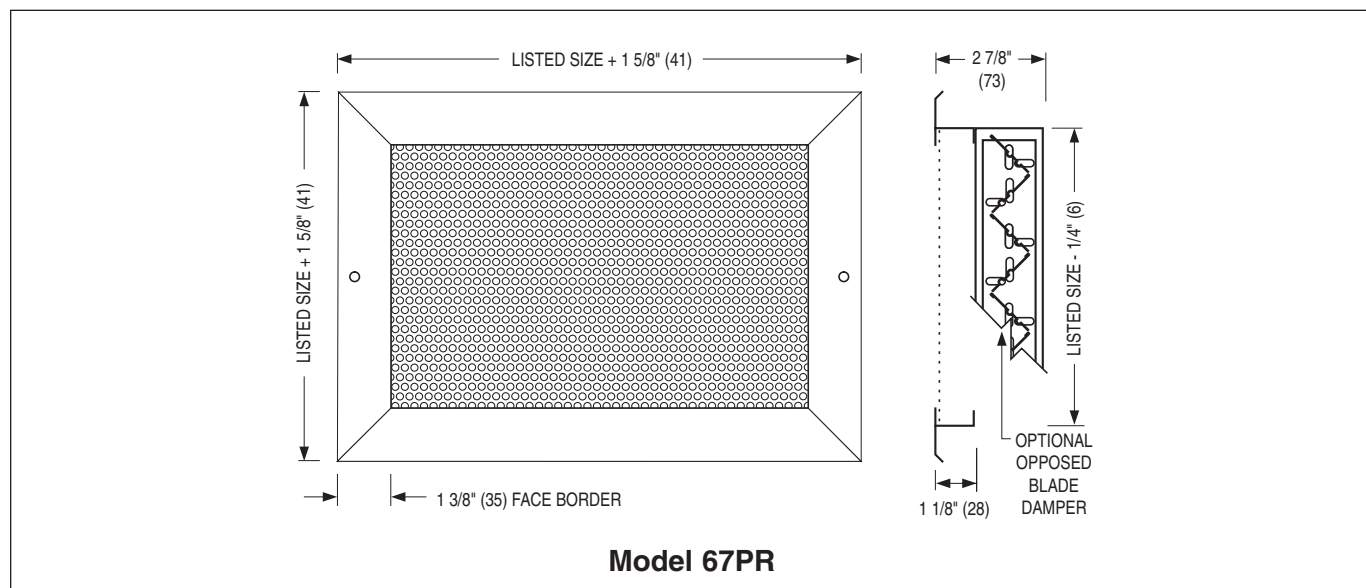
Model 67PR

The Nailor Model Series 67PR Perforated Return Grilles and Registers are medium capacity return or exhaust outlets. The perforated cores have 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Their design is clean and unobtrusive, providing the uncluttered appearance preferred by many architects.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

FEATURES:

- Type 304 stainless steel construction.
- 1 3/8" (35) wide face border with a 1" (25) overlap margin as standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Perforated face that has 3/16" (5) dia. holes on 1/4" (6) staggered centers.
- #3 Satin polished finish is standard. AW Appliance White baked enamel finish is optional. Other finishes are available.
- Optional dampers – roll formed stainless steel, opposed blade design with a screwdriver operator.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).
- Type 316 stainless steel construction available as an option.



Model 67PR

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Perforated Return Grilles and Registers – Model Series 51PR

51PR - O - 24 x 12 - S - OO - AW - A - —

MODEL

- Aluminum Construction 51PR

DAMPER (OBD)

- Steel (standard) O
 - Aluminum OA
 - No Damper —

WIDTH x HEIGHT

inches (mm) x inches (mm)
 For Type S, NF, PL, SP, MP, FP and TP, W x H = Duct Size
 For Type L, W x H = Ceiling Module Size

FRAME/BORDER TYPE

Surface Mount:

- Standard 1 1/4" (32) (default) S
 - Narrow 1" (25) NF

Ceiling Grid:

- Lay-in T-Bar * L

Panel Mount: **

	Steel	Aluminum
- Lay-in T-Bar	PLS or PLA	
- Spline	SPS or SPA	
- Metal Pan	MPS or MPA	
- Fineline® Type	FPS or FPA	
- Tegular	TPS or TPA	

ACCESSORIES

- None (default) —
 - Plaster Sub-frame PF
 - Earthquake Tabs EQT

FASTENING

(only for frame / border types S, NF)
 - Screw Holes (default) A
 - None N

FINISH

- Appliance White (default) AW
 - Aluminum AL
 - Special Custom Color SP

CEILING MODULE SIZE

(Use only for panel mounting, frame / border types PL, SP, MP, FP, TP)
 - None (default) OO

Imperial:

12 x 12, 24 x 12, 36 x 12,
 48 x 12, 20 x 20, 24 x 24,
 36 x 24, 48 x 24

Metric:

300 x 300, 600 x 300, 900 x 300,
 1200 x 300, 500 x 500, 600 x 600,
 900 x 600, 1200 x 600

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum register, surface mount with damper, is Model 51PR-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
- * For Type L Lay-in, grille neck size is ceiling module size - 2" (51).
 ** For Panel mounting, maximum grille neck size is ceiling module size - 3" (76).
 Refer to Options and Accessories Page No. G175 for dimensional data.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 51PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have an aluminum perforated core with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The frame is to be constructed from aluminum extrusion and have reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Steel Perforated Return Grilles and Registers – Model Series 61PR

MODEL _____		61PR - O - 24 x 12 - S - OO - AW - A - —	
- Steel Construction	61PR		
DAMPER (OBD) _____			
- Steel	O		
- No Damper	—		
WIDTH x HEIGHT _____			
inches (mm) x inches (mm)			
For Type S, PL, SP, MP, FP and TP, W x H = Duct Size			
For Type L, W x H = Ceiling Module Size			
FRAME/BORDER TYPE _____			
- Surface Mount (default)	S		
Ceiling Grid:			
- Lay-in T-Bar *	L		
Panel Mount: **		Steel	
- Lay-in T-Bar	PLS		
- Spline	SPS		
- Metal Pan	MPS		
- Fineline® Type	FPS		
- Tegular	TPS		
		ACCESSORIES	
		- None (default)	—
		- Plaster Sub-frame	PF
		- Earthquake Tabs	EQT
		FASTENING	
		(only for frame/border type S)	
		- Screw Holes (default)	A
		- None	N
		FINISH	
		- Appliance White (default)	AW
		- Aluminum	AL
		- Special Custom Color	SP
		CEILING MODULE SIZE	
		(Use only for panel mounting, frame/border types PL, SP, MP, FP, TP)	
		- None (default)	OO
		Imperial:	
		12 x 12, 24 x 12, 36 x 12,	
		48 x 12, 20 x 20, 24 x 24,	
		36 x 24, 48 x 24	
		Metric:	
		300 x 300, 600 x 300, 900 x 300,	
		1200 x 300, 500 x 500, 600 x 600,	
		900 x 600, 1200 x 600	

G

GRILLES AND REGISTERS

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel register, surface mount with damper, is Model 61PR-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
- * For Type L Lay-in, grille neck size is ceiling module size - 2" (51).
** For Panel mounting, maximum grille neck size is ceiling module size - 3" (76).
Refer to Options and Accessories Page No. G175 for dimensional data.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 61PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a corrosion-resistant steel perforated core with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The frame is to be constructed from roll-formed corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Stainless Steel Perforated Return Grilles and Registers – Model Series 67PR

GRILLES AND REGISTERS

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		67PR - O - 24 x 12 - S - #3 - A - —			
MODEL	_____			ACCESSORIES	
	- Stainless Steel Construction 67PR			- None (default)	—
DAMPER (OBD)	_____			- S/S Plaster Sub-frame	PFS
	- Stainless Steel O			OPTION	
	- No Damper —			- 316 Stainless Steel	316
WIDTH x HEIGHT	_____			FASTENING	
	inches (mm) x inches (mm)			- Screw Holes (default)	A
				- None	N
FRAME/BORDER TYPE	_____			FINISH	
	- Surface Mount (default) S			- #3 Satin Polish (default)	#3
				- Appliance White	AW
				- Special	SP

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a stainless steel register, surface mount with damper, is Model 67PR-O. Unit will be supplied with screw holes and #3 satin polished finish.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 67PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional). The perforated core shall have 3/16" (5) dia. perforated holes on 1/4" (6) staggered centers, providing 51% free area. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #3 satin polished finish. (Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units. The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Perforated Return Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51PR, 61PR, 67PR

51FP, 61FP

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	300 .006 .024	400 .010 .042	500 .016 .067	600 .022 .095	700 .031 .130	800 .040 .170	900 .051 .215	1000 .062 .265	1200 .090 .382
6 x 6	8 x 4 10 x 4	0.20	0.20	CFM NC	60 —	80 —	100 —	120 15	140 21	160 26	180 32	200 37	240 44
8 x 6	10 x 5 12 x 4	0.27	0.27	CFM NC	81 —	108 —	135 —	162 16	189 22	216 28	243 33	270 38	324 45
10 x 6	12 x 5 16 x 4	0.35	0.33	CFM NC	105 —	140 —	175 10	210 17	245 24	280 29	315 34	350 39	420 46
8 x 8	14 x 5	0.38	0.36	CFM NC	114 —	152 —	190 11	228 18	266 25	304 29	342 35	380 40	456 47
12 x 6	18 x 4	0.42	0.40	CFM NC	126 —	168 —	210 11	252 18	294 25	336 30	378 35	420 40	504 47
12 x 8	16 x 6 24 x 4	0.58	0.53	CFM NC	174 —	232 —	290 12	348 20	406 27	464 31	522 36	580 41	696 48
10 x 10	14 x 7	0.61	0.56	CFM NC	183 —	244 —	305 13	366 20	427 27	488 31	549 37	610 42	732 49
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.60	CFM NC	195 —	260 —	325 13	390 20	455 27	520 32	585 37	650 42	780 49
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.67	CFM NC	222 —	296 —	370 14	444 21	518 28	592 32	666 37	740 43	888 50
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.80	CFM NC	270 —	360 —	450 15	540 22	630 28	720 33	810 38	900 44	1080 51
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.09	CFM NC	372 —	496 —	620 16	744 23	868 29	992 34	1116 39	1240 45	1488 52
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.20	CFM NC	411 —	548 —	685 17	822 23	959 30	1096 35	1233 39	1370 45	1644 52
24 x 10	20 x 12 30 x 8	1.52	1.33	CFM NC	456 —	608 —	760 17	912 24	1064 30	1216 35	1368 40	1520 46	1824 53
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.42	CFM NC	492 —	656 —	820 17	984 24	1148 30	1312 35	1476 40	1640 46	1968 53
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.60	CFM NC	555 —	740 —	925 17	1110 24	1295 30	1480 35	1665 40	1850 46	2220 53
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	1.80	CFM NC	630 —	840 —	1050 17	1260 24	1470 30	1680 36	1890 40	2100 46	2520 53
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.00	CFM NC	696 —	928 —	1160 17	1392 25	1624 30	1856 37	2088 41	2320 47	2784 54
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.22	CFM NC	783 —	1044 11	1305 18	1566 25	1827 30	2088 37	2349 41	2610 47	3132 54
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	2.69	CFM NC	951 —	1268 11	1585 18	1902 26	2219 31	2536 37	2853 42	3170 48	3804 55
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.00	CFM NC	1062 —	1416 12	1770 19	2124 26	2478 32	2832 37	3186 42	3540 48	4248 55
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.20	CFM NC	1137 —	1516 12	1895 19	2274 27	2653 33	3032 38	3411 43	3790 49	4548 56
36 x 18	32 x 20 46 x 14 40 x 16	4.29	3.60	CFM NC	1287 —	1716 12	2145 19	2574 27	3003 33	3432 38	3861 43	4290 49	5148 56
26 x 26	28 x 24 48 x 14	4.47	3.76	CFM NC	1341 —	1788 13	2235 20	2682 28	3129 34	3576 39	4025 44	4470 50	5364 57
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.00	CFM NC	1431 —	1908 13	2385 21	2862 28	3339 34	3816 39	4293 44	4770 50	5724 57
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.36	CFM NC	1560 —	2080 14	2600 21	3120 28	3640 34	4160 40	4680 44	5200 50	6240 57
36 x 24	30 x 28 44 x 20 40 x 22	5.74	4.80	CFM NC	1722 —	2296 14	2870 22	3444 29	4018 35	4592 40	5166 45	5740 50	6888 58
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.00	CFM NC	1797 —	2396 15	2995 22	3594 29	4193 35	4792 40	5391 45	5990 51	7188 58

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GRILLES AND REGISTERS

Performance Data

Perforated Return Grilles and Registers • 5100, 6100 and 6700 Series

Models: 51PR, 61PR, 67PR

51FP, 61FP

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	300 .006 .024	400 .010 .042	500 .016 .067	600 .022 .095	700 .031 .130	800 .040 .170	900 .051 .215	1000 .062 .265	1200 .090 .382
32 x 32	36 x 30 46 x 22 38 x 28	6.84	5.69	CFM NC	2052 —	2736 15	3420 23	4104 29	4788 36	5472 41	6156 46	6840 51	8208 58
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	6.40	CFM NC	2307 —	3076 16	3845 24	4614 30	5383 36	6152 41	6921 47	7690 52	9228 59
36 x 36	38 x 34 26 x 28 42 x 30 48 x 26	8.69	7.20	CFM NC	2607 —	3476 16	4345 24	5214 31	6083 37	6952 42	7821 47	8690 52	10428 59
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.02	CFM NC	2910 —	3880 17	4850 24	5820 31	6790 37	7760 42	8730 48	9700 53	11640 60
40 x 40	42 x 36 48 x 32 46 x 34	10.77	8.89	CFM NC	3231 —	4308 17	5385 24	6462 31	7539 38	8616 43	9693 49	10770 54	12924 61
42 x 42	44 x 40 48 x 36 46 x 38	11.89	9.80	CFM NC	3567 —	4756 18	5945 25	7134 32	8323 38	9512 43	10701 49	11890 54	14268 61
44 x 44	46 x 42	13.07	10.76	CFM NC	3921 10	5228 18	6535 25	7842 32	9149 38	10456 44	11763 49	13070 54	15684 61
46 x 46		14.30	11.76	CFM NC	4290 11	5720 19	7150 26	8580 33	10010 39	11440 44	12870 49	14300 54	17160 61
48 x 48		15.59	12.80	CFM NC	4677 11	6236 19	7795 26	9354 33	10913 39	12472 44	14031 49	15590 54	18708 61

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

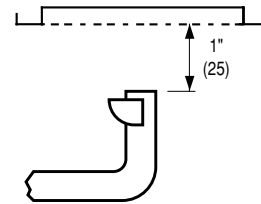
1. Grille tested without damper. Apply the following corrections for addition of opposed blade damper to grille:

Neg. SP Listed Value x 1.10.

NC Add 5 dB to listed value.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

FILTER RETURN AND EXHAUST GRILLES

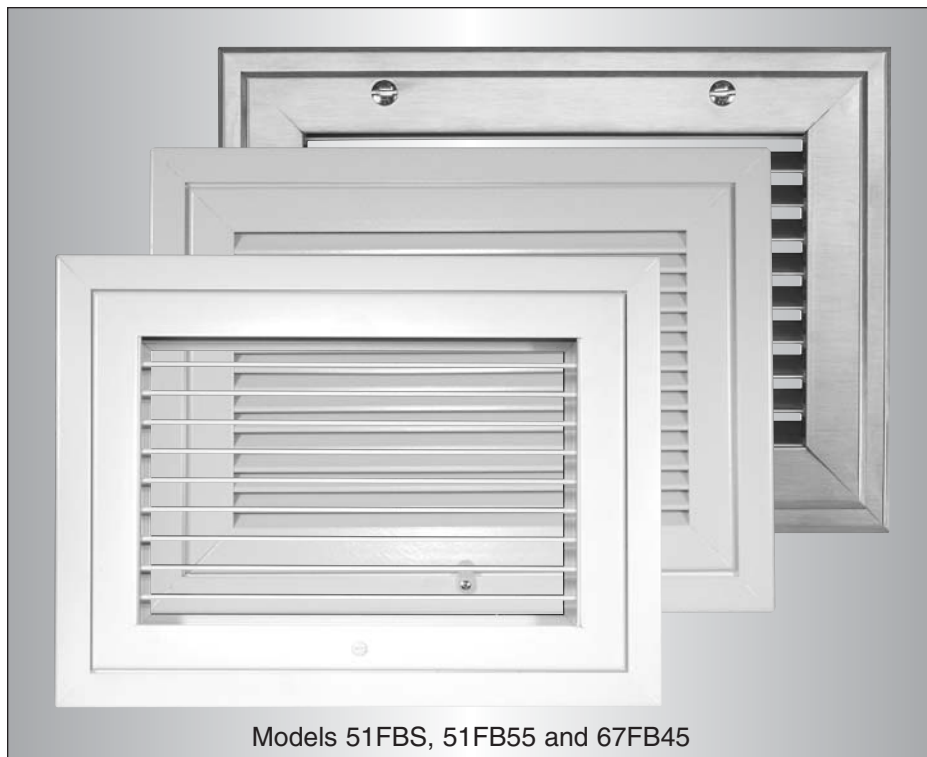
- ACCOMMODATES 1" (25) STANDARD FILTER
- AVAILABLE WITH LOUVERED, EGGRATE OR PERFORATED CORE STYLES

Model Series:

51F Series Aluminum

61F Series Steel

67F Series Stainless Steel



Models 51FBS, 51FB55 and 67FB45

The **Nailor Model Series 51F, 61F and 67F Filter Return and Exhaust Grilles** are a convenient and economical means of filtering primary return air locally. They are especially suited to recirculating air systems such as fan powered terminal units, fan coils and heat pumps. They have been designed to match and compliment their respective base models in appearance.

SELECTION GUIDE:

ALUMINUM MODELS

- 51FB45** Fixed 45° Deflection, 3/4" (19) Spacing
- 51FB55** Fixed 45° Deflection, 1/2" (13) Spacing
- 51FBS** Fixed 0° Deflection, 3/4" (19) Spacing
- 51FE** Eggcrate Grid Core
- 51FP** Perforated Face Core

STEEL MODELS

- 61FB45** Fixed 45° Deflection, 3/4" (19) Spacing
- 61FB55** Fixed 45° Deflection, 1/2" (13) Spacing
- 61FBS** Fixed 0° Deflection, 3/4" (19) Spacing
- 61FE** Eggcrate Grid Core
- 61FP** Perforated Face Core

STAINLESS STEEL MODELS

- 67FB45** Fixed 45° Deflection, 3/4" (19) Spacing, Surface Mount.
 - 67FB55** Fixed 55° Deflection, 1/2" (13) Spacing, Surface Mount.
- Contact factory for availability of other frame/core combinations.

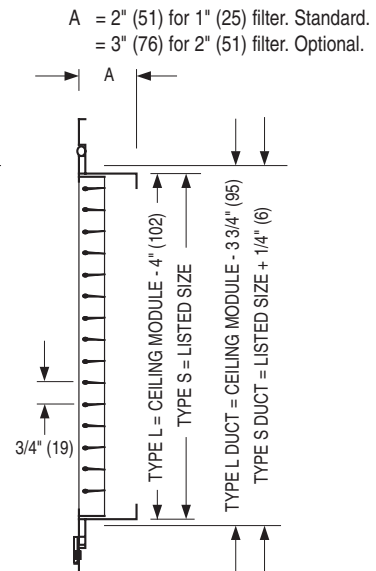
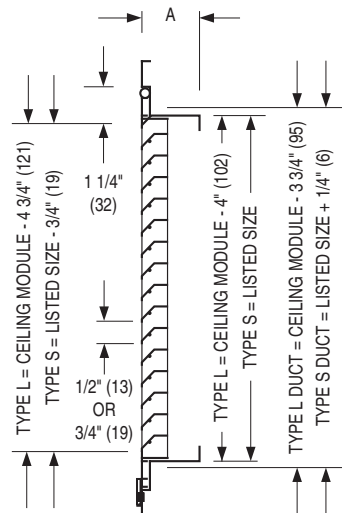
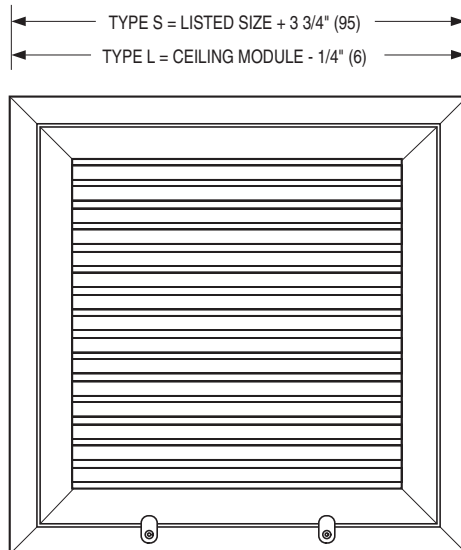
PERFORMANCE DATA: Refer to the appropriate base model and add pressure drop for the installed filter. Fixed Blade pages G41 thru G46. Eggcrate Grid Core pages G95 and G96. Perforated Face pages G103 and G104.

FEATURES:

- Type S Surface Mount.
Installed with sheet metal screws (or similar by others) through the neck of the outer frame. Provides an aesthetically clean visual appearance. Type A countersunk screw holes are an available option.
 - Type L Lay-in T-Bar.
Available to suit both imperial and metric ceiling modules.
 - Frames and sub-frames are mechanically interlocked with reinforced mitered corners.
 - Inner core is hinged on one side and secured on the opposite side with convenient 1/4 turn fasteners.
 - Accepts standard 1" (25) thick, throw-away type filters (by others).
 - Optional 2" (51) filter frame is available.
- Material:** Extruded aluminum construction, roll-formed corrosion-resistant steel or stainless steel construction.
- Finish:** AW Appliance White baked enamel is standard on steel and aluminum constructed models. #3 Satin Polish finish is standard on stainless steel models. Other finishes are available.

Dimensional Data

Filter Return and Exhaust Grilles • 51FB, 61FB, 67FB



MODELS:
51FB45, 51FB55,
61FB45, 61FB55

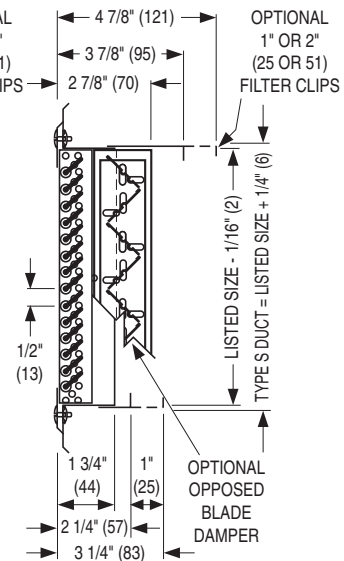
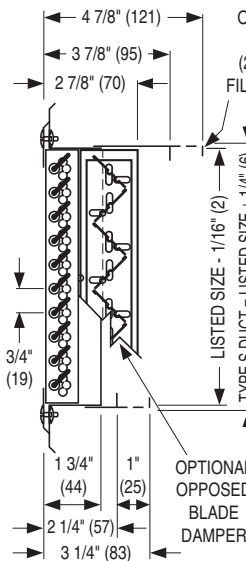
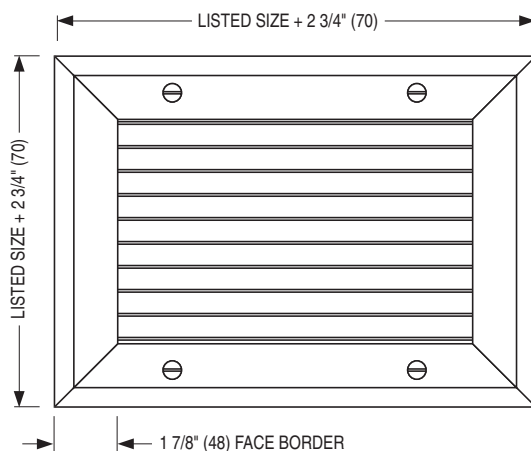
MODELS:
51FBS,
61FBS

Aluminum and Steel Construction • Louvered Face • Fixed Blades

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments. Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.



MODEL:
67FB45

MODEL:
67FB55

Stainless Steel Construction • Louvered Face • Fixed Blades

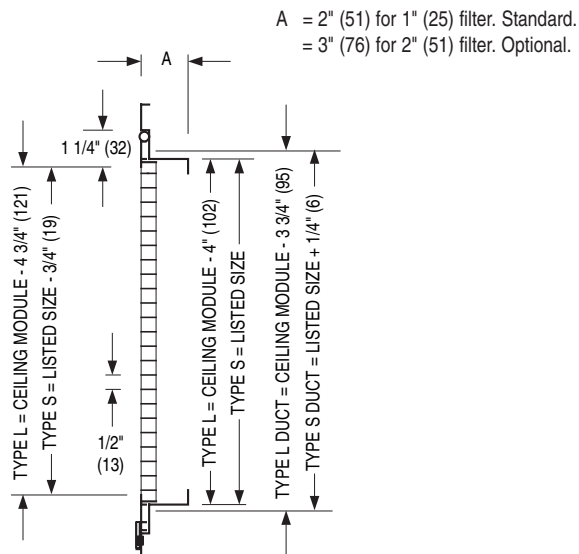
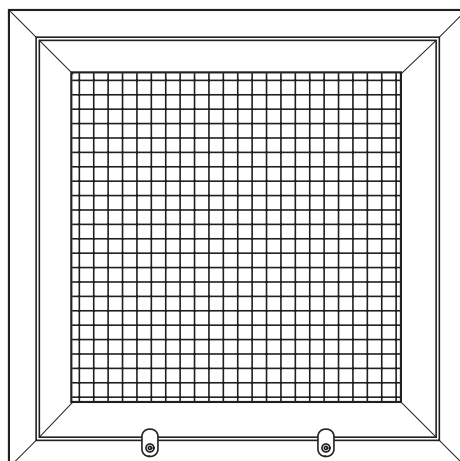
Available in nominal sizes 4" x 4" (102 x 102) through 60" x 48" (1524 x 1219).

Core is secured to outer frame with stainless steel 1/4 turn fasteners.

Dimensional Data

Filter Return Grilles • 51FE, 61FE, 51FP, 61FP

TYPE S = LISTED SIZE + 3 3/4" (95)
TYPE L = CEILING MODULE - 1/4" (6)



MODELS:
51FE, 61FE

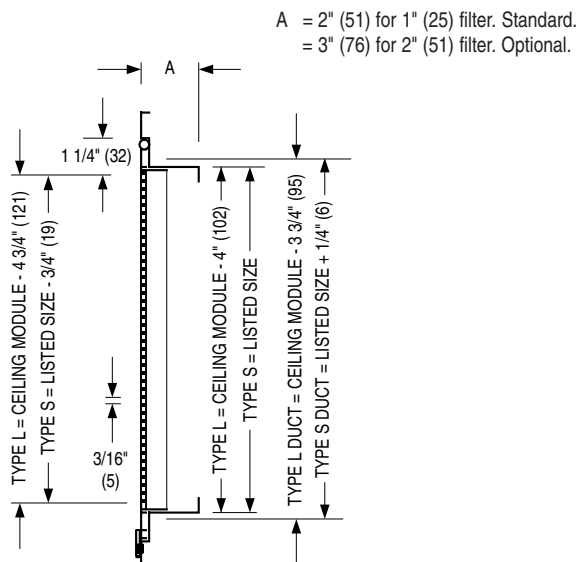
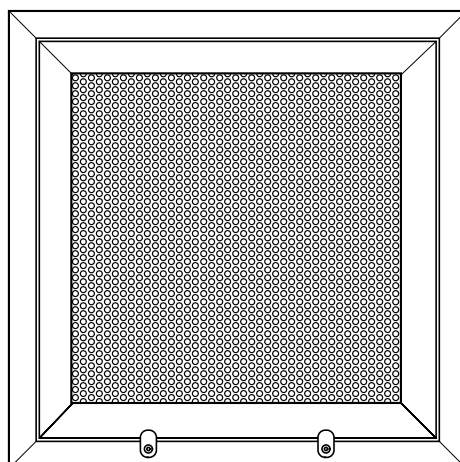
Eggcrate Core • 1/2 x 1/2 x 1/2 (13 x 13 x 13) Aluminum Core

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments. Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.

TYPE S = LISTED SIZE + 3 3/4" (95)
TYPE L = CEILING MODULE - 1/4" (6)



MODELS:
51FP, 61FP

Perforated Face • 3/16" (5) dia. holes on 1/4" (6) staggered centers

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments. Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Filter Return Grilles – Model Series 51F

MODEL _____		51F B 45 - 16 x 16 - S - AW - N - HT - —	
- Aluminum	51F		
CORE _____			
- Blades (louvered)	B		
- Eggcrate	E		
- Perforated	P		
BLADE DEFLECTION _____			
(Core B only)			
- 45° Defl., 3/4" (19) Spacing	45		
- 45° Defl., 1/2" (13) Spacing	55		
- 0° Defl., 3/4" (19) Spacing	S		
WIDTH x HEIGHT _____			
inches (mm) x inches (mm)			
For Surface Mount, W x H = Listed Size			
For Lay-in Type, W x H = Ceiling Module Size			
Notes:			
1. For Type S, duct size is listed size + 1/4" (6).			
2. For Type L, duct size is ceiling module size – 3 3/4" (95).			
3. Core Fastening: Standard Core is hinged and secured with 1/4 turn latches.			
		ACCESSORIES	
		- None (default)	—
		- Earthquake Tabs	EQT
		OPTIONS	
		- Provision for 2" (51) Filter	F2
		Core Fastening:	
		- Knurled Knob	KK
		- 1/4 Turn Slotted	QT
		HINGE	
		- Top (default)	HT
		- Bottom	HB
		- Left	HL
		- Right	HR
		FASTENING	
		(only for frame/border type S)	
		- None (default)	N
		- Screw Holes in Outer Frame	A
		FINISH	
		- Appliance White (default)	AW
		- Aluminum	AL
		- Special Custom Color	SP
		FRAME/BORDER TYPE	
		- Surface Mount	S
		- Lay-in T-Bar	L

SUGGESTED SPECIFICATION:

51FB45, 51FB55, 51FBS Louvered Blade

Furnish and install **Nailor Model** (select one) **51FB45, 51FB55** or **51FBS Fixed Blade Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum fixed blades and frame. The frame is to be hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White baked enamel (optional finishes are available). The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

51FE Eggcrate

Furnish and install **Nailor Model 51FE Eggcrate Grid Core Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and an extruded aluminum frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White baked enamel (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

51FP Perforated

Furnish and install **Nailor Model 51FP Perforated Core Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have an aluminum perforated core that has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area and an extruded aluminum frame that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate a standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White baked enamel (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

(Show complete Model Number and Size, unless "Default" is desired).

		61F B 45 - 16 x 16 - S - AW - N - HT - —			
MODEL	_____			ACCESSORIES	_____
- Steel	61F			- None (default)	—
				- Earthquake Tabs	EQT
CORE	_____			OPTIONS	
- Blades (louvered)	B			- Provision for 2" (51) Filter	F2
- Eggcrate	E			Core Fastening:	
- Perforated	P			- Knurled Knob	KK
				- 1/4 Turn Slotted	QT
BLADE DEFLECTION	_____			HINGE	
(Core B only)				- Top (default)	HT
- 45° Defl., 3/4" (19) Spacing	45			- Bottom	HB
- 45° Defl., 1/2" (13) Spacing	55			- Left	HL
- 0° Defl., 3/4" (19) Spacing	S			- Right	HR
WIDTH x HEIGHT	_____			FASTENING	
inches (mm) x inches (mm)				(only for frame/border type S)	
For Surface Mount, W x H = Listed Size				- None (default)	N
For Lay-in Type, W x H = Ceiling Module Size				- Screw Holes in Outer Frame	A
Notes:				FINISH	
1. For Type S, duct size is listed size + 1/4" (6).				- Appliance White (default)	AW
2. For Type L, duct size is ceiling module size – 3 3/4" (95).				- Aluminum	AL
3. Core Fastening: Standard Core is hinged and secured with 1/4 turn latches.				- Special Custom Color	SP
				FRAME/BORDER TYPE	
				- Surface Mount	S
				- Lay-in T-Bar	L

G GRILLES AND REGISTERS

The manufacturer shall provide published performance data for the grille, which shall be tested accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Stainless Steel Return Grilles and Registers with Subframe – Model Series 67FB

MODEL _____		67FB 45 - O - 24 x 12 - S - #3 - A - —	
- 304 Stainless Steel (Blades louvered)	67FB		
BLADE DEFLECTION _____			
- Fixed 45° Defl., 3/4" (19) Spacing	45		
- Fixed 45° Defl., 1/2" (13) Spacing	55		
DAMPER (OBD) _____			
- Stainless Steel	O		
- No Damper	—		
WIDTH x HEIGHT _____			
inches (mm) x inches (mm)			
		ACCESSORIES	
		- None (default)	—
		- 1" (25) Filter clips	F1
		- 2" (51) Filter clips	F2
		- 1/4 Turn 'Wingnut' Fasteners	WT
		OPTION	
		- 316 Stainless Steel	316
		FASTENING	
		- Screw Holes (default)	A
		FINISH	
		- #3 Satin Polish (default)	#3
		- Appliance White	AW
		- Special	SP
		FRAME / BORDER TYPE	
		- Surface Mount (default)	S

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a stainless steel register with 45° deflection blades, 3/4" (19) blade spacing and damper is Model 67FB45-O. Unit will be supplied with screw holes in the neck of the outer frame and #3 Satin Polished finish.
2. These grilles feature a subframe as standard for applications which may require frequent removal for cleaning. You must specify filter clips for filter applications.
3. For Type S, duct size is listed + 1/4" (6).
4. Core fastening: Standard core is secured with 1/4 turn slotted fasteners.

SUGGESTED SPECIFICATION:

Model 67FB45 – 3/4" (19) Blade Spacing

Furnish and install **Nailor Model 67FB45 Return Grilles with Subframe** of the size and type as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional). Streamlined shaped roll-formed blades shall be fixed on 3/4" (19) centers. The grille core shall be secured to the subframe with stainless steel 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. All exposed surfaces shall have a #3 satin polished finish.

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Model 67FB55 – 1/2" (13) Blade Spacing

Furnish and install **Nailor Model 67FB55 Return Grilles with Subframe** of the size and type as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional). Streamlined shaped roll-formed blades shall be fixed on 1/2" (13) centers. The grille core shall be secured to the outer frame with stainless steel 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. All exposed surfaces shall have a #3 satin polished finish.

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

ALUMINUM DOOR/TRANSFER GRILLES

- SIGHT PROOF

Models:

51DGD Double Flange

51DGS Single Flange



The **Nailor Model Series 51DG Door/Transfer Grilles** are designed to meet the demand for top quality and competitive prices. The grilles are carefully constructed to be unobtrusive in appearance for architectural excellence.

Model Series **51DG** offers the largest free area possible (average > 50%) with a completely sight-proof design, utilizing an inverted 'Y' shaped louver on 2/3" (17) centers.

Widely used, not only in doors and partitions, but also in place of conventional exhaust and return grilles where it is important that the interior of the plenum or duct be concealed.

The inverted-Y blades not only block vision, but also provide strength. When mounted in the lower portion of a door, a door grille is naturally subjected to bumps and kicks. The **51DG** durability assures good looks and long service.

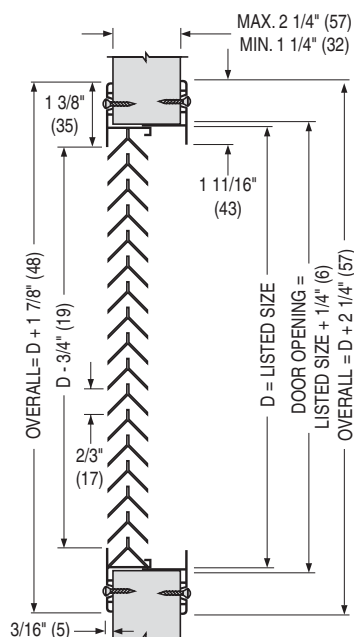
Screw holes in the frame are countersunk for smooth appearance after installation.

Available sizes 4" x 4" (102 x 102) through 48" x 48" (1219 x 1219) in 2" (51) increments.

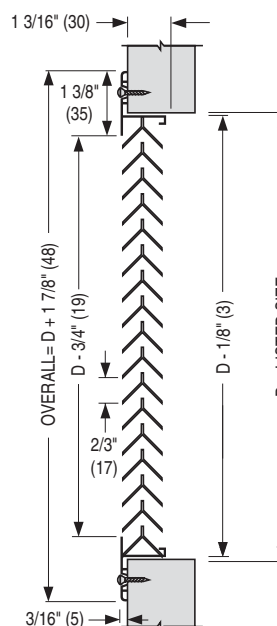
MATERIAL: Heavy gauge, extruded aluminum.

FINISH: AW Appliance White baked enamel finish is standard.

Other finishes are available.



Model 51DGD
Auxiliary Frame Assembly



Model 51DGS
Flange Frame Assembly

STEEL DOOR/TRANSFER GRILLES

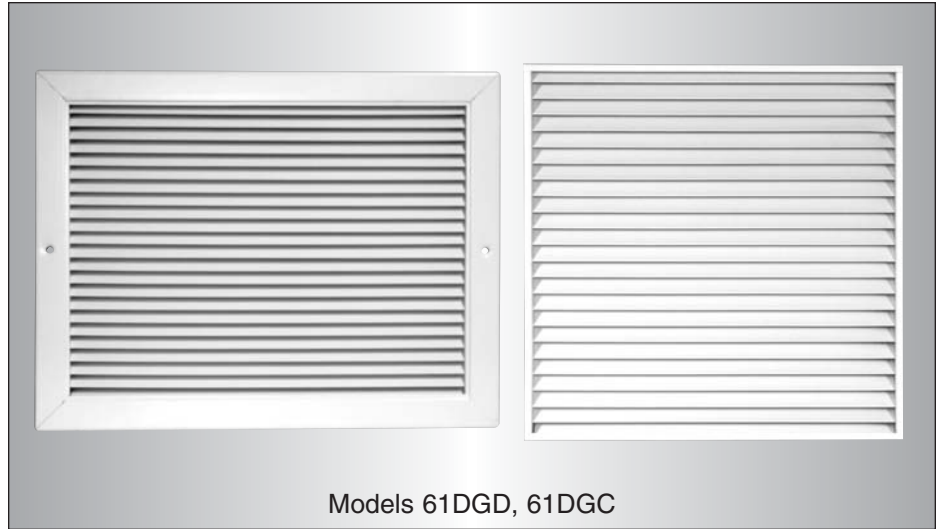
- SIGHT PROOF

Models:

61DGD Double Flange

61DGS Single Flange

61DGC Core Only



Models 61DGD, 61DGC

The **Nailor Model Series 61DG Door/Transfer Grilles** are designed to meet the demand for top quality and competitive prices. The grilles are carefully constructed to be unobtrusive in appearance for architectural excellence.

Model Series **61DG** offers the largest free area possible (average > 50%) with a completely sight-proof design, utilizing a 90° inverted 'V' louver on 1/2" (13) centers.

Widely used, not only in doors and partitions, but also in place of conventional exhaust and return grilles where it is important that the interior of the plenum or duct be concealed.

The inverted-V blades not only block vision, but also provide strength. When mounted in the lower portion of a door, a door grille is naturally subjected to bumps and kicks. The **61DG** durability assures good looks and long service.

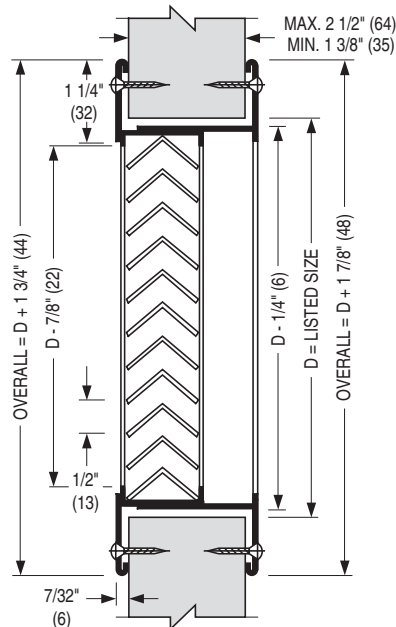
Screw holes in the frame are countersunk for smooth appearance after installation.

Available sizes 6" x 4" (152 x 102) through 36" x 36" (914 x 914) in 2" (51) increments.

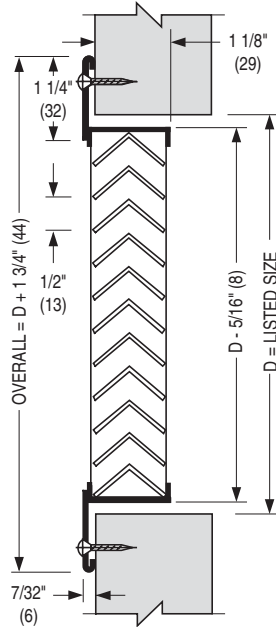
MATERIAL: Heavy gauge, corrosion-resistant steel.

FINISH: AW Appliance White baked enamel finish is standard.

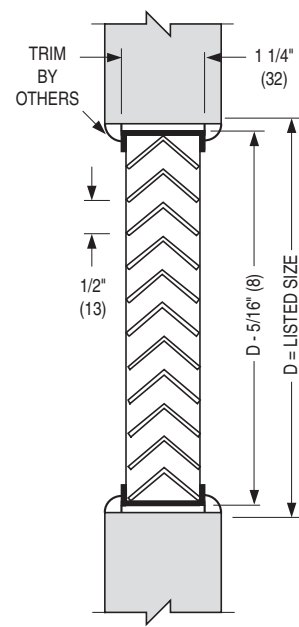
Other finishes are available.



Model 61DGD (Double Flange)
Auxiliary Frame Assembly



Model 61DGS (Single Flange)
Flange Frame Assembly



Model 61DGC (Core Only)
Core & Channel Frame Assembly

FIRE RATED DOOR GRILLES

- LOUVERED FACE
- UL LISTED
- SELF ATTACHING AUXILIARY FRAME

Model:
61DGD-FR



Model 61DGD-FR

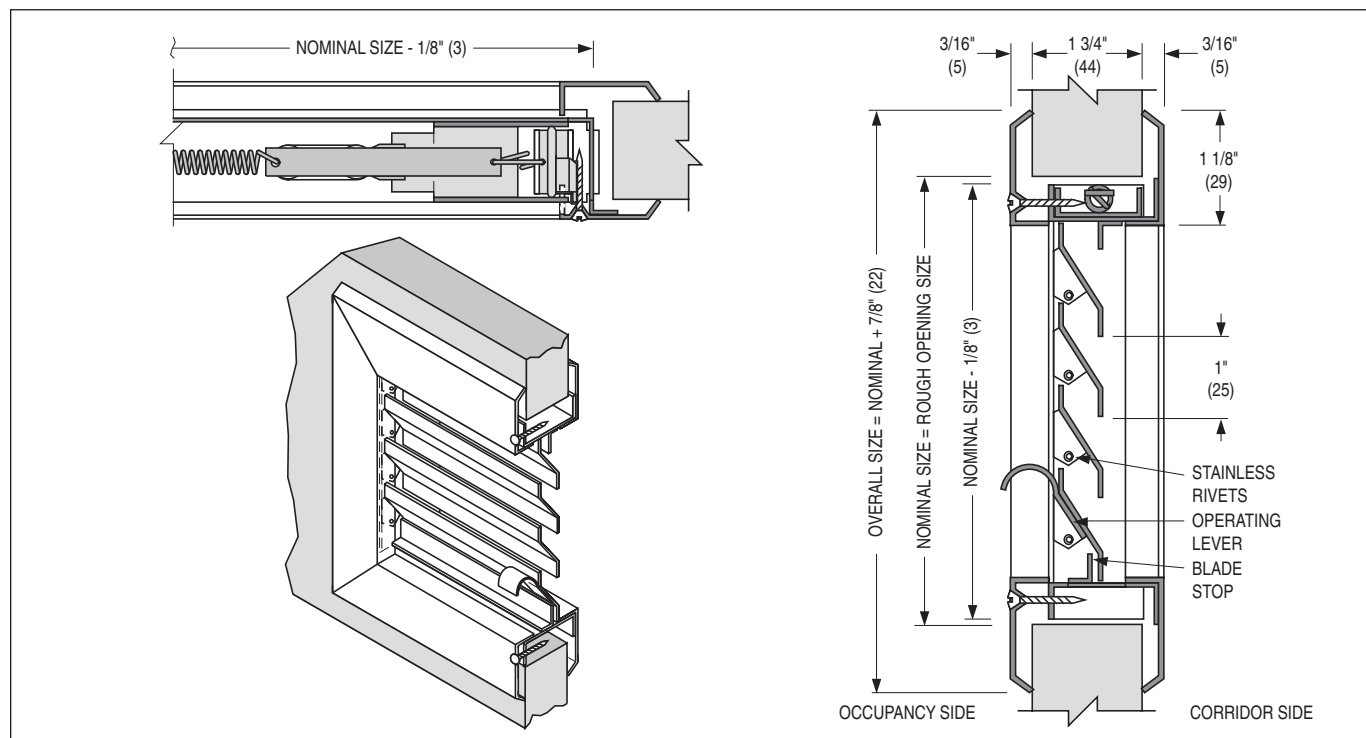
The **Nailor Model Series 61DGD-FR Fire Rated Door Grilles** are listed by Underwriters Laboratories for use in hollow metal and composite type fire doors with up to a 1 1/2 hour rating.

The frame is designed to suit doors that are 1 3/4" (44) thick, and includes a self-attaching auxiliary frame which eliminates the need to drill holes in the door. The 18 gauge formed steel blades are "Z" shaped and are adjustable using the pull operator.

The closing assembly features a 160°F (71° C) UL listed fusible link with stainless steel operating spring and dead lock bar.

FEATURES:

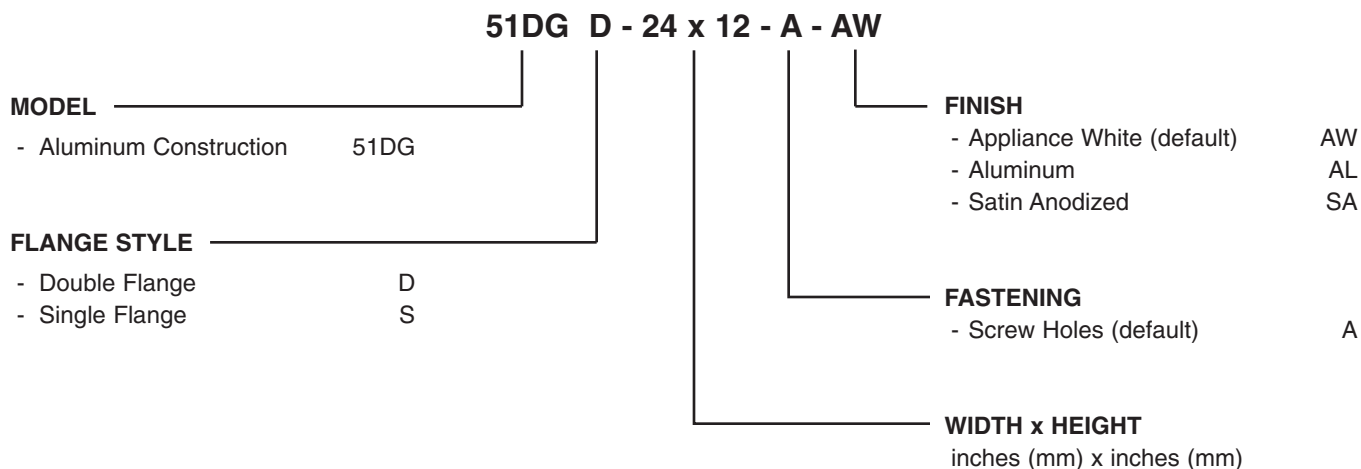
- Cold rolled steel construction.
- Adjustable 18 gauge blades and a rigid 18 gauge frame.
- 1 1/8" (29) wide face border with a 3/16" (5) beveled edge.
- UL Listed with up to a 1 1/2 hr. rating.
- 160° Fahrenheit (71° C) fusible link.
- Stainless steel operating springs
- BP – Dark Bronze primer finish is standard.
- Available in 2" (51) incremental sizes from 12" x 6" (305 x 152) to 24" x 24" (610 x 610).
- For your convenience, six "Quick Delivery" sizes are available. Contact your Nailor representative for details.



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Door/Transfer Grille – Model Series 51DG



G

GRILLES AND REGISTERS

Notes:

- For a standard grille with no special requirements, the "default" will automatically be selected. For example, an aluminum door grille with a double flange, is Model 51DGD. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.

SUGGESTED SPECIFICATION:

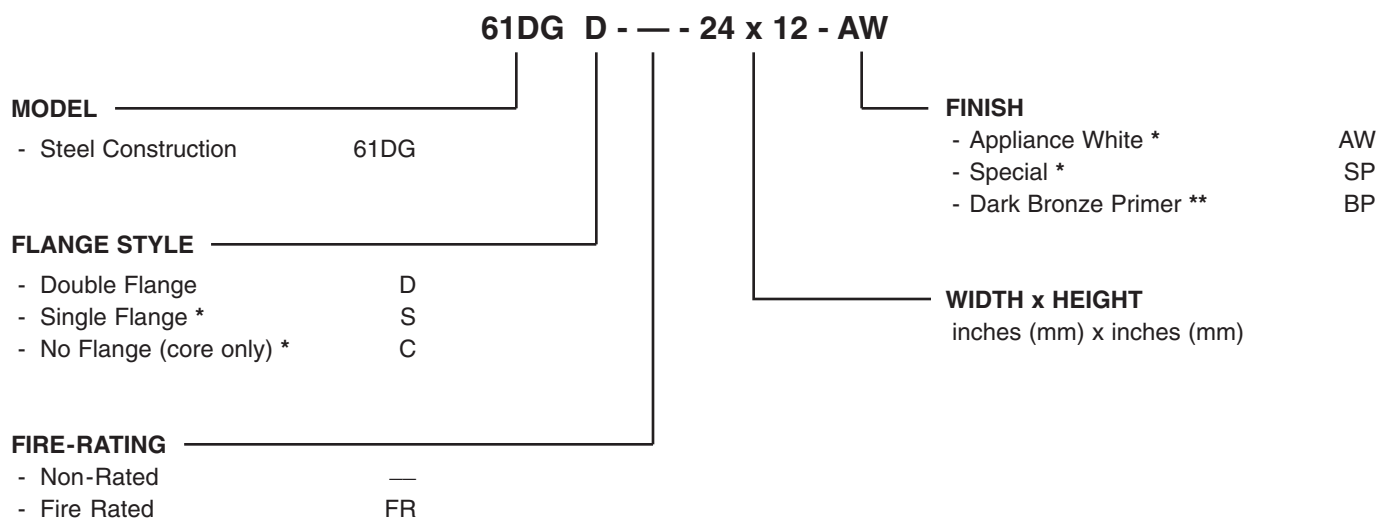
Furnish and install **Nailor Model** (select one) **51DGD** or **51DGS Door/Transfer Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum inverted 'Y' shaped blades and an extruded aluminum frame. The door grille is to be sight-proof. The finish shall be AW Appliance White baked enamel (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Steel Door/Transfer Grille – Model Series 61DG



G

GRILLES AND REGISTERS

Notes:

- * Not available on Fire Rated Model.
- ** Only available on Fire Rated Model.

SUGGESTED SPECIFICATION:

61DGD, 61DGS, 61DGC Non-Rated

Furnish and install **Nailor Model** (select one) **61DGD, 61DGS** or **61DGC Door/Transfer Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have corrosion-resistant steel, inverted 'V' shaped blades and frames. The door grille is to be sight-proof. The finish shall be AW Appliance White baked enamel (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

61DGD-FR Fire Rated

Furnish and install **Nailor Model 61DGD-FR Fire Rated Door Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall be UL listed with a fire-rating up to 1 1/2 hours. The finish shall be BP Dark Bronze Primer baked enamel.

Performance Data

Door/Transfer Grilles • 5100, 6100 Series

Models: 51DG, 61DG

Nominal Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	150 .001 .012	200 .002 .021	250 .004 .033	300 .006 .048	350 .008 .065	400 .010 .085	450 .013 .108
6 x 6	8 x 4 10 x 4	0.18	0.25	CFM NC	18 —	27 —	36 13	45 18	54 22	63 25	72 28	81 30
8 x 6	12 x 4	0.25	0.33	CFM NC	25 —	38 —	50 14	63 19	75 23	88 26	100 29	113 31
10 x 6	16 x 4	0.32	0.41	CFM NC	32 —	48 —	64 15	80 20	96 24	112 27	128 30	144 33
8 x 8		0.35	0.44	CFM NC	35 —	53 —	70 15	88 20	105 24	123 27	140 30	158 32
12 x 6	18 x 4	0.40	0.50	CFM NC	40 —	60 10	80 16	100 21	120 25	140 28	160 31	180 33
12 x 8	16 x 6 24 x 4	0.55	0.66	CFM NC	55 —	83 11	110 17	138 22	165 26	193 29	220 32	248 34
10 x 10	26 x 4	0.58	0.69	CFM NC	58 —	87 11	116 17	145 22	174 26	203 29	232 32	261 35
12 x 10	16 x 8 20 x 6	0.70	0.82	CFM NC	70 —	105 13	140 19	175 23	210 27	245 30	280 33	315 36
12 x 12	14 x 10 18 x 8	0.86	0.99	CFM NC	86 —	129 14	172 20	215 24	258 28	301 31	344 34	387 36
14 x 14	16 x 12 20 x 10	1.20	1.35	CFM NC	120 —	180 15	240 21	300 25	420 29	420 32	480 35	540 37
18 x 12	16 x 14 22 x 10	1.32	1.49	CFM NC	132 —	198 16	264 22	330 26	396 30	462 33	528 36	594 38
16 x 16	18 x 14 22 x 12	1.59	1.76	CFM NC	159 —	239 16	318 22	398 27	477 32	557 34	636 36	716 39
24 x 12	18 x 16 20 x 14	1.79	1.98	CFM NC	179 —	269 17	358 23	448 28	537 33	627 35	716 37	806 40
18 x 18	20 x 16 24 x 14	2.04	2.23	CFM NC	204 10	306 18	408 24	510 29	612 34	714 36	816 38	918 41
30 x 12	20 x 18 22 x 16	2.25	2.48	CFM NC	225 10	338 18	450 24	563 29	675 34	788 36	900 38	1013 41
20 x 20	24 x 18 26 x 16	2.54	2.75	CFM NC	254 11	381 19	508 25	635 30	762 35	889 37	1016 39	1143 42
22 x 22	24 x 20 26 x 18	3.10	3.33	CFM NC	310 11	465 19	620 25	775 30	930 35	1085 38	1240 40	1395 43
30 x 18	24 x 22 34 x 16	3.46	3.71	CFM NC	346 11	519 20	692 26	865 30	1038 35	1211 38	1384 40	1557 43
24 x 24	26 x 22 28 x 20	3.71	3.96	CFM NC	371 11	557 20	742 26	928 30	1113 35	1299 38	1484 41	1670 44
36 x 18	32 x 20	4.18	4.46	CFM NC	418 11	627 20	836 26	1045 30	1254 35	1463 39	1672 41	1881 44
26 x 26	28 x 24	4.38	4.65	CFM NC	438 12	657 20	876 27	1095 31	1314 36	1533 39	1752 41	1971 44
30 x 24	28 x 26 32 x 22	4.68	4.95	CFM NC	468 12	702 21	936 27	1170 31	1404 36	1638 39	1872 41	2106 44
28 x 28	30 x 26 36 x 22	5.11	5.39	CFM NC	511 12	767 21	1022 28	1278 32	1533 37	1789 40	2044 42	2300 45
36 x 24	30 x 28	5.64	5.94	CFM NC	564 13	846 22	1128 28	1410 32	1692 37	1974 40	2256 42	2538 45
30 x 30	34 x 26	5.89	6.19	CFM NC	589 13	884 22	1178 28	1473 32	1767 37	2062 40	2356 42	2651 45

CFM - cubic feet per minute
 VP - velocity pressure - inches w.g.
 Neg. SP - negative static pressure - inches w.g.
 NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.
 Core Velocity is in feet per minute.

Performance Notes:

1. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.
2. Ak balancing factors are based on an Alnor velometer with a 2220A or 6070P Jet Probe. Position probe 1" (25) out from face of grille and take the average of several readings at various positions.
 Airflow (CFM) = Average velocity (V_k) x Ak.

ALUMINUM REVERSIBLE CORE GRILLES AND REGISTERS

• SUPPLY OR RETURN

Models:

51RC

51RCD

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51RC

The **Nailor Models 51RC and 51RCD Reversible Core 'Linear Style' Grilles and Registers** are designed to combine rugged aluminum construction, pleasing architectural design and flexible air pattern versatility. The blade core is removable and may be rotated or reversed to achieve any one of four air deflection patterns. The **Model 51RCD** incorporates a set of rear directional vanes that are individually adjustable for additional air pattern control in supply applications.

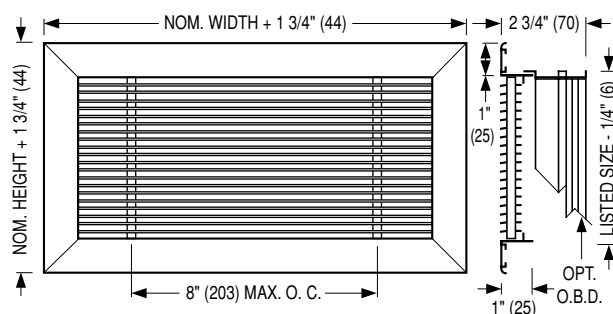
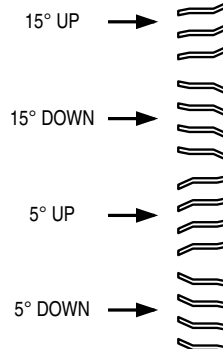
FEATURES:

- High quality extruded aluminum frame with reinforced mitered corners.
- Horizontal aluminum blades are spaced on 1/4" (6) centers and feature mandrel tube construction.
- Blade core is secured by a minimum of four sliding friction latches and is removable without the need for special tools.
- For additional air pattern control in supply applications, these grilles are available with optional rear deflection vanes, (on 3/4" (19) centers), which are friction pivoted and adjustable in order to provide horizontal spread of the air pattern from 0° to 45°.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment

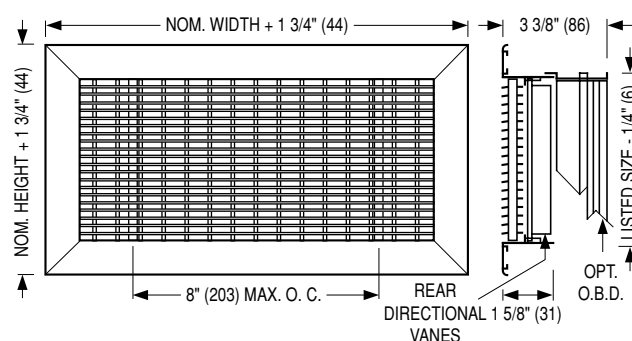
through the face of the register.

- Optional aluminum opposed blade damper is available.
- Type N standard fastening is with sheet metal screws through neck of grille frame while core is removed, providing a clean, architectural appearance.
- Type A countersunk screw holes on frame margin mounting is available (option).
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 6" x 4" to 48" x 24" (152 x 102 to 1219 x 610) in single section construction.

Reversible core provides 4 different vertical deflections:



Model 51RC Reversible Core Grille



Model 51RCD Reversible Core Grille
with Rear Directional Vanes

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Reversible Core Grilles and Registers – Model Series 51RC

GRILLES AND REGISTERS

		51RC - O - 24 x 12 - S - AW - N - -		
MODEL			ACCESSORIES	
- Aluminum Construction	51RC		- None (default)	—
- Aluminum Construction with Rear Vanes	51RCD		- Insect Screen	IS
			- Foam Gasket	GK
DAMPER			FASTENING	
- Steel (standard)	O		- None (default)	N
- Aluminum (optional)	OA		- Countersunk Screw Holes	A
- No Damper	—		FINISH	
WIDTH x HEIGHT			- Appliance White (default)	AW
inches (mm) x inches (mm)			- Aluminum	AL
			- Special Custom Color	SP
			FRAME/BORDER TYPE	
			- Surface Mount (default)	S

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum reversible core register, and steel damper, is Model 51RC-O. Unit will be supplied with no screw holes and AW Appliance White baked enamel finish.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **51RC** or **51RCD (with rear vanes) Reversible Core Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum blades and frame. The blade core is to be removable and may be rotated or reversed to achieve any one of four air deflection patterns. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Reversible Core Grilles and Registers • 51RC Series Models: 51RC, 51RCD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				TP 22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318
6 x 6	8 x 4 10 x 4	0.20		CFM NC	40	60	80	100	120	140	160	180	200
				0°	2-5-10	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	14-17-24	15-18-25
				T 22 1/2°	2-4-8	4-6-10	6-7-13	6-10-14	8-11-16	9-12-17	10-13-18	11-14-19	12-14-20
				45°	1-2-5	3-4-7	4-5-8	4-6-9	5-7-10	6-8-11	7-8-12	7-8-12	8-9-13
8 x 6	10 x 5 12 x 4	0.27		CFM NC	54	81	108	135	162	189	216	243	270
				0°	2-5-12	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	16-20-28	17-21-30
				T 22 1/2°	2-4-10	4-6-12	6-10-14	8-11-16	9-13-18	10-14-20	12-15-22	13-16-22	14-17-24
				45°	1-2-6	3-4-8	4-6-9	5-7-10	6-8-12	7-9-13	8-10-14	8-10-14	9-11-15
10 x 6	12 x 5 16 x 4	0.35		CFM NC	70	105	140	175	210	245	280	315	350
				0°	3-6-14	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	19-22-31	20-23-33
				T 22 1/2°	2-5-11	5-7-14	7-10-17	8-13-19	10-15-21	12-16-22	14-17-24	15-18-25	16-18-26
				45°	1-3-7	3-5-9	5-7-11	5-8-12	6-10-13	8-10-14	9-11-15	9-11-15	10-12-17
8 x 8	14 x 5	0.38		CFM NC	76	114	152	190	228	266	304	342	380
				0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	18-23-32	19-24-34
				T 22 1/2°	2-5-12	5-7-15	7-11-18	9-13-20	10-15-22	13-17-23	14-18-26	14-18-26	15-19-27
				45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17
12 x 6	18 x 4	0.42		CFM NC	84	126	168	210	252	294	336	378	420
				0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	18-23-32	19-11-16
				T 22 1/2°	2-5-12	5-7-15	7-11-18	9-13-20	10-15-22	13-17-24	14-18-26	14-18-26	15-19-27
				45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17
14 x 6	10 x 8	0.50		CFM NC	100	150	200	250	300	350	400	450	500
				0°	3-7-16	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	20-24-34	21-25-36
				T 22 1/2°	2-6-13	5-9-16	8-12-18	10-14-20	12-16-22	13-18-25	15-18-26	16-19-27	17-20-29
				45°	1-3-8	3-6-10	5-8-12	6-9-13	8-10-14	8-11-16	10-12-17	10-12-17	11-13-18
12 x 8	16 x 6 24 x 4	0.58		CFM NC	116	174	232	290	348	406	464	522	580
				0°	3-7-17	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	21-26-36	22-27-38
				T 22 1/2°	2-6-14	6-9-17	8-12-19	10-15-22	12-17-24	14-18-26	16-19-27	17-21-29	18-22-30
				45°	1-3-8	4-6-11	5-8-12	6-10-14	8-11-15	9-12-16	10-12-17	10-13-18	11-14-19
10 x 10	14 x 7 26 x 4	0.61		CFM NC	122	183	244	305	366	427	488	549	610
				0°	3-7-17	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	22-27-37	23-28-39
				T 22 1/2°	2-6-14	6-9-17	8-13-19	10-15-22	13-17-24	14-18-26	16-19-28	18-22-30	18-22-31
				45°	1-3-8	4-6-11	5-8-12	7-10-14	8-11-15	9-12-16	10-12-18	11-13-18	12-14-20
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM NC	130	195	260	325	390	455	520	585	650
				0°	3-8-18	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	23-27-38	24-29-40
				T 22 1/2°	2-6-14	6-10-18	9-13-20	10-16-23	13-18-26	14-19-27	17-20-29	18-22-30	19-23-32
				45°	1-3-9	4-6-11	6-8-13	7-10-15	8-11-16	9-12-17	11-13-18	11-13-19	12-15-20
12 x 10	20 x 6 24 x 5	0.74		CFM NC	148	222	296	370	444	518	592	666	740
				0°	4-8-19	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	24-29-41	25-31-43
				T 22 1/2°	3-6-15	6-10-19	9-14-22	11-17-25	14-19-26	16-21-29	18-22-31	19-23-33	20-25-34
				45°	1-3-9	4-7-12	6-9-14	7-11-16	9-12-17	10-13-18	11-14-20	12-14-20	13-16-22
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM NC	160	240	320	400	480	560	640	720	800
				0°	4-8-20	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	25-30-43	26-32-45
				T 22 1/2°	3-6-16	6-10-20	9-14-22	12-18-26	14-20-28	16-22-30	18-22-33	20-24-34	21-26-36
				45°	1-3-10	4-7-13	6-9-14	8-11-16	9-13-18	10-14-19	12-14-21	12-15-21	13-16-23
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM NC	180	270	360	450	540	630	720	810	900
				0°	4-9-21	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	26-31-45	27-33-47
				T 22 1/2°	3-7-17	7-11-21	10-14-23	12-18-26	14-21-29	17-22-31	19-23-34	21-25-36	22-26-38
				45°	1-4-10	5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	13-15-22	14-17-24
18 x 10	30 x 6	1.13		CFM NC	226	339	452	565	678	791	904	1017	1130
				0°	4-10-23	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	28-34-48	30-36-51
				T 22 1/2°	3-8-18	7-12-23	11-16-26	14-20-29	16-23-32	19-24-34	22-26-37	22-27-38	24-29-41
				45°	1-5-11	5-8-15	7-10-17	9-13-18	10-15-20	12-15-22	14-17-23	14-17-24	15-18-26

Performance Data

Reversible Core Grilles and Registers • 51RC Series

Models: 51RC,51RCD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				TP 22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM NC	248	372	496	620	744	868	992	1116	1240
			.75	T 0°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-40-57	35-42-60
			.70	T 22 1/2°	4-10-21	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	26-32-46	28-34-48
			.64	T 45°	2-6-13	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	16-20-28	18-21-30
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM NC	274	411	548	685	822	959	1096	1233	1370
			.83	T 0°	5-12-26	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	33-41-58	35-43-61
			.77	T 22 1/2°	4-10-21	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	26-33-46	28-34-49
			.71	T 45°	2-6-13	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	16-20-29	18-22-31
24 x 10	20 x 12 30 x 8	1.52		CFM NC	304	456	608	760	912	1064	1216	1368	1520
			.92	T 0°	6-12-28	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	35-43-61	37-45-64
			.85	T 22 1/2°	5-10-22	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	28-34-49	30-36-51
			.79	T 45°	3-6-14	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	17-21-30	19-23-32
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM NC	328	492	656	820	984	1148	1312	1476	1640
			.99	T 0°	6-13-30	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	37-45-64	39-47-67
			.92	T 22 1/2°	5-10-24	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	29-34-47	30-36-51	31-38-54
			.85	T 45°	3-6-15	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	18-22-32	20-24-34
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM NC	370	555	740	925	1110	1295	1480	1665	1850
			1.11	T 0°	6-13-30	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	38-46-65	40-48-69
			1.03	T 22 1/2°	5-10-24	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	30-37-52	32-38-55
			.95	T 45°	3-6-15	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	19-23-32	20-24-35
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM NC	420	630	840	1050	1260	1470	1680	1890	2100
			1.25	T 0°	6-14-32	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	40-49-70	42-52-74
			1.16	T 22 1/2°	5-11-26	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	32-39-66	34-42-59
			1.07	T 45°	3-7-16	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	20-24-35	21-26-37
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM NC	464	696	928	1160	1392	1624	1856	2088	2320
			1.40	T 0°	7-15-34	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	44-53-75	46-56-79
			1.30	T 22 1/2°	6-12-27	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	35-42-60	32-45-63
			1.20	T 45°	3-7-17	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	22-26-37	23-28-40
24 x 16	32 x 12	2.50		CFM NC	500	750	1000	1250	1500	1750	2000	2250	2500
			1.49	T 0°	7-16-36	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	46-55-78	48-58-82
			1.38	T 22 1/2°	6-13-29	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	37-44-62	38-46-66
			1.28	T 45°	3-8-18	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	23-27-39	24-29-41
20 x 20	22 x 18	2.61		CFM NC	522	783	1044	1305	1566	1827	2088	2349	2610
			1.55	T 0°	7-16-37	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	46-56-80	49-59-84
			1.44	T 22 1/2°	6-13-30	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	37-45-64	39-47-67
			1.33	T 45°	3-8-18	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	23-28-40	25-30-42
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM NC	558	837	1116	1395	1674	1953	2232	2511	2790
			1.67	T 0°	7-16-38	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	47-58-82	50-61-86
			1.55	T 22 1/2°	6-13-30	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-69
			1.44	T 45°	3-8-19	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	23-29-41	25-31-43
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM NC	634	951	1268	1585	1902	2219	2536	2853	3170
			1.89	T 0°	8-18-40	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	50-62-87	53-65-92
			1.76	T 22 1/2°	6-14-32	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	40-50-70	42-52-74
			1.62	T 45°	4-9-20	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	25-31-43	27-33-46
42 x 12	36 x 14	3.27		CFM NC	654	981	1308	1635	1962	2289	2616	2943	3270
			1.95	T 0°	8-18-41	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	50-63-88	53-66-93
			1.81	T 22 1/2°	6-14-33	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	40-50-70	42-53-74
			1.68	T 45°	4-9-20	9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	25-31-44	27-33-47
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM NC	708	1062	1416	1770	2124	2478	2832	3186	3540
			2.10	T 0°	9-18-42	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	53-65-92	56-69-97
			1.95	T 22 1/2°	7-14-34	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	42-52-74	45-55-78
			1.81	T 45°	4-9-21	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	26-32-46	28-35-49

Performance Data

Reversible Core Grilles and Registers • 51RC Series

Models: 51RC, 51RCD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	0°	200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				TP	22 1/2°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				45°		.008	.019	.033	.052	.075	.102	.134	.169	.209
						.013	.029	.051	.079	.113	.156	.205	.258	.318
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM NC		758	1137	1516	1895	2274	2653	3032	3411	3790
						—	—	18	25	30	35	39	42	45
			2.25 2.09 1.93	T	0° 22 1/2° 45°	9-19-44 7-15-35 4-9-22	18-29-55 14-23-44 9-15-28	26-39-62 21-31-50 13-20-31	33-48-70 26-38-56 17-24-35	39-55-77 31-44-62 20-28-39	45-59-83 36-47-66 23-30-42	51-62-89 41-50-71 26-31-45	54-66-94 43-53-75 27-33-47	57-70-99 46-56-79 29-35-50
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM NC		858	1287	1716	2145	2574	3003	3432	3861	4290
						—	—	19	26	31	36	40	43	46
			2.53 2.36 2.18	T	0° 22 1/2° 45°	9-20-46 7-16-37 4-10-23	19-31-58 15-25-46 10-16-29	28-42-68 22-34-54 14-21-34	35-52-75 28-42-60 18-26-38	42-58-83 34-46-66 21-29-42	48-63-89 38-50-71 24-32-45	55-68-95 44-54-76 28-34-48	58-71-101 46-57-81 29-35-50	61-75-106 49-60-85 31-38-53
26 x 26	28 x 24 48 x 14	4.47		CFM NC		894	1341	1788	2235	2682	3129	3576	4023	4470
						—	—	19	26	31	36	40	43	46
			2.62 2.44 2.25	T	0° 22 1/2° 45°	9-21-47 7-17-38 4-10-23	19-32-59 15-26-47 10-16-30	28-43-69 22-34-55 14-22-35	35-53-77 28-42-62 18-27-32	43-59-85 34-47-68 22-30-43	49-65-91 39-52-73 25-33-46	56-69-98 45-55-78 28-35-49	60-73-103 48-58-82 30-36-51	63-77-109 50-62-87 32-39-55
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM NC		954	1431	1908	2385	2862	3339	3816	4293	4770
						—	—	19	26	31	36	40	43	46
			2.81 2.62 2.42	T	0° 22 1/2° 45°	10-22-49 8-18-39 5-11-24	20-33-61 16-26-49 10-17-31	29-44-71 23-35-57 15-22-36	36-54-79 29-43-63 18-27-40	44-61-87 35-49-70 22-31-44	51-67-94 41-54-75 26-34-47	58-71-101 46-57-81 29-36-51	62-75-106 50-60-85 31-37-53	65-79-112 52-63-90 33-40-56
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM NC		1040	1560	2080	2600	3120	3640	4160	4680	5200
						—	—	20	27	32	37	41	44	47
			3.09 2.88 2.66	T	0° 22 1/2° 45°	10-22-50 8-18-40 5-11-25	21-34-63 17-27-50 11-17-32	30-45-74 24-36-59 15-23-37	38-56-82 30-45-66 19-28-41	45-63-90 36-50-72 23-32-45	53-69-97 42-55-78 27-35-49	60-74-104 48-59-83 30-37-52	64-78-110 51-62-88 32-39-55	67-82-116 54-66-93 34-41-58
36 x 24	40 x 22 44 x 20	5.74		CFM NC		1148	1722	2296	2870	3444	4018	4592	5166	5740
						—	—	20	27	32	37	41	44	47
			3.38 3.15 2.91	T	0° 22 1/2° 45°	11-24-54 9-19-43 5-12-27	23-36-68 18-29-54 12-18-34	32-49-78 26-39-62 16-25-39	41-60-88 33-48-70 21-30-44	49-68-96 39-54-77 25-34-48	57-74-104 46-59-83 29-37-52	64-78-112 51-62-90 32-39-56	68-84-118 54-67-94 34-42-59	72-88-124 58-70-99 36-44-62
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM NC		1344	2016	2688	3360	4032	4704	5376	6048	6720
						—	—	21	28	33	38	42	45	48
			3.95 3.68 3.40	T	0° 22 1/2° 45°	12-26-58 10-21-46 6-13-29	24-39-72 19-31-58 12-20-36	34-51-84 27-41-67 17-26-42	43-64-93 34-51-74 22-32-47	51-72-102 41-58-82 26-36-51	60-78-111 48-62-89 30-39-56	68-84-118 54-67-94 34-42-59	73-88-125 58-70-100 36-44-62	77-93-132 62-74-106 39-47-66
36 x 30	38 x 28	7.22		CFM NC		1444	2166	2888	3610	4332	5054	5776	6498	7220
						—	—	21	28	33	38	42	45	48
			4.23 3.94 3.64	T	0° 22 1/2° 45°	12-26-61 10-21-49 6-13-30	25-40-76 20-32-61 13-20-38	36-54-87 29-43-70 18-27-44	45-68-98 36-54-78 23-34-49	54-76-108 43-61-86 27-38-54	63-82-116 50-66-93 32-41-58	71-87-124 57-70-99 36-44-62	76-93-132 61-74-106 38-46-66	80-98-139 64-78-111 40-49-70
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM NC		1538	2307	3076	3845	4614	5383	6152	6921	7690
						—	15	22	29	34	39	43	46	49
			4.51 4.20 3.88	T	0° 22 1/2° 45°	13-27-62 10-22-50 6-13-31	26-41-77 21-33-62 13-22-39	37-55-90 30-44-72 19-28-45	46-69-100 37-55-80 23-45-50	55-77-109 44-62-87 28-39-55	64-84-118 51-67-94 32-42-59	73-90-127 58-72-102 37-45-64	78-95-135 62-76-108 39-47-67	82-100-142 66-80-114 41-50-71

CFM - cubic feet per minute

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts @ 0° deflection.

Core velocity is in feet per minute.

Performance Notes:

1. Tabulated data includes opposed blade damper. Without opposed blade damper, multiply Total Pressure (TP) by x 0.8. Subtract 4 NC from the NC value shown.
2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.
3. NC values were obtained using a 0° horizontal deflection rear blade setting. For deflection settings of 22 1/2° and 45°, add 2 and 7 NC to the tabulated NC level respectively.
4. When used as a return grille, the negative static pressure is obtained by multiplying the tabulated TP @ 0° deflection by x 0.8. Add 4 NC to the NC value shown.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS

• SUPPLY

Models:

51D30H-HD, 51D30V-HD

51D15H-HD, 51D15V-HD

51DFH-HD, 51DFV-HD

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



The **Nailor Model Series 51D00-HD Heavy Duty Supply Grilles and Registers** are designed to combine heavy duty aluminum construction, pleasing architectural design and flexible air pattern versatility. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

The heavy duty extruded aluminum frame is staked and welded for maximum strength. Fixed front bars are reinforced and supported by a deep profile cross-bar on maximum 8" (203) centers. All models are supplied with a set of friction pivoted rear vanes on 3/4" (19) centers that are individually adjustable for directional control and air pattern spread.

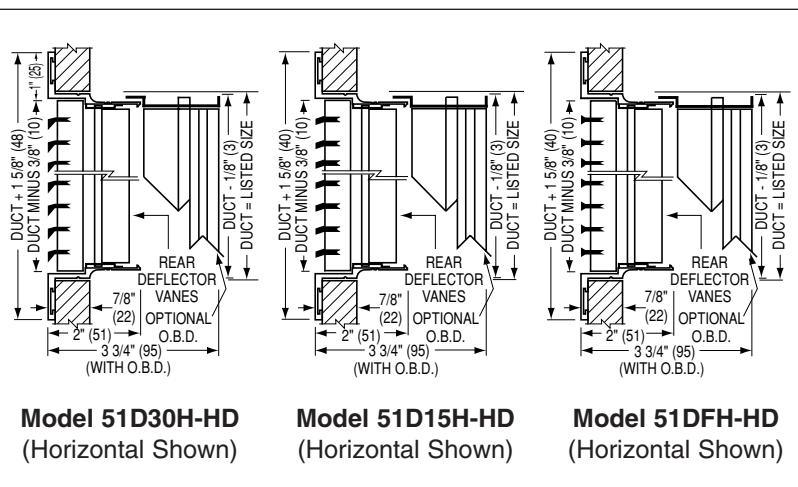
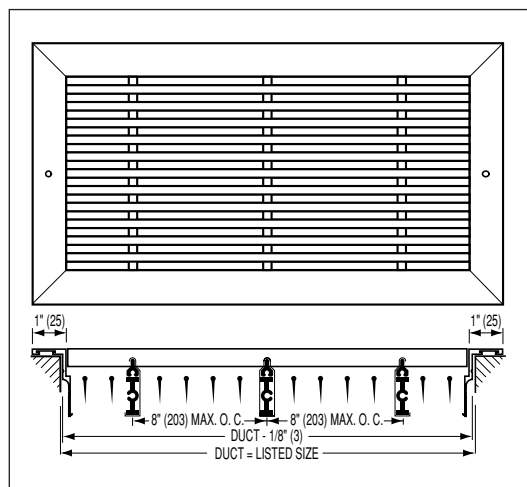
FEATURES:

- Fixed front bars on 1/2" (13) centers are available in 0°, 15° or 30° deflection.
- 0° and 15° models feature 1/8" (3) bars and the 30° model features 1/4" (6) bars.
- High quality heavy duty extruded aluminum frame with reinforced mitered corners.
- Rear deflection vanes on 3/4" (19) centers are friction pivoted and adjustable in order to provide directional

control and air pattern spread.

- 1" (25) wide face border with a 3/4" (19) overlap margin is standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 8" x 4" to 48" x 36" (203 x 102 to 1219 x 914) in single section construction.



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Heavy Duty Bar Supply Grilles and Registers – Model Series 51D00-HD

		51 D 30 H - HD - O - 24 x 12 - S - AW - A - —		
MODEL	_____			ACCESSORIES
- Aluminum Construction	51			- None (default) —
SUPPLY	_____			- Plaster Sub-frame PF
- Rear Deflection Vanes	D			- Foam Gasket GK
FRONT BAR DEFLECTION	_____			FASTENING
- Fixed 0° Deflection	F			- Screw Holes (default) A
- Fixed 15° Deflection	15			- Concealed Mounting Straps C
- Fixed 30° Deflection	30			- None N
FRONT BAR DIRECTION	_____			FINISH
- Horizontal	H			- Appliance White (default) AW
- Vertical	V			- Aluminum AL
HEAVY DUTY	_____			- Special Custom Color SP
	HD			- Satin (clear) Anodized SA
DAMPER (OBD)	_____			FRAME/BORDER TYPE
- Steel (standard)	O			- Surface Mount (default) S
- Aluminum	OA			
- No Damper	—			
WIDTH x HEIGHT	_____			
inches (mm) x inches (mm)				

Notes:

1. Front bars are fixed deflection. Rear directional vanes (blades) are adjustable and perpendicular to front bars.
2. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum 30° fixed deflection with rear deflection vane register, horizontal blade direction and steel damper, is Model 51D30H-HD-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
3. The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD or 51DFV-HD Aluminum Heavy Duty Bar Supply Grilles** with rear deflection vanes of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum reinforced blades and welded frame. The front bars are to be fixed on 1/2" (13) centers and the rear deflection vanes are to be adjustable on 3/4" (19) centers. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Aluminum Heavy Duty Bar Supply Grilles and Registers • 51D00-HD Series

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

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				0°	.014	.031	.057	.088	.127	.174	.228	.287	.353
				TP 22 1/2°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
6 x 6	8 x 4 10 x 4	0.20		CFM NC	40	60	80	100	120	140	160	180	200
			.12	0°	2-5-10	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	14-17-24	15-18-25
			.11	22 1/2°	2-4-8	4-6-10	6-7-13	6-10-14	8-11-16	9-12-17	10-13-18	11-14-19	12-14-20
			.10	45°	1-2-5	3-4-7	4-5-8	4-6-9	5-7-10	6-8-11	6-8-12	7-8-12	8-9-13
8 x 6	10 x 5 12 x 4	0.27		CFM NC	54	81	108	135	162	189	216	243	270
			.15	0°	2-5-12	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	16-20-28	17-21-30
			.14	22 1/2°	2-4-10	4-6-12	6-10-14	8-11-16	9-13-18	10-14-20	12-15-22	13-16-22	14-17-24
			.13	45°	1-2-6	3-4-8	4-6-9	5-7-10	6-8-12	7-9-13	8-10-14	8-10-14	9-11-15
10 x 6	12 x 5 16 x 4	0.35		CFM NC	70	105	140	175	210	245	280	315	350
			.20	0°	3-6-14	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	19-22-31	20-23-33
			.18	22 1/2°	2-5-11	5-7-14	7-10-17	8-13-19	10-15-21	12-16-22	14-17-24	15-18-25	16-18-26
			.17	45°	1-3-7	3-5-9	5-7-11	5-8-12	6-10-13	8-10-14	9-11-15	9-11-15	10-12-17
8 x 8	14 x 5	0.38		CFM NC	76	114	152	190	228	266	304	342	380
			.21	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	18-23-32	19-24-34
			.19	22 1/2°	2-5-12	5-7-15	7-11-18	9-13-20	10-15-22	13-17-23	14-18-26	14-18-26	15-19-27
			.18	45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17
12 x 6	18 x 4	0.42		CFM NC	84	126	168	210	252	294	336	378	420
			.23	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	18-23-32	19-11-16
			.21	22 1/2°	2-5-12	5-7-15	7-11-18	9-13-20	10-15-22	13-17-24	14-18-26	14-18-26	15-19-27
			.20	45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17
14 x 6	10 x 8	0.50		CFM NC	100	150	200	250	300	350	400	450	500
			.27	0°	3-7-16	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	20-24-34	21-25-36
			.26	22 1/2°	2-6-13	5-9-16	8-12-18	10-14-20	12-16-22	13-18-25	15-18-26	16-19-27	17-20-29
			.23	45°	1-3-8	3-6-10	5-8-12	6-9-13	8-10-14	9-11-16	10-12-17	10-12-17	11-13-18
12 x 8	16 x 6 24 x 4	0.58		CFM NC	116	174	232	290	348	406	464	522	580
			.31	0°	3-7-17	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	21-26-36	22-27-38
			.28	22 1/2°	2-6-14	6-9-17	8-12-19	10-15-22	12-17-24	14-18-26	16-19-27	17-21-29	18-22-30
			.27	45°	1-3-8	4-6-11	5-8-12	6-10-14	8-11-15	9-12-16	10-12-17	10-13-18	11-14-19
10 x 10	14 x 7 26 x 4	0.61		CFM NC	122	183	244	305	366	427	488	549	610
			.33	0°	3-7-17	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	22-27-37	23-28-39
			.30	22 1/2°	2-6-14	6-9-17	8-13-19	10-15-22	13-17-24	14-18-26	16-19-28	18-22-30	18-22-31
			.28	45°	1-3-8	4-6-11	5-8-12	7-10-14	8-11-15	9-12-16	10-12-18	11-13-18	12-14-20
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM NC	130	195	260	325	390	455	520	585	650
			.35	0°	3-8-18	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	23-27-38	24-29-40
			.33	22 1/2°	2-6-14	6-10-18	9-13-20	10-16-23	13-18-26	14-19-27	17-20-29	18-22-30	19-23-32
			.30	45°	1-3-9	4-6-11	6-8-13	7-10-15	8-11-16	9-12-17	11-13-18	11-13-19	12-15-20
12 x 10	20 x 6 24 x 5	0.74		CFM NC	148	222	296	370	444	518	592	666	740
			.40	0°	4-8-19	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	24-29-41	25-31-43
			.37	22 1/2°	3-6-15	6-10-19	9-14-22	11-17-25	14-19-26	16-21-29	18-22-31	19-23-33	20-25-34
			.33	45°	1-3-9	4-7-12	6-9-14	7-11-16	9-12-17	10-13-18	11-14-20	12-14-20	13-16-22
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM NC	160	240	320	400	480	560	640	720	800
			.43	0°	4-8-20	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	25-30-43	26-32-45
			.40	22 1/2°	3-6-16	6-10-20	9-14-22	12-18-26	14-20-28	16-22-30	18-22-33	20-24-34	21-26-36
			.37	45°	1-3-10	4-7-13	6-9-14	8-11-16	9-13-18	10-14-19	12-14-21	12-15-21	13-16-23
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM NC	180	270	360	450	540	630	720	810	900
			.47	0°	4-9-21	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	26-31-45	27-33-47
			.44	22 1/2°	3-7-17	7-11-21	10-14-23	12-18-26	14-21-29	17-22-31	19-23-34	21-25-36	22-26-38
			.40	45°	1-4-10	5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	13-15-22	14-17-24
18 x 10	30 x 6	1.13		CFM NC	226	339	452	565	678	791	904	1017	1130
			.59	0°	4-10-23	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	28-34-48	30-36-51
			.55	22 1/2°	3-8-18	7-12-23	11-16-26	14-20-29	16-23-32	19-24-34	22-26-37	22-27-38	24-29-41
			.51	45°	1-5-11	5-8-15	7-10-17	9-13-18	10-15-20	12-15-22	14-17-23	14-17-24	15-18-26

Performance Data

Aluminum Heavy Duty Bar Supply Grilles and Registers • 51D00-HD Series

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

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				0°	.014	.031	.057	.088	.127	.174	.228	.287	.353
				22 1/2°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM NC	248	372	496	620	744	868	992	1116	1240
				0°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-40-57	35-42-60
				22 1/2°	4-10-21	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	26-32-46	28-34-48
				45°	2-6-13	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	16-20-28	18-21-30
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM NC	274	411	548	685	822	959	1096	1233	1370
				0°	5-12-26	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	33-41-58	35-43-61
				22 1/2°	4-10-21	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	26-33-46	28-34-49
				45°	2-6-13	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	16-20-29	18-22-31
24 x 10	20 x 12 30 x 8	1.52		CFM NC	304	456	608	760	912	1064	1216	1368	1520
				0°	6-12-28	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	35-43-61	37-45-64
				22 1/2°	5-10-22	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	28-34-49	30-36-51
				45°	3-6-14	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	17-21-30	19-23-32
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM NC	328	492	656	820	984	1148	1312	1476	1640
				0°	6-13-30	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	37-45-64	39-47-67
				22 1/2°	5-10-24	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	30-36-51	31-38-54
				45°	3-6-15	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	18-22-32	20-24-34
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM NC	370	555	740	925	1110	1295	1480	1665	1850
				0°	6-13-30	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	38-46-65	40-48-69
				22 1/2°	5-10-24	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	30-37-52	32-38-55
				45°	3-6-15	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	19-23-32	20-24-35
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM NC	420	630	840	1050	1260	1470	1680	1890	2100
				0°	6-14-32	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	40-49-70	42-52-74
				22 1/2°	5-11-26	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	34-42-59	38-46-66
				45°	3-7-16	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	20-24-35	21-26-37
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM NC	464	696	928	1160	1392	1624	1856	2088	2320
				0°	7-15-34	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	44-53-75	46-56-79
				22 1/2°	6-12-27	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	35-42-60	37-45-63
				45°	3-7-17	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	22-26-37	23-28-40
24 x 16	32 x 12	2.50		CFM NC	500	750	1000	1250	1500	1750	2000	2250	2500
				0°	7-16-36	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	46-55-78	48-58-82
				22 1/2°	6-13-29	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	37-44-62	38-46-66
				45°	3-8-18	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	23-27-39	24-29-41
20 x 20	22 x 18	2.61		CFM NC	522	783	1044	1305	1566	1827	2088	2349	2610
				0°	7-16-37	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	46-56-80	49-59-84
				22 1/2°	6-13-30	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	37-45-64	39-47-67
				45°	3-8-18	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	23-28-40	25-30-42
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM NC	558	837	1116	1395	1674	1953	2232	2511	2790
				0°	7-16-38	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	47-58-82	50-61-86
				22 1/2°	6-13-30	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-69
				45°	3-8-19	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	23-29-41	25-31-43
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM NC	634	951	1268	1585	1902	2219	2536	2853	3170
				0°	8-18-40	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	50-62-87	53-65-92
				22 1/2°	6-14-32	14-22-40	19-29-46	23-36-52	28-40-57	34-43-62	38-46-66	40-50-70	42-52-74
				45°	4-9-20	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	25-31-43	27-33-46
42 x 12	36 x 14	3.27		CFM NC	654	981	1308	1635	1962	2289	2616	2943	3270
				0°	8-18-41	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	50-63-88	53-66-93
				22 1/2°	6-14-33	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	40-50-70	42-53-74
				45°	4-9-20	9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	25-31-44	27-33-47
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM NC	708	1062	1416	1770	2124	2478	2832	3186	3540
				0°	9-18-42	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	53-65-92	56-69-97
				22 1/2°	7-14-34	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	42-52-74	45-55-78
				45°	4-9-21	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	26-32-46	28-35-49

Performance Data

Aluminum Heavy Duty Bar Supply Grilles and Registers • 51D00-HD Series

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

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	200 .003	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062
				0°	.014	.031	.057	.088	.127	.174	.228	.287	.353
				TP 22 1/2°	.016	.037	.064	.101	.146	.199	.261	.330	.408
				45°	.025	.057	.099	.154	.220	.304	.400	.503	.620
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79	1.93 1.80 1.66	CFM NC	758 —	1137 17	1516 24	1895 31	2274 36	2653 41	3032 45	3411 48	3790 51
				0°	9-19-44	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	54-66-94	57-70-99
				T 22 1/2°	7-15-35	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	43-53-75	46-56-79
				45°	4-9-22	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	27-33-47	29-35-50
36 x 18	32 x 20 40 x 16 46 x 14	4.29	2.18 2.03 1.87	CFM NC	858 —	1287 18	1716 25	2145 32	2574 37	3003 42	3432 46	3861 49	4290 52
				0°	9-20-46	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	58-71-101	61-75-106
				T 22 1/2°	7-16-37	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	46-57-81	49-60-85
				45°	4-10-23	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	29-35-50	31-38-53
26 x 26	28 x 24 48 x 14	4.47	2.25 2.10 1.93	CFM NC	894 —	1341 18	1788 25	2235 32	2682 37	3129 42	3576 46	4023 49	4470 52
				0°	9-21-47	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	60-73-103	63-77-109
				T 22 1/2°	7-17-38	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	48-58-82	50-62-87
				45°	4-10-23	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	30-36-51	32-39-55
30 x 24	32 x 22 36 x 20 40 x 18	4.77	2.42 2.25 2.08	CFM NC	954 —	1431 18	1908 25	2385 32	2862 37	3339 42	3816 46	4293 49	4770 52
				0°	10-22-49	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	62-75-106	65-79-112
				T 22 1/2°	8-18-39	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	50-60-85	52-63-90
				45°	5-11-24	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	31-37-53	33-40-56
28 x 28	30 x 26 36 x 22 40 x 20	5.20	2.66 2.48 2.29	CFM NC	1040 —	1560 19	2080 26	2600 33	3120 38	3640 43	4160 47	4680 50	5200 53
				0°	10-22-50	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	64-78-110	67-82-116
				T 22 1/2°	8-18-40	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	51-62-88	54-66-93
				45°	5-11-25	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	32-39-55	34-41-58
36 x 24	40 x 22 44 x 20	5.74	2.91 2.71 2.50	CFM NC	1148 —	1722 19	2296 26	2870 33	3444 38	4018 43	4592 47	5166 50	5740 53
				0°	11-24-54	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	68-84-118	72-88-124
				T 22 1/2°	9-19-43	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	54-67-94	58-70-99
				45°	5-12-27	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	34-42-59	36-44-62
42 x 24	36 x 28 42 x 24 46 x 22	6.72	3.40 3.16 2.31	CFM NC	1344 —	2016 20	2688 27	3360 34	4032 39	4704 44	5376 48	6048 51	6720 54
				0°	12-26-58	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	73-88-125	77-93-132
				T 22 1/2°	10-21-46	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	58-70-100	62-74-106
				45°	6-13-29	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	36-44-62	39-47-66
36 x 30	38 x 28	7.22	3.64 3.39 3.13	CFM NC	1444 —	2166 20	2888 27	3610 34	4332 39	5054 44	5776 48	6498 51	7220 54
				0°	12-26-61	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	76-93-132	80-98-139
				T 22 1/2°	10-21-49	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	61-74-106	64-78-111
				45°	6-13-30	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-70
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	3.88 3.61 3.34	CFM NC	1538 —	2307 21	3076 28	3845 35	4614 40	5383 45	6152 49	6921 52	7690 55
				0°	13-27-62	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	78-95-135	82-100-142
				T 22 1/2°	10-22-50	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	62-76-108	66-80-114
				45°	6-13-31	13-22-39	19-28-45	23-34-50	28-39-55	32-42-59	37-45-64	39-47-67	41-50-71

CFM - cubic feet per minute

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts @ 0° deflection.

Core velocity is in feet per minute.

Performance Notes:

1. Performance data is based on models 51DFH-HD and 51DFV-HD with 0° deflection front blades. For 15° and 30° deflection models, use: —

Correction Factors:

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

2. Tabulated data includes OBD (damper). Without OBD, multiply Total Pressure (TP) by x 0.8. Subtract 4 NC from the NC value shown.

3. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.

4. NC values were obtained using a 0° horizontal deflection rear blade setting. For deflection settings of 22 1/2° and 45°, add 2 and 7 NC to the tabulated NC level respectively.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

ALUMINUM HEAVY DUTY BAR RETURN GRILLES

• GYMNASIUM

Models:

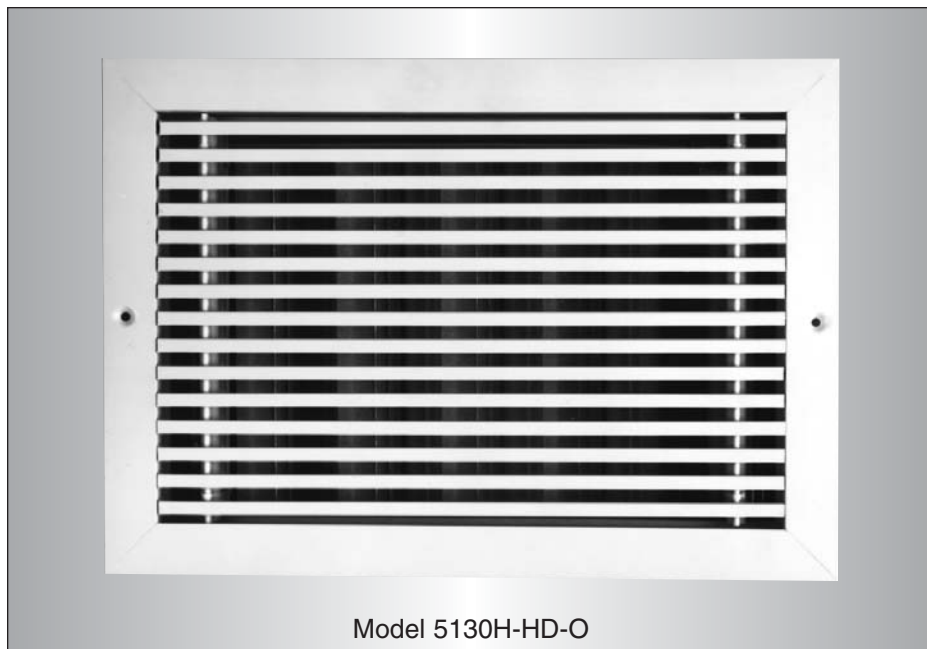
5130H-HD 30° Horizontal Blades

5130V-HD 30° Vertical Blades

51FH-HD 0° Horizontal Blades

51FV-HD 0° Vertical Blades

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



The **Nailor Model Series 5100-HD Heavy Duty Return Grilles and Registers** are designed to combine heavy duty aluminum construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

The heavy duty extruded aluminum frame is staked and welded for maximum strength. Fixed front bars are reinforced and supported by a deep profile cross-bar on maximum 8" (203) centers.

FEATURES:

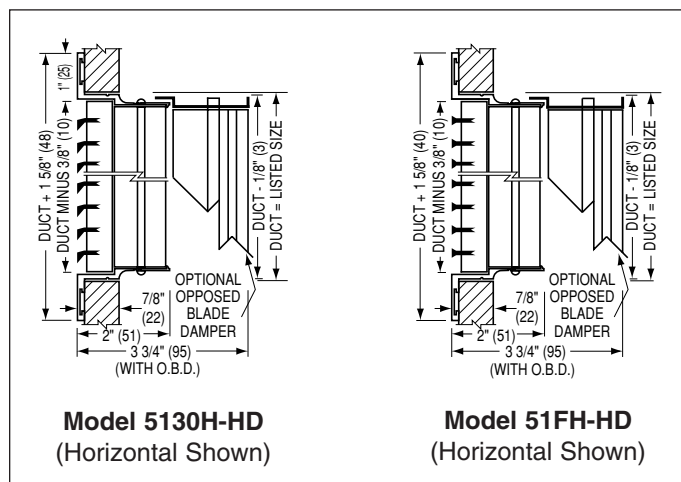
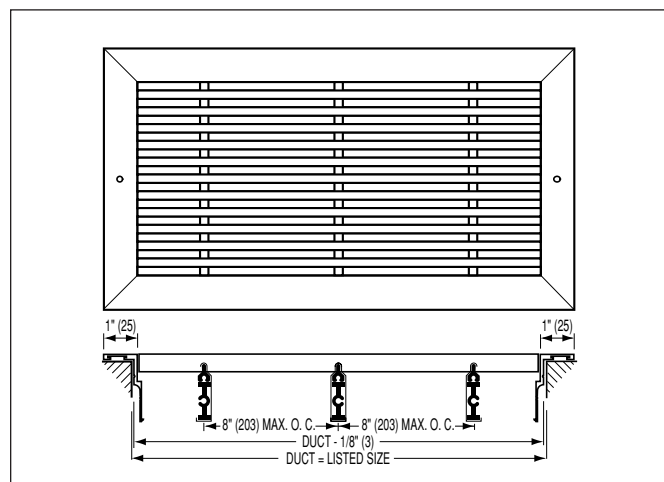
- Fixed front bars on 1/2" (13) centers are available in 0° or 30° deflection.
- 0° models feature 1/8" (3) bars and the 30° model features 1/4" (6) bars.
- High quality heavy duty extruded aluminum frame with reinforced mitered corners.
- 1" (25) wide face border with a 3/4" (19) overlap margin is standard,

furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.

- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

• AW Appliance White baked enamel finish is standard. Other finishes are available.

• Available in sizes from 8" x 4" to 48" x 48" (203 x 102 to 1219 x 1219).



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Heavy Duty Bar Return Grilles and Registers – Model Series 5100-HD

GRILLES AND REGISTERS

		51 30 H - HD - O - 24 x 12 - S - AW - A - —		
MODEL				ACCESSORIES
- Aluminum Construction	51			- None (default) —
				- Plaster Sub-frame PF
RETURN				FASTENING
- Fixed 0° Deflection	F			- Screw Holes (default) A
- Fixed 30° Deflection	30			- Concealed Mounting Straps C
				- None N
BLADE DIRECTION				FINISH
- Horizontal (Blades run long dimension)	H			- Appliance White (default) AW
- Vertical (Blades run short dimension)	V			- Aluminum AL
				- Special Custom Color SP
				- Satin (clear) Anodized SA
HEAVY DUTY	HD			FRAME / BORDER TYPE
				- Surface Mount (default) S
DAMPER (OBD)				
- Steel (standard)	O			
- Aluminum	OA			
- No Damper	—			
WIDTH x HEIGHT				
inches (mm) x inches (mm)				

Notes:

1. For a standard grille with no special requirements specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum 30° deflection register, horizontal blade direction and steel damper, is Model 5130H-HD-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
2. The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **5130H-HD, 5130V-HD, 51FH-HD or 51FV-HD Aluminum Heavy Duty Bar Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum reinforced fixed blades and welded frame with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Aluminum Heavy Duty Return Grilles and Registers • 30° Deflection • 5100-HD Series
Models: 5130H-HD, 5130V-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .004	200 .002 .016	300 .006 .037	400 .010 .065	500 .016 .102	600 .022 .146	700 .031 .199	800 .040 .260	900 .050 .330	1000 .062 .407
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 15	60 21	80 27	100 31	120 35	140 37	160 40	180 44	200 49
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 15	84 21	112 27	140 32	168 36	196 38	224 41	252 45	280 50
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 16	105 22	140 28	175 33	210 37	245 39	280 42	315 46	350 51
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 16	114 22	152 28	190 33	228 38	266 40	304 43	342 47	380 51
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 17	126 23	168 29	210 34	252 38	294 41	336 44	378 48	420 52
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 17	174 23	232 29	290 34	348 38	406 41	464 45	522 49	580 53
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 18	183 24	244 29	305 34	366 38	427 41	488 46	549 49	610 54
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 18	195 24	260 30	325 35	390 39	455 42	520 46	585 50	650 54
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 18	222 25	296 30	370 35	444 40	518 43	592 47	666 51	740 54
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 19	270 25	360 31	450 36	540 40	630 43	720 48	810 51	900 54
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 20	372 26	496 31	620 36	744 41	868 44	992 48	1116 52	1240 55
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 20	411 26	548 32	685 37	822 42	959 45	1096 50	1233 53	1370 56
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 15	304 21	456 26	608 32	760 37	912 42	1064 46	1216 51	1368 54	1520 57
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 15	328 21	492 27	656 33	820 38	984 42	1148 46	1312 51	1476 54	1640 57
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 15	370 21	555 27	740 33	925 38	1110 43	1295 46	1480 51	1665 54	1850 58
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 16	420 22	630 27	840 33	1050 38	1260 43	1470 47	1680 52	1890 55	2100 58
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 16	464 22	696 27	928 33	1160 38	1392 43	1624 47	1856 52	2088 55	2320 59
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 17	522 22	783 27	1044 33	1305 38	1566 43	1827 47	2088 52	2349 55	2610 59
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 17	634 23	951 28	1268 34	1585 39	1902 44	2219 48	2536 52	2853 55	3170 59
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 18	708 24	1062 28	1416 34	1770 39	2124 44	2478 48	2832 53	3186 56	3540 60
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 18	758 24	1137 28	1516 34	1895 39	2274 44	2653 49	3032 53	3411 56	3790 60
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 18	854 24	1281 29	1708 36	2135 41	2562 45	2989 49	3416 54	3843 57	4270 61
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 19	894 25	1341 30	1788 36	2235 41	2682 45	3129 49	3576 54	4023 57	4470 61
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 19	954 25	1431 30	1908 37	2385 42	2862 46	3339 50	3816 54	4293 58	4770 62
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 19	1040 25	1560 30	2080 37	2600 42	3120 46	3640 50	4160 55	4680 58	5200 62
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 19	1148 25	1722 30	2296 37	2870 42	3444 46	4018 50	4592 55	5166 59	5740 63
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 20	1198 26	1797 31	2396 37	2995 42	3594 47	4193 51	4792 55	5391 59	5990 63

Performance Data

Aluminum Heavy Duty Return Grilles and Registers • 30° Deflection • 5100-HD Series
Models: 5130H-HD, 5130V-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .004	200 .002 .016	300 .006 .037	400 .010 .065	500 .016 .102	600 .022 .146	700 .031 .199	800 .040 .260	900 .050 .330	1000 .062 .407
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 20	1368 26	2052 31	2736 37	3420 43	4104 47	4788 51	5472 56	6156 60	6840 64
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 21	1538 26	2307 31	3076 37	3845 43	4614 48	5383 52	6152 56	6921 60	7690 64
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 21	1738 27	2607 32	3476 38	4345 43	5214 48	6083 53	6952 57	7821 61	8690 65
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 22	1940 27	2910 33	3880 38	4850 44	5820 49	6790 53	7760 57	8730 61	9700 65
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 22	2154 27	3231 33	4308 39	5385 45	6462 49	7539 54	8616 57	9693 62	10770 66
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 22	2378 27	3567 33	4756 39	5945 45	7134 50	8323 54	9512 58	10701 62	11890 66
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 22	2614 28	3921 34	5228 39	6535 45	7842 50	9149 54	10456 58	11763 62	13070 66
46 x 46		14.30	13.10	CFM NC	1430 23	2860 29	4290 34	5720 40	7150 46	8580 51	10010 55	11440 59	12870 63	14300 67
48 x 48		15.59	14.26	CFM NC	1559 23	3118 29	4677 35	6236 40	7795 46	9354 51	10913 55	12472 59	14031 63	15590 67

- CFM - cubic feet per minute
 VP - velocity pressure - inches w.g.
 Neg. SP - negative static pressure - inches w.g.
 NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

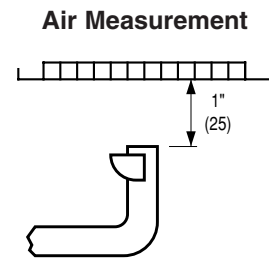
Performance Notes:

1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value – 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
 Airflow (CFM) = Average velocity (V_k) x Ak.

Performance Data

Aluminum Heavy Duty Return Grilles and Registers • 0° Deflection • 5100-HD Series
Models: 51FH-HD, 51FV-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .010	300 .006 .023	400 .010 .041	500 .016 .065	600 .022 .093	700 .031 .127	800 .040 .166	900 .050 .210	1000 .062 .259
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 15	100 19	120 23	140 25	160 28	180 32	200 37
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 15	140 20	168 24	196 26	224 29	252 33	280 38
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 16	175 21	210 25	245 27	280 30	315 34	350 39
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 16	190 21	228 26	266 28	304 31	342 35	380 39
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 17	210 22	252 26	294 29	336 32	378 36	420 40
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 —	232 17	290 22	348 26	406 29	464 33	522 37	580 41
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 —	244 17	305 22	366 26	427 29	488 34	549 37	610 42
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 —	260 18	325 23	390 27	455 30	520 34	585 38	650 42
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 —	296 18	370 23	444 28	518 31	592 35	666 39	740 42
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 19	450 24	540 28	630 31	720 36	810 39	900 42
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 —	496 19	620 24	744 29	868 32	992 36	1116 40	1240 43
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 —	548 20	685 25	822 30	959 33	1096 38	1233 41	1370 44
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 —	608 20	760 25	912 30	1064 34	1216 39	1368 42	1520 45
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 15	656 21	820 26	984 30	1148 34	1312 39	1476 42	1640 45
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 15	740 21	925 26	1110 31	1295 34	1480 39	1665 42	1850 46
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 —	630 15	840 21	1050 26	1260 31	1470 35	1680 40	1890 43	2100 46
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 15	928 21	1160 26	1392 31	1624 35	1856 40	2088 43	2320 47
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 —	783 15	1044 21	1305 26	1566 31	1827 35	2088 40	2349 43	2610 47
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 —	951 15	1268 22	1585 27	1902 32	2219 36	2536 40	2853 43	3170 47
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 —	1062 16	1416 22	1770 27	2124 32	2478 36	2832 41	3186 44	3540 48
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 —	1137 16	1516 22	1895 27	2274 32	2653 37	3032 41	3411 44	3790 48
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 —	1281 17	1708 24	2135 29	2562 33	2989 37	3416 42	3843 45	4270 49
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 —	1341 18	1788 24	2235 29	2682 33	3129 37	3576 42	4023 45	4470 49
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 —	1431 18	1908 25	2385 30	2862 34	3339 38	3816 42	4293 46	4770 50
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 —	1560 18	2080 25	2600 30	3120 34	3640 38	4160 43	4680 46	5200 50
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 —	1722 18	2296 25	2870 30	3444 34	4018 38	4592 43	5166 47	5740 51
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 —	1797 19	2396 25	2995 30	3594 35	4193 39	4792 43	5391 47	5990 51

Performance Data

Aluminum Heavy Duty Return Grilles and Registers • 0° Deflection • 5100-HD Series
Models: 51FH-HD, 51FV-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .003	200 .002 .010	300 .006 .023	400 .010 .041	500 .016 .065	600 .022 .093	700 .031 .127	800 .040 .166	900 .050 .210	1000 .062 .259
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 —	1368 —	2052 19	2736 25	3420 31	4104 35	4788 39	5472 44	6156 48	6840 52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 —	1538 —	2307 19	3076 25	3845 31	4614 36	5383 40	6152 44	6921 48	7690 52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 —	1738 —	2607 20	3476 26	4345 31	5214 36	6083 41	6952 45	7821 49	8690 53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 —	1940 15	2910 21	3880 26	4850 32	5820 37	6790 41	7760 45	8730 49	9700 53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 —	2154 15	3231 21	4308 27	5385 33	6462 37	7539 42	8616 45	9693 50	10770 54
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 —	2378 15	3567 21	4756 27	5945 33	7134 38	8323 42	9512 46	10701 50	11890 54
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 —	2614 16	3921 22	5228 27	6535 33	7842 38	9149 42	10456 46	11763 50	13070 54
46 x 46		14.30	13.10	CFM NC	1430 —	2860 17	4290 22	5720 28	7150 34	8580 39	10010 43	11440 47	12870 51	14300 55
48 x 48		15.59	14.26	CFM NC	1559 —	3118 17	4677 23	6236 28	7795 34	9354 39	10913 43	12472 47	14031 51	15590 55

- CFM** - cubic feet per minute
VP - velocity pressure - inches w.g.
Neg. SP - negative static pressure - inches w.g.
NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

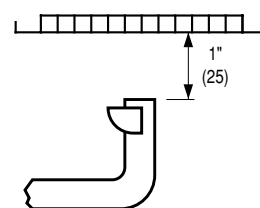
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value – 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Air Measurement



Anor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS

• GYMNASIUM

Double Deflection Models:
61DV-HD and 61DH-HD

Single Deflection Models:
61SV-HD and 61SH-HD

- Suffix '-O' adds a steel opposed blade damper



G

GRILLES AND REGISTERS

The **Nailor Model Series 6100-HD Heavy Duty Supply Grilles and Registers** are designed to combine heavy duty steel construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

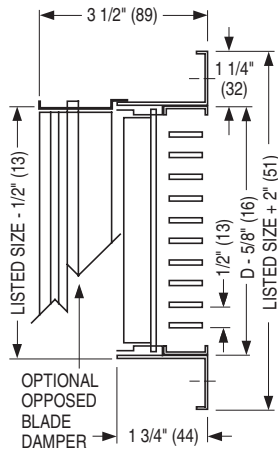
The single deflection models include 14 gauge individually adjustable blades spaced on 1/2" (13) centers. The double deflection models incorporate two sets of individually adjustable perpendicular blades that provide air control in two planes. The front blades are 14 gauge spaced on 1/2" (13) centers and the rear "teardrop" blades are spaced on 3/4" (19) centers. All models have frames that are manufactured from 16 gauge steel and include reinforced mitered corners and welded construction.

FEATURES:

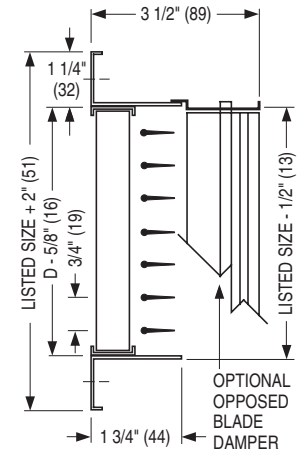
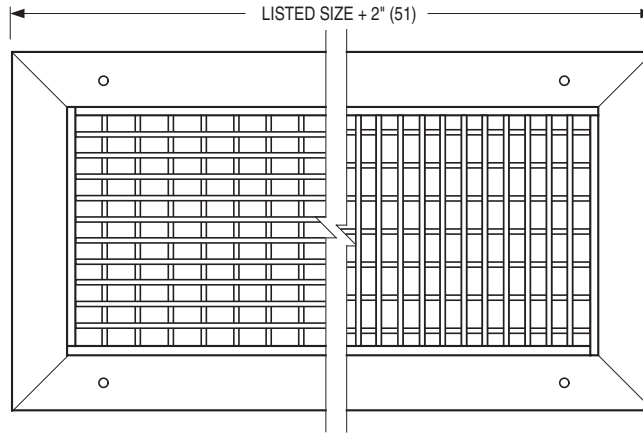
- The single deflection models have 14 gauge steel blades spaced on 1/2" (13) centers.
- The double deflection models feature two sets of perpendicular adjustable blades. Front blades are 14 gauge steel blades spaced on 1/2" (13) centers. Rear "teardrop" blades are spaced on 3/4" (19) centers.
- Heavy duty 16 gauge steel frame with welded and reinforced mitered corners.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin, furnished with screw holes and mounting screws as standard.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219).

Dimensional Data

6100-HD Series • Heavy Duty • Supply

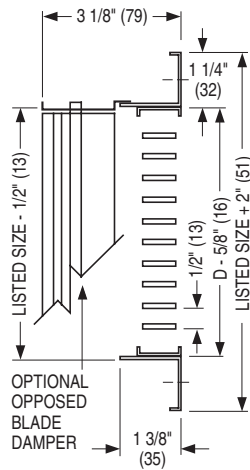


Model 61DH-HD
Horizontal Blades

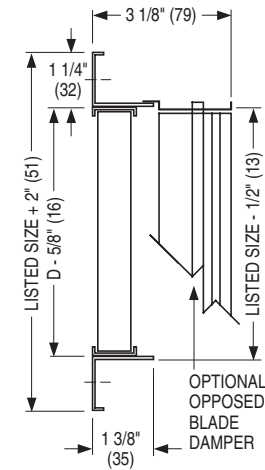
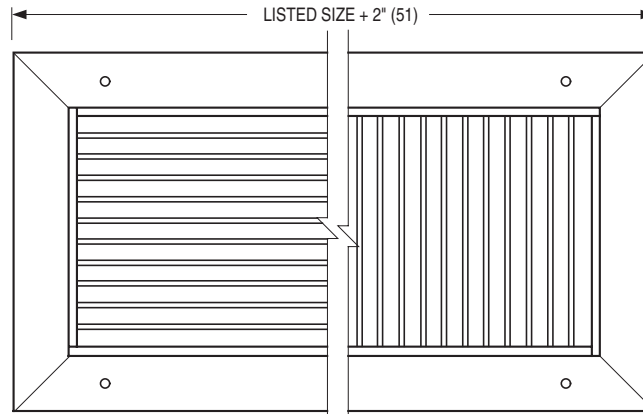


Model 61DV-HD
Vertical Blades

Double Deflection



Model 61SH-HD
Horizontal Blades



Model 61SV-HD
Vertical Blades

Single Deflection

(Show complete Model Number and Size, unless "Default" is desired).

61 D V - HD - O - 24 x 12 - S - AW - A - —

- MODEL**
 - Steel Construction 61
- SUPPLY**
 - Double Deflection D
 - Single Deflection S
- FRONT BLADE DIRECTION**
 - Vertical V
 - Horizontal H
- HEAVY DUTY**
 - HD
- DAMPER (OBD)**
 - Steel O
 - No Damper —
- WIDTH x HEIGHT**
 - 24 x 12
- ACCESSORIES**
 - None (default) —
 - Plaster Sub-frame PF
 - Foam Gasket GK
- FASTENING**
 - Screw Holes (default) A
 - None N
- FINISH**
 - Appliance White (default) AW
 - Aluminum AL
 - Special Custom Color SP
- FRAME/BORDER TYPE**
 - Surface Mount (default) S

inches (mm) x inches (mm)

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel heavy duty double deflection register, front blades vertical and steel damper, is Model 61DV-HD-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
3. The larger dimension must always be specified first; for example, 24 x 12 (610 x 305) not 12 x 24 (305 x 610).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Notes for Heavy Duty Supply Grilles and Registers

6100-HD Series

Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

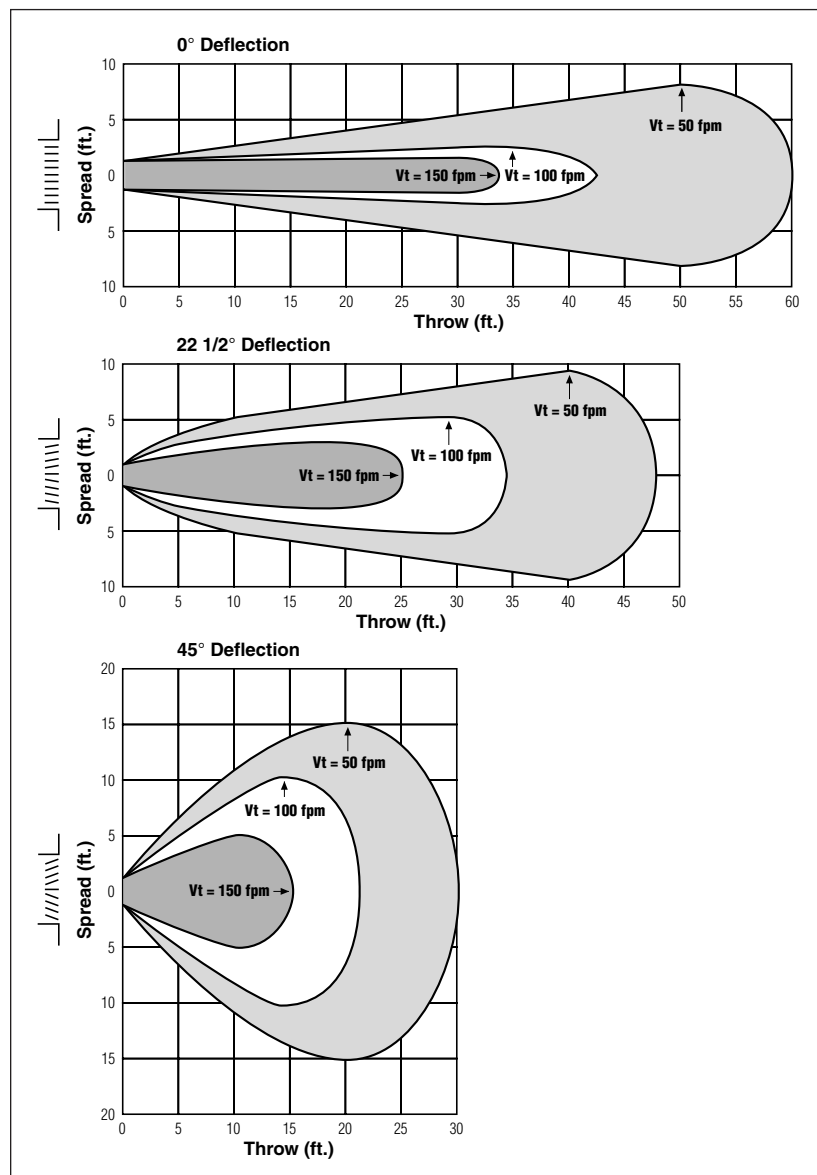
In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The

angle of spread and temperature differential between the supply air and room air (ΔT) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F ΔT) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

Spread Characteristics With Three Deflection Settings



NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

TP Correction Factors for Grilles Without Damper (multiply)

Blade deflection	0°	22 1/2°	45°
Double Defl. Factor	x .80	x .83	x .89
Single Defl. Factor	x .73	x .76	x .85

NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18

Performance Data

Steel Heavy Duty Supply Grilles and Registers • 6100-HD Series

Models: 61DV-HD, 61DH-HD, 61SV-HD, 61SH-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core VP	Core Velocity	300	400	500	600	700	800	1000	1200	1400
				TP	0° 22 1/2° 45°	.006 .015 .017 .026	.010 .026 .030 .046	.016 .041 .047 .072	.022 .059 .068 .103	.031 .081 .093 .142	.040 .106 .122 .186	.062 .165 .190 .289	.090 .238 .274 .417	.122 .324 .373 .567
6 x 6	8 x 4 10 x 4	0.20		CFM	NC	60	80	100	120	140	160	200	240	280
				T	0° 22 1/2° 45°	5-7-13 4-6-10 3-4-7	7-9-16 6-7-13 4-5-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-15-21 9-12-17 6-8-11	12-16-23 10-13-18 6-8-12	15-18-25 12-14-20 8-9-13	16-20-27 13-16-22 8-10-14	17-21-30 14-17-24 9-11-15
				CFM	NC	81	108	135	162	189	216	270	324	378
8 x 6	10 x 5 12 x 4	0.27		T	0° 22 1/2° 45°	5-8-15 4-6-12 3-4-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-16-23 9-13-18 6-8-12	13-18-25 10-14-20 7-9-13	15-19-27 12-15-22 8-10-14	17-21-30 14-17-24 9-11-15	18-23-32 14-18-26 9-12-16	19-24-35 15-19-28 10-12-18
				CFM	NC	105	140	175	210	245	280	350	420	490
				T	0° 22 1/2° 45°	6-9-18 5-7-14 3-5-9	9-13-21 7-10-17 5-7-11	10-16-24 8-13-19 5-8-12	12-19-26 10-15-21 6-10-13	15-20-28 12-16-22 8-10-14	17-21-30 14-17-24 9-11-15	20-23-33 16-18-26 10-12-17	21-25-36 17-20-29 11-13-18	22-27-39 18-22-31 11-14-20
10 x 6	12 x 5 16 x 4	0.35		CFM	NC	114	152	190	228	266	304	380	456	532
				T	0° 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-29 13-17-23 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-26-37 17-21-30 11-13-19	23-28-40 18-22-32 12-14-20
				CFM	NC	126	168	210	252	294	336	420	504	588
12 x 6	14 x 5	0.38		T	0° 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-29 13-17-23 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-26-37 17-21-30 11-13-19	23-28-40 18-22-32 12-14-20
				CFM	NC	126	168	210	252	294	336	420	504	588
				T	0° 22 1/2° 45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-29 13-17-23 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-26-37 17-21-30 11-13-19	23-28-40 18-22-32 12-14-20
14 x 6	18 x 4	0.42		CFM	NC	150	200	250	300	350	400	500	600	700
				T	0° 22 1/2° 45°	6-11-20 5-9-16 3-6-10	10-15-23 8-12-18 5-8-12	12-18-25 10-14-20 6-9-13	15-20-28 12-16-22 8-10-14	16-22-31 13-18-25 8-11-16	19-23-33 15-18-26 10-12-17	21-25-36 17-20-29 11-13-18	23-28-40 18-22-32 12-14-20	25-31-43 20-25-34 13-16-22
				CFM	NC	174	232	290	348	406	464	580	696	812
12 x 8	16 x 6 24 x 4	0.58		T	0° 22 1/2° 45°	7-11-21 6-9-17 4-6-11	10-15-24 8-12-19 5-8-12	12-19-27 10-15-22 6-10-14	15-21-30 12-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-34 16-19-27 10-12-17	22-27-38 18-22-30 11-14-19	24-30-42 19-24-34 12-15-21	26-32-45 21-26-36 13-16-23
				CFM	NC	183	244	305	366	427	488	610	732	854
				T	0° 22 1/2° 45°	7-11-21 6-9-17 4-6-11	10-16-24 8-13-19 5-8-12	13-19-28 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-35 16-19-28 10-12-18	23-28-39 18-22-31 12-14-20	24-30-43 19-24-34 12-15-22	27-32-46 22-26-37 14-16-23
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM	NC	195	260	325	390	455	520	650	780	910
				T	0° 22 1/2° 45°	7-12-22 6-10-18 4-6-11	11-16-25 9-13-20 6-8-13	13-20-29 10-16-23 7-10-15	16-22-32 13-18-26 8-11-16	18-24-34 14-19-27 9-12-17	21-25-36 17-20-29 11-13-18	24-29-40 19-23-32 12-15-20	25-32-45 20-26-36 13-16-23	28-34-48 22-27-38 14-17-24
				CFM	NC	222	296	370	444	518	592	740	888	1036
12 x 10	20 x 6 24 x 5	0.74		T	0° 22 1/2° 45°	8-13-24 6-10-19 4-7-12	11-17-27 9-14-22 6-9-14	14-21-31 11-17-25 7-11-16	17-24-33 14-19-26 9-12-17	20-26-36 16-21-29 10-13-18	22-27-39 18-22-31 11-14-20	25-31-43 20-25-34 13-16-22	27-33-48 22-26-38 14-17-24	30-36-51 24-29-41 15-18-26
				CFM	NC	240	320	400	480	560	640	800	960	1120
				T	0° 22 1/2° 45°	8-13-25 6-10-20 4-7-13	11-18-28 9-14-22 6-9-14	15-22-32 12-18-26 8-11-16	18-25-35 14-20-28 9-13-18	20-27-38 16-22-30 10-14-19	23-28-41 18-22-33 12-14-21	26-32-45 21-26-36 13-16-23	28-35-50 22-28-40 14-18-25	31-38-53 25-30-42 16-19-27
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM	NC	270	360	450	540	630	720	900	1080	1260
				T	0° 22 1/2° 45°	9-14-26 7-11-21 5-7-13	12-18-29 10-14-23 6-9-15	15-23-33 12-18-26 8-12-17	18-26-36 14-21-29 9-13-18	21-27-39 17-22-31 11-14-20	24-29-42 19-23-34 12-15-21	27-33-47 22-26-38 14-17-24	29-36-51 23-29-41 15-18-26	32-39-56 26-31-45 16-20-28
				CFM	NC	339	452	565	678	791	904	1130	1356	1582
18 x 10	30 x 6	1.13		T	0° 22 1/2° 45°	9-15-29 7-12-23 5-8-15	14-20-33 11-16-26 7-10-17	17-25-36 14-20-29 9-13-18	20-29-40 16-23-32 10-15-20	24-30-43 19-24-34 12-15-22	27-33-46 22-26-37 14-17-23	30-36-51 24-29-41 15-18-26	33-40-57 26-32-46 17-20-29	35-43-61 28-34-49 18-22-31

G

GRILLES AND REGISTERS

Performance Data

Steel Heavy Duty Supply Grilles and Registers • 6100-HD Series

Models: 61DV-HD, 61DH-HD, 61SV-HD, 61SH-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
				TP 22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM NC	372	496	620	744	868	992	1240	1488	1736
				0°	—	10	17	22	27	31	37	43	48
			.84 .73 .64	T 0° 22 1/2° 45°	11-18-33 9-14-26 6-9-17	16-25-39 13-20-31 8-13-20	20-29-42 16-23-34 10-15-21	24-33-47 19-26-38 12-17-24	27-36-51 22-29-41 14-18-26	31-39-54 25-31-43 16-20-27	35-42-60 28-34-48 18-21-30	39-47-66 31-38-53 20-24-33	41-51-71 33-41-57 21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM NC	411	548	685	822	959	1096	1370	1644	1918
				0°	—	11	18	23	28	32	38	44	49
			.93 .81 .71	T 0° 22 1/2° 45°	11-18-33 9-14-26 6-9-17	16-25-39 13-20-31 8-13-20	20-30-43 16-24-34 10-15-22	24-33-47 19-26-38 12-17-24	28-36-51 22-29-41 14-18-26	32-39-54 26-31-43 16-20-27	35-43-61 28-34-49 18-22-31	39-47-67 31-38-54 20-24-34	41-51-72 33-41-58 21-26-36
24 x 10	20 x 12 30 x 8	1.52		CFM NC	456	608	760	912	1064	1216	1520	1824	2128
				0°	—	11	18	23	28	32	38	44	49
			1.03 .90 .78	T 0° 22 1/2° 45°	12-19-35 10-15-28 6-10-18	16-25-41 13-20-33 8-13-21	21-32-45 17-26-36 11-16-23	25-35-50 20-28-40 13-18-25	29-38-53 23-30-42 15-19-27	34-41-57 27-33-46 17-21-29	37-45-64 30-36-51 19-23-32	41-50-70 33-40-56 21-25-35	43-53-76 34-42-61 22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM NC	492	656	820	984	1148	1312	1640	1968	2296
				0°	—	11	18	23	28	32	38	44	49
			1.12 .97 .84	T 0° 22 1/2° 45°	12-20-37 10-16-30 6-10-19	17-26-42 14-21-34 9-13-21	22-32-47 18-26-38 11-16-24	26-37-51 21-30-41 13-19-26	31-40-56 25-32-45 16-20-28	35-42-59 28-34-47 18-21-30	39-47-67 31-38-54 20-24-34	42-51-73 34-41-58 21-26-37	46-56-79 37-45-63 23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM NC	555	740	925	1110	1295	1480	1850	2220	2590
				0°	—	12	19	24	29	33	39	45	50
			1.26 1.09 .95	T 0° 22 1/2° 45°	12-20-38 10-16-30 6-10-19	18-27-44 14-22-35 9-14-22	22-33-48 18-26-38 11-17-24	27-38-54 22-30-43 14-19-27	32-40-58 26-32-46 16-20-29	36-44-62 29-35-50 18-22-31	40-48-69 32-38-55 20-24-35	44-54-76 35-43-61 22-27-38	48-58-82 38-46-66 24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM NC	630	840	1050	1260	1470	1680	2100	2520	2940
				0°	—	12	19	24	29	33	39	45	50
			1.43 1.24 1.08	T 0° 22 1/2° 45°	13-21-40 10-17-32 7-11-20	19-29-47 15-23-38 10-15-24	24-36-52 19-29-42 12-18-26	29-40-57 23-32-46 15-20-29	33-43-62 26-34-50 17-22-31	38-47-66 30-38-53 19-24-33	42-52-74 34-42-59 21-26-37	47-57-81 38-46-65 24-29-41	50-62-87 40-50-70 25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM NC	696	928	1160	1392	1624	1856	2320	2784	3248
				0°	—	13	20	25	30	34	40	46	51
			1.58 1.37 1.19	T 0° 22 1/2° 45°	14-23-43 11-18-34 7-12-22	21-31-50 17-25-40 11-16-25	26-39-56 21-31-45 13-20-28	31-43-61 25-34-49 16-22-31	36-47-67 29-38-54 18-24-34	41-50-71 33-40-57 21-25-36	46-56-79 32-45-63 23-28-40	50-61-86 40-49-69 25-31-43	54-67-94 43-54-75 27-34-47
24 x 16	32 x 12	2.50		CFM NC	750	1000	1250	1500	1750	2000	2500	3000	3500
				0°	—	13	20	25	30	34	40	46	51
			1.70 1.48 1.29	T 0° 22 1/2° 45°	14-24-45 11-19-36 7-12-23	22-32-52 18-26-42 11-16-26	27-40-58 22-32-46 14-20-29	32-45-64 26-36-51 19-25-34	37-49-68 30-39-54 19-25-34	43-52-74 34-42-59 22-26-37	48-58-82 38-46-66 26-32-45	52-64-90 42-51-72 28-32-45	56-68-97 45-54-78 28-34-49
20 x 20	22 x 18	2.61		CFM NC	783	1044	1305	1566	1827	2088	2610	3132	3654
				0°	—	13	20	25	30	34	40	46	51
			1.77 1.54 1.34	T 0° 22 1/2° 45°	15-24-46 12-19-37 8-12-23	22-32-53 18-26-42 11-16-27	27-41-59 22-33-47 14-21-30	32-46-65 26-37-52 16-23-33	38-50-70 30-40-56 19-25-35	44-53-75 35-42-60 22-27-38	49-59-84 39-47-67 25-30-42	53-65-92 42-52-74 27-33-46	58-70-99 46-56-79 29-35-50
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM NC	837	1116	1395	1674	1953	2232	2790	3348	3906
				0°	—	13	20	25	30	34	40	46	51
			1.90 1.65 1.44	T 0° 22 1/2° 45°	15-25-48 12-20-38 8-13-24	23-34-55 18-27-44 12-17-28	28-42-61 22-34-49 14-21-31	34-48-68 27-38-54 17-24-34	4-51-73 32-41-58 20-26-37	45-55-77 36-44-62 23-28-39	50-61-86 40-49-69 25-31-43	55-68-95 44-54-76 28-34-48	59-73-103 47-58-82 30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM NC	951	1268	1585	1902	2219	2536	3170	3804	4438
				0°	—	14	21	26	31	35	41	47	52
			2.16 1.87 1.63	T 0° 22 1/2° 45°	17-27-50 14-22-40 9-14-25	24-36-58 19-29-46 12-18-29	29-45-65 23-36-52 15-23-33	36-50-71 29-40-57 18-25-36	42-54-77 34-43-62 21-27-39	47-58-82 38-46-66 24-29-41	53-65-92 42-52-74 27-33-46	58-71-101 46-57-81 29-36-51	62-77-109 50-62-87 31-39-55
42 x 12	36 x 14	3.27		CFM NC	981	1308	1635	1962	2289	2616	3270	3924	4578
				0°	—	14	21	26	31	35	41	47	52
			2.22 1.93 1.68	T 0° 22 1/2° 45°	17-27-51 14-22-41 9-14-26	24-36-59 19-29-47 12-18-30	30-45-66 24-36-53 15-23-33	36-51-72 29-41-58 18-26-36	42-55-77 34-44-62 21-28-39	48-59-83 38-47-66 24-30-42	53-66-93 42-53-74 27-33-47	59-72-101 47-58-81 3-36-51	63-77-109 50-62-87 32-39-55
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM NC	1062	1416	1770	2124	2478	2832	3540	4248	4956
				0°	—	14	21	26	31	35	41	47	52
			2.41 2.09 1.82	T 0° 22 1/2° 45°	18-28-53 14-22-42 9-14-27	25-37-61 20-30-49 13-19-31	31-47-69 25-38-55 16-24-35	37-53-75 30-42-60 19-27-38	44-57-81 35-46-65 22-29-41	50-61-86 40-49-69 25-31-43	56-69-97 45-55-78 28-35-49	61-75-106 49-60-85 31-38-53	66-81-115 53-65-92 33-41-58

Performance Data

Steel Heavy Duty Supply Grilles and Registers • 6100-HD Series

Models: 61DV-HD, 61DH-HD, 61SV-HD, 61SH-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
				22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM	1137	1516	1895	2274	2653	3032	3790	4548	5306
				NC	—	14	21	26	31	35	41	47	52
			2.58	0°	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
			2.24	22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM	1287	1716	2145	2574	3003	3432	4290	5148	6006
				NC	—	15	22	27	32	36	42	48	53
			2.92	0°	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
			2.53	22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
26 x 26	28 x 24 48 x 14	4.47		CFM	1341	1788	2235	2682	3129	3576	4470	5364	6258
				NC	—	15	22	27	32	36	42	48	53
			3.04	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
			2.64	22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM	1431	1908	2385	2862	3339	3816	4770	5724	6678
				NC	—	15	22	27	32	36	42	48	53
			3.24	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
			2.81	22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
42 x 18	28 x 26	4.99		CFM	1497	1996	2495	2994	3493	3992	4990	5988	6986
				NC	—	16	23	28	33	37	43	49	54
			3.39	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
			2.94	22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM	1560	2080	2600	3120	3640	4160	5200	6240	7280
				NC	—	16	23	28	33	37	43	49	54
			3.54	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
			3.07	22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
42 x 20	30 x 28	5.57		CFM	1671	2228	2785	3342	3899	4456	5570	6684	7798
				NC	—	16	23	28	33	37	43	49	54
			3.79	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
			3.29	22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114
36 x 24	40 x 22 44 x 20	5.74		CFM	1722	2296	2870	3444	4018	4592	5740	6888	8036
				NC	—	16	23	28	33	37	43	49	54
			3.90	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
			3.39	22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM	1797	2396	2995	3594	4193	4792	5990	7188	8386
				NC	—	16	23	28	33	37	43	49	54
			4.07	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
			3.53	22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM	2016	2688	3360	4032	4704	5376	6720	8064	9408
				NC	—	17	24	29	34	38	44	50	55
			4.57	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
			3.96	22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
32 x 32	40 x 26	6.84		CFM	2052	2736	3420	4104	4788	5472	6840	8208	9576
				NC	—	17	24	29	34	38	44	50	55
			4.65	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
			4.04	22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	73-90-126
36 x 30	38 x 28	7.22		CFM	2166	2888	3610	4332	5054	5776	7220	8664	10108
				NC	—	17	24	29	34	38	44	50	55
			4.91	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
			4.26	22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM	2307	3076	3845	4614	5383	6152	7690	9228	10766
				NC	—	18	25	30	35	39	45	51	56
			5.23	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
			4.54	22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
			3.96	45°	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	41-50-71	45-55-78	49-59-84

Performance Data

Steel Heavy Duty Supply Grilles and Registers • 6100-HD Series

Models: 61DV-HD, 61DH-HD, 61SV-HD, 61SH-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	1000 .062	1200 .090	1400 .122
				0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
				TP 22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
36 x 34	38 x 32 40 x 30 48 x 26	8.20		CFM NC	2460 —	3280 18	4100 25	4920 30	5740 35	6560 39	8200 45	9840 51	11480 56
			5.58	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
			4.84	22 1/2°	21-34-63	30-46-73	38-56-82	46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	78-97-137
			4.22	45°	13-21-40	19-29-46	24-35-51	29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86
36 x 36	38 x 34 42 x 30 46 x 28	8.69		CFM NC	2607 —	3476 18	4345 25	5214 30	6083 35	6952 39	8690 45	10428 51	12166 56
			5.91	0°	28-45-84	39-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
			5.13	22 1/2°	22-36-67	31-48-77	39-59-86	48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	83-102-144
			4.48	45°	14-23-42	20-30-48	25-37-54	30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90
38 x 38	42 x 34	9.70		CFM NC	2910 10	3880 19	4850 26	5820 31	6790 36	7760 40	9700 46	11640 52	13580 57
			6.60	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
			5.72	22 1/2°	22-38-70	34-50-81	42-62-91	50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	87-107-152
			5.00	45°	14-24-44	21-31-51	27-39-57	31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95
42 x 36	44 x 34 48 x 30	10.16		CFM NC	3048 10	4064 19	5080 26	6096 31	7112 36	8128 40	10160 46	12192 52	14224 57
			6.91	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
			5.99	22 1/2°	23-38-72	34-51-83	42-64-94	51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	90-110-156
			5.23	45°	15-24-45	22-32-52	27-40-59	32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98
40 x 40	42 x 38 46 x 34 48 x 32	10.77		CFM NC	3231 10	4308 19	5385 26	6462 31	7539 36	8616 40	10770 46	12924 52	15078 57
			7.32	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
			6.35	22 1/2°	25-40-75	35-54-86	45-67-97	54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	94-114-162
			5.55	45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	50-61-86	54-66-94	59-72-102
42 x 42	44 x 40 46 x 38 48 x 36	11.89		CFM NC	3567 11	4756 20	5945 27	7134 32	8323 37	9512 41	11890 47	14268 53	16646 58
			8.09	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-149-210
			7.02	22 1/2°	26-42-78	37-55-90	46-69-100	55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	98-119-168
			6.12	45°	16-26-49	23-35-56	29-43-63	35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105
44 x 44	46 x 42	13.07		CFM NC	3921 11	5228 20	6535 27	7842 32	9149 37	10456 41	13070 47	15684 53	18298 58
			8.89	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
			7.71	22 1/2°	27-44-83	39-59-96	49-74-106	59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	103-126-178
			6.73	45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112
46 x 46		14.30		CFM NC	4290 11	5720 20	7150 27	8580 32	10010 37	11440 41	14300 47	17160 53	20020 58
			9.72	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
			8.44	22 1/2°	28-46-86	41-61-99	50-76-110	61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	107-130-185
			7.36	45°	18-29-54	26-38-62	32-48-69	38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	68-82-116
48 x 48		15.59		CFM NC	4677 12	6236 21	7795 28	9354 33	10913 38	12472 42	15590 48	18708 54	21826 59
			10.60	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
			9.20	22 1/2°	30-48-90	42-64-105	54-80-117	64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	112-138-195
			8.03	45°	19-30-57	27-40-66	34-50-73	40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122

CFM - cubic feet per minute

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts @ 0° deflection.

Core velocity is in feet per minute.

Performance Notes:

1. Performance data is based on double deflection grille with opposed blade damper (register).

2. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.

3. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.

4. Additional performance notes and correction factors for various models and settings may be found on page G132.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

STEEL HEAVY DUTY RETURN GRILLES

• GYMNASIUM

Models:

**6145H-HD 45° Deflection
Horizontal Blades**

**6145V-HD 45° Deflection
Vertical Blades**

**61FH-HD 0° Deflection
Horizontal Blades**

**61FV-HD 0° Deflection
Vertical Blades**

- Suffix '-O' adds a steel opposed blade damper



The **Nailor Model Series 6100-HD Heavy Duty Return Grilles and Registers** are designed to combine heavy duty steel construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

Heavy duty 14 gauge blades on 1/2" (13) centers are available with either a 45° or 0° fixed deflection setting. Blades are individually welded in position and are supported on maximum 6" (152) centers with heavy duty concealed support mullions for added strength, which are in turn welded to the grille frame. Frames are manufactured from 16 gauge steel and include reinforced mitered corners and welded construction.

FEATURES:

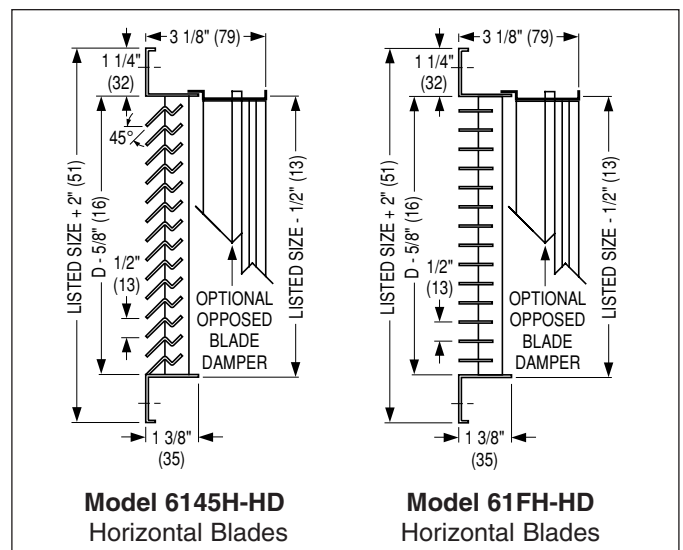
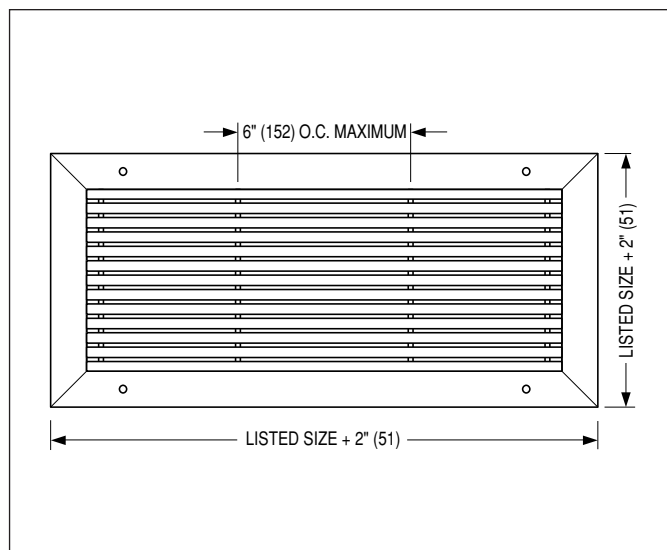
- Fixed 14 gauge steel blades on 1/2" (13) centers are available in 0° or 45° deflection.
- Heavy duty 16 gauge steel frame with welded and reinforced mitered corners.
- 1 1/4" (32) wide face border with a 1" (25) overlap margin is standard,

furnished with countersunk screw holes and mounting screws.

- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.

- AW Appliance White baked enamel finish is standard. Other finishes are available.

- Available in sizes from 6" x 6" to 48" x 48" (152 x 152 to 1219 x 1219).



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Steel Heavy Duty Return Grilles and Registers – Model Series 6100-HD

GRILLES AND REGISTERS

		61 45 H - HD - O - 24 x 12 - S - AW - A - —		
MODEL	_____			ACCESSORIES
- Steel Construction	61			- None (default) —
RETURN	_____			FASTENING
- Fixed 0° Deflection	F			- Screw Holes (default) A
- Fixed 45° Deflection	45			- None N
BLADE DIRECTION	_____			FINISH
- Horizontal (Blades run long dimension)	H			- Appliance White (default) AW
- Vertical (Blades run short dimension)	V			- Aluminum AL
				- Special Custom Color SP
HEAVY DUTY	_____	HD		FRAME / BORDER TYPE
				- Surface Mount (default) S
DAMPER (OBD)	_____			
- Steel	O			
- No Damper	—			
WIDTH x HEIGHT	_____			
	inches (mm) x inches (mm)			

Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel 45° deflection register, horizontal blade orientation and steel damper, is Model 6145H-HD-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
2. The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6145H-HD, 6145V-HD, 61FH-HD or 61FV-HD Steel Heavy Duty Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have fixed 14 gauge steel blades spaced on 1/2" (13) centers and a heavy duty 16 gauge steel welded frame. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Steel Heavy Duty Return Grilles and Registers • 45° Deflection • 6100-HD Series

Models: 6145H-HD, 6145V-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	200 .002 .021	300 .006 .046	400 .010 .082	500 .016 .129	600 .022 .185	700 .031 .252	800 .040 .330	900 .050 .417	1000 .062 .515
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 15	100 20	120 25	140 30	160 34	180 38	200 42
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 16	140 21	168 26	196 31	224 35	252 39	280 43
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 17	175 22	210 27	245 32	280 36	315 40	350 44
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 18	190 23	228 28	266 33	304 37	342 41	380 45
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 19	210 24	252 29	294 33	336 38	378 42	420 46
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 15	232 20	290 25	348 30	406 34	464 39	522 43	580 47
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 15	244 20	305 25	366 30	427 35	488 40	549 43	610 47
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 15	260 21	325 26	390 31	455 36	520 40	585 44	650 47
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 16	296 21	370 26	444 31	518 36	592 41	666 45	740 48
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 17	360 22	450 27	540 32	630 37	720 42	810 45	900 48
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 18	496 22	620 27	744 32	868 37	992 42	1116 46	1240 49
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 19	548 24	685 29	822 34	959 39	1096 44	1233 47	1370 50
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 19	608 24	760 29	912 34	1064 39	1216 45	1368 48	1520 51
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 20	656 25	820 30	984 35	1148 40	1312 45	1476 48	1640 51
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 15	555 20	740 25	925 30	1110 35	1295 40	1480 45	1665 48	1850 52
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 15	630 20	840 25	1050 30	1260 36	1470 41	1680 46	1890 49	2100 52
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 15	696 20	928 26	1160 31	1392 36	1624 41	1856 46	2088 49	2320 53
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 15	783 20	1044 26	1305 31	1566 37	1827 42	2088 47	2349 50	2610 53
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 16	951 21	1268 27	1585 32	1902 38	2219 42	2536 47	2853 50	3170 54
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 16	1062 21	1416 27	1770 32	2124 38	2478 43	2832 48	3186 51	3540 55
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 16	1137 21	1516 27	1895 32	2274 38	2653 43	3032 48	3411 51	3790 55
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 17	1281 22	1708 29	2135 34	2562 40	2989 45	3416 50	3843 53	4270 57
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 17	1341 22	1788 29	2235 34	2682 40	3129 45	3576 50	4023 53	4470 57
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 18	1431 23	1908 30	2385 35	2862 41	3339 46	3816 50	4293 54	4770 58
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 18	1560 23	2080 30	2600 35	3120 41	3640 46	4160 51	4680 54	5200 58

Performance Data

Steel Heavy Duty Return Grilles and Registers • 45° Deflection • 6100-HD Series

Models: 6145H-HD, 6145V-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	200 .002 .021	300 .006 .046	400 .010 .082	500 .016 .129	600 .022 .185	700 .031 .252	800 .040 .330	900 .050 .417	1000 .062 .515
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 18	1722 23	2296 30	2870 36	3444 42	4018 47	4592 51	5166 55	5740 59
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 18	1797 23	2396 30	2995 36	3594 42	4193 47	4792 51	5391 55	5990 59
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 15	1368 19	2052 24	2736 31	3420 37	4104 43	4788 47	5472 52	6156 56	6840 60
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 16	1538 20	2307 25	3076 31	3845 37	4614 43	5383 48	6152 52	6921 56	7690 60
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 17	1738 21	2607 25	3476 32	4345 37	5214 44	6083 49	6952 53	7821 57	8690 61
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 17	1940 22	2910 26	3880 32	4850 38	5820 44	6790 49	7760 53	8730 57	9700 61
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 17	2154 22	3231 27	4308 33	5385 39	6462 45	7539 51	8616 54	9693 59	10770 63
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 18	2378 23	3567 28	4756 34	5945 40	7134 46	8323 51	9512 55	10701 59	11890 63
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 18	2614 23	3921 28	5228 34	6535 40	7842 46	9149 51	10456 55	11763 59	13070 63
46 x 46		14.30	13.10	CFM NC	1430 19	2860 24	4290 29	5720 35	7150 41	8580 47	10010 52	11440 56	12870 60	14300 64
48 x 48		15.59	14.26	CFM NC	1559 19	3118 24	4677 29	6236 35	7795 41	9354 47	10913 52	12472 56	14031 60	15590 64

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

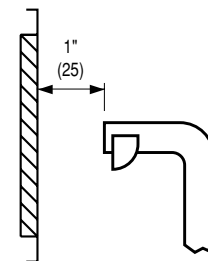
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value - 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 1991.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (Vk) x Ak.

Performance Data

Steel Heavy Duty Return Grilles and Registers • 0° Deflection • 6100-HD Series

Models: 61FH-HD, 61FV-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .002	200 .002 .009	300 .006 .020	400 .010 .036	500 .016 .057	600 .022 .082	700 .031 .111	800 .040 .145	900 .050 .183	1000 .062 .226
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 —	100 —	120 18	140 20	160 23	180 27	200 32
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 —	140 15	168 19	196 21	224 24	252 28	280 33
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 —	175 16	210 20	245 22	280 25	315 29	350 34
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 —	190 16	228 21	266 23	304 26	342 30	380 34
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 —	210 17	252 21	294 24	336 27	378 31	420 35
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 —	232 —	290 17	348 21	406 24	464 28	522 32	580 36
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 —	244 —	305 17	366 21	427 24	488 29	549 32	610 37
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 —	260 —	325 18	390 22	455 25	520 29	585 33	650 37
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 —	296 —	370 18	444 23	518 26	592 30	666 34	740 37
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 —	450 19	540 23	630 26	720 31	810 34	900 37
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 —	496 —	620 19	744 24	868 27	992 31	1116 35	1240 38
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 —	548 15	685 20	822 25	959 28	1096 33	1233 36	1370 39
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 —	608 15	760 20	912 25	1064 29	1216 34	1368 37	1520 40
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 —	656 16	820 21	984 25	1148 29	1312 34	1476 37	1640 40
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 —	740 16	925 21	1110 26	1295 29	1480 34	1665 37	1850 41
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 —	630 —	840 16	1050 21	1260 26	1470 30	1680 35	1890 38	2100 41
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 —	928 16	1160 21	1392 26	1624 30	1856 35	2088 38	2320 42
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 —	783 —	1044 16	1305 21	1566 26	1827 30	2088 35	2349 38	2610 42
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 —	951 —	1268 17	1585 22	1902 27	2219 31	2536 35	2853 38	3170 42
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 —	1062 —	1416 17	1770 22	2124 27	2478 31	2832 36	3186 39	3540 43
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 —	1137 —	1516 17	1895 22	2274 27	2653 32	3032 36	3411 39	3790 43
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 —	1281 —	1708 19	2135 24	2562 28	2989 32	3416 37	3843 40	4270 44
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 —	1341 —	1788 19	2235 24	2682 28	3129 32	3576 37	4023 40	4470 44
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 —	1431 —	1908 20	2385 25	2862 29	3339 33	3816 37	4293 41	4770 45
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 —	1560 —	2080 20	2600 25	3120 29	3640 33	4160 38	4680 41	5200 45

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GRILLES AND REGISTERS

Performance Data

Steel Heavy Duty Return Grilles and Registers • 0° Deflection • 6100-HD Series

Models: 61FH-HD, 61FV-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .002	200 .002 .009	300 .006 .020	400 .010 .036	500 .016 .057	600 .022 .082	700 .031 .111	800 .040 .145	900 .050 .183	1000 .062 .226
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 —	1722 —	2296 20	2870 25	3444 29	4018 33	4592 38	5166 42	5740 46
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 —	1797 —	2396 20	2995 25	3594 30	4193 34	4792 38	5391 42	5990 46
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 —	1368 —	2052 —	2736 20	3420 26	4104 30	4788 34	5472 39	6156 43	6840 47
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 —	1538 —	2307 —	3076 20	3845 26	4614 31	5383 35	6152 39	6921 43	7690 47
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 —	1738 —	2607 —	3476 21	4345 26	5214 31	6083 36	6952 40	7821 44	8690 48
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 —	1940 —	2910 —	3880 21	4850 27	5820 32	6790 36	7760 40	8730 44	9700 48
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 —	2154 —	3231 —	4308 22	5385 28	6462 32	7539 37	8616 40	9693 45	10770 49
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 —	2378 —	3567 —	4756 22	5945 28	7134 33	8323 37	9512 41	10701 45	11890 49
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 —	2614 —	3921 17	5228 22	6535 28	7842 33	9149 37	10456 41	11763 45	13070 49
46 x 46		14.30	13.10	CFM NC	1430 —	2860 —	4290 17	5720 23	7150 29	8580 34	10010 38	11440 42	12870 46	14300 50
48 x 48		15.59	14.26	CFM NC	1559 —	3118 —	4677 18	6236 23	7795 29	9354 34	10913 38	12472 42	14031 46	15590 50

CFM - cubic feet per minute

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

Performance Notes:

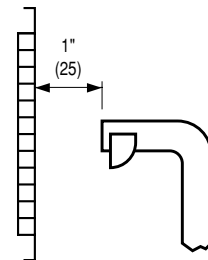
1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value - 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 1991.

Air Measurement



Anor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

HEAVY DUTY STAINLESS STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

Models:

6755H-HD and 6755V-HD

- Suffix '-O' adds a stainless steel opposed blade damper



Models 6755H-HD and 6755V-HD Heavy Duty Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

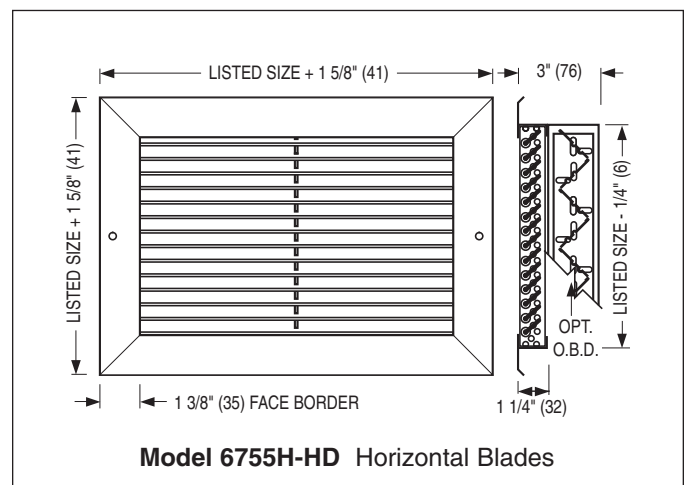
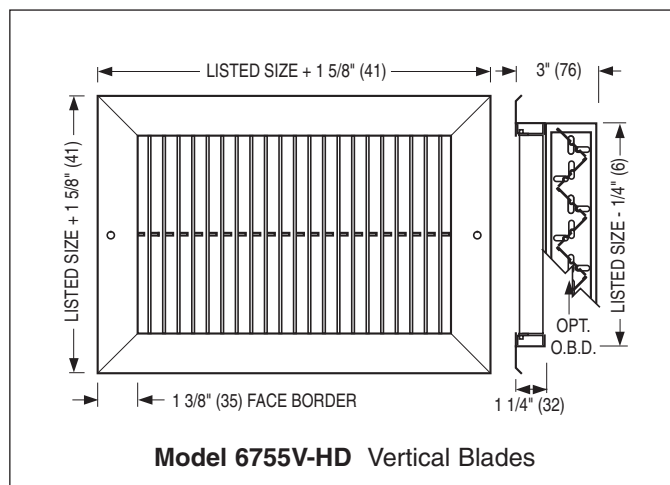
The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a 'no see-through' design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

FEATURES:

- Type 304 stainless steel construction.
- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined airfoil shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Blades are reinforced by an additional support mullion on maximum 8" (203) centers.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.
- #3 Satin polished finish is standard. AW Appliance White baked enamel finish is optional. Other finishes are available.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).
- Type 316 stainless steel construction available as an option.

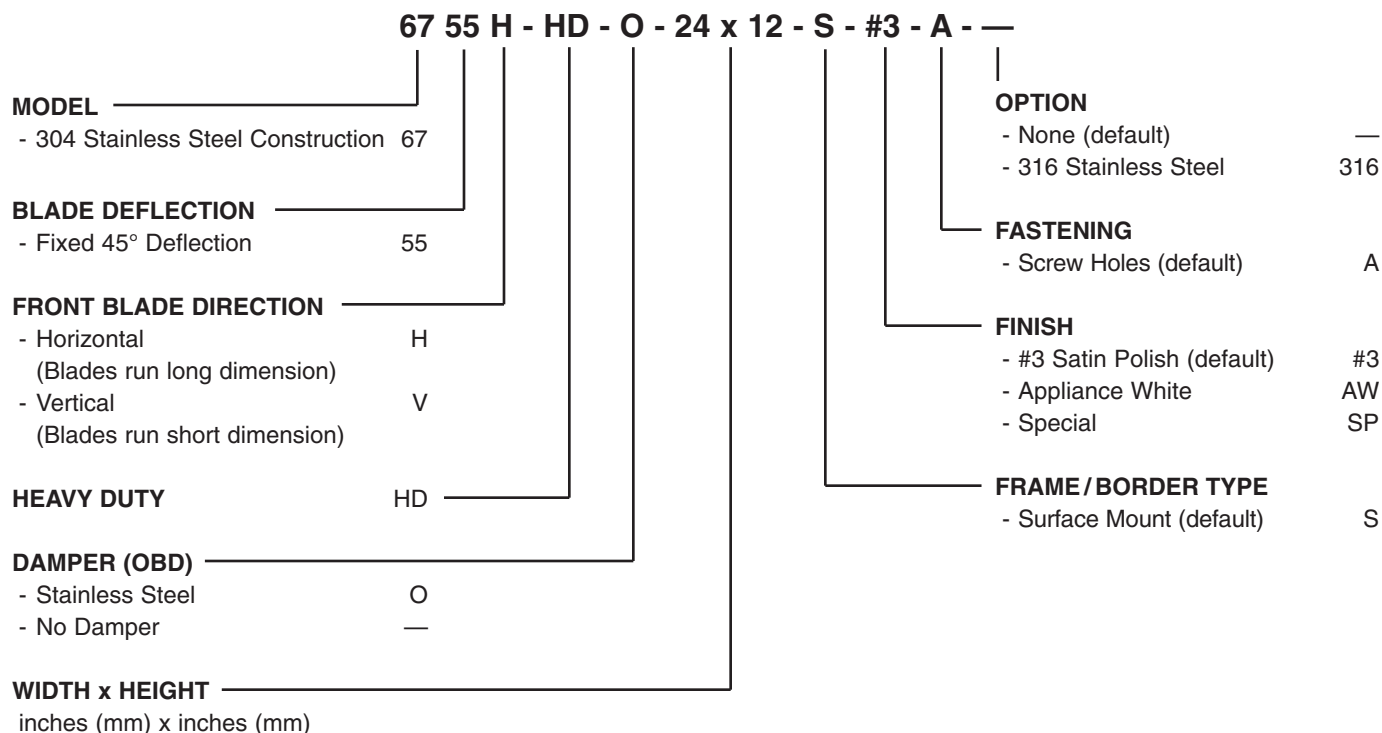


HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Stainless Steel Heavy Duty Return Grilles and Registers – Model Series 6700-HD

GRILLES AND REGISTERS



Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a stainless steel, 45° deflection register, horizontal blade direction and stainless steel damper is Model 6755H-HD-O. Unit will be supplied with #3 satin polished finish and screw holes.
- The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6755H-HD** or **6755V-HD Stainless Steel Heavy Duty Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall be constructed entirely from 304 stainless steel (316 optional) with welded and reinforced frames. The blades shall be fixed at 45°, spaced on 1/2" (13) centers, and shall be reinforced by a support mullion on maximum 8" (203) centers. All exposed surfaces shall have a #3 satin polished finish.

(Optional) A stainless steel opposed blade damper, adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Stainless Steel Heavy Duty Return Grilles and Registers • 45° Deflection • 6700-HD Series
Models: 6755H-HD, 6755V-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	200 .002 .019	300 .006 .042	400 .010 .075	500 .016 .117	600 .022 .169	700 .031 .230	800 .040 .300	900 .050 .380	1000 .062 .469
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM NC	20 —	40 —	60 —	80 —	100 17	120 22	140 27	160 31	180 35	200 39
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM NC	28 —	56 —	84 —	112 —	140 18	168 23	196 28	224 32	252 36	280 40
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM NC	35 —	70 —	105 —	140 —	175 19	210 24	245 29	280 33	315 37	350 41
8 x 8	14 x 5	0.38	0.40	CFM NC	38 —	76 —	114 —	152 15	190 20	228 25	266 30	304 34	342 38	380 42
12 x 6	18 x 4	0.42	0.45	CFM NC	42 —	84 —	126 —	168 16	210 21	252 26	294 30	336 35	378 39	420 43
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM NC	58 —	116 —	174 —	232 17	290 22	348 27	406 31	464 36	522 40	580 44
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM NC	61 —	122 —	183 —	244 17	305 22	366 27	427 32	488 37	549 40	610 44
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM NC	65 —	130 —	195 —	260 18	325 23	390 28	455 33	520 37	585 41	650 44
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM NC	74 —	148 —	222 —	296 18	370 23	444 28	518 33	592 38	666 42	740 45
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM NC	90 —	180 —	270 —	360 19	450 24	540 29	630 34	720 39	810 42	900 45
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM NC	124 —	248 —	372 —	496 19	620 24	744 29	868 34	992 39	1116 43	1240 46
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM NC	137 —	274 —	411 16	548 21	685 26	822 31	959 36	1096 41	1233 44	1370 47
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM NC	152 —	304 —	456 16	608 21	760 26	912 31	1064 36	1216 42	1368 45	1520 48
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM NC	164 —	328 —	492 17	656 22	820 27	984 32	1148 37	1312 42	1476 45	1640 48
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM NC	185 —	370 —	555 17	740 22	925 27	1110 32	1295 37	1480 42	1665 45	1850 49
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM NC	210 —	420 —	630 17	840 22	1050 27	1260 33	1470 38	1680 43	1890 46	2100 49
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM NC	232 —	464 —	696 17	928 23	1160 28	1392 33	1624 38	1856 43	2088 46	2320 50
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM NC	261 —	522 —	783 17	1044 23	1305 28	1566 34	1827 39	2088 44	2349 47	2610 50
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM NC	317 —	634 —	951 18	1268 24	1585 29	1902 35	2219 39	2536 44	2853 47	3170 51
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM NC	354 —	708 —	1062 18	1416 24	1770 29	2124 35	2478 40	2832 45	3186 48	3540 52
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM NC	379 —	758 —	1137 18	1516 24	1895 29	2274 35	2653 40	3032 45	3411 48	3790 52
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM NC	427 —	854 —	1281 19	1708 26	2135 30	2562 37	2989 42	3416 47	3843 50	4270 54
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM NC	447 —	894 —	1341 19	1788 26	2235 31	2682 37	3129 42	3576 47	4023 50	4470 54
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM NC	477 —	954 —	1431 20	1908 27	2385 32	2862 38	3339 43	3816 47	4293 51	4770 55
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM NC	520 —	1040 —	1560 20	2080 27	2600 32	3120 38	3640 43	4160 48	4680 51	5200 55
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM NC	574 —	1148 —	1722 20	2296 27	2870 33	3444 39	4018 43	4592 48	5166 52	5740 56
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM NC	599 —	1198 —	1797 20	2396 27	2995 33	3594 39	4193 44	4792 48	5391 52	5990 56

Performance Data

Stainless Steel Heavy Duty Return Grilles and Registers • 45° Deflection • 6700-HD Series
Models: 6755H-HD, 6755V-HD

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity VP Neg. SP	100 .001 .005	200 .002 .019	300 .006 .042	400 .010 .075	500 .016 .117	600 .022 .169	700 .031 .230	800 .040 .300	900 .050 .380	1000 .062 .469
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM NC	684 —	1368 16	2052 21	2736 28	3420 34	4104 40	4788 44	5472 49	6156 53	6840 57
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM NC	769 —	1538 17	2307 22	3076 28	3845 34	4614 40	5383 45	6152 49	6921 53	7690 57
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM NC	869 —	1738 18	2607 22	3476 29	4345 34	5214 41	6083 46	6952 50	7821 54	8690 58
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM NC	970 —	1940 19	2910 23	3880 29	4850 35	5820 41	6790 46	7760 50	8730 54	9700 58
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM NC	1077 —	2154 19	3231 24	4308 30	5385 36	6462 42	7539 48	8616 51	9693 56	10770 60
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM NC	1189 15	2378 20	3567 25	4756 31	5945 37	7134 43	8323 48	9512 52	10701 56	11890 60
44 x 44	46 x 42	13.07	11.98	CFM NC	1307 15	2614 20	3921 25	5228 31	6535 37	7842 43	9149 48	10456 52	11763 56	13070 60
46 x 46		14.30	13.10	CFM NC	1430 16	2860 21	4290 26	5720 32	7150 38	8580 44	10010 49	11440 53	12870 57	14300 61
48 x 48		15.59	14.26	CFM NC	1559 16	3118 21	4677 26	6236 32	7795 38	9354 44	10913 49	12472 53	14031 57	15590 61

CFM - cubic feet per minute
VP - velocity pressure - inches w.g.
Neg. SP - negative static pressure - inches w.g.
NC - Noise Criteria values are based on 10 dB room absorption, re 10⁻¹² watts.

Core Velocity is in feet per minute.

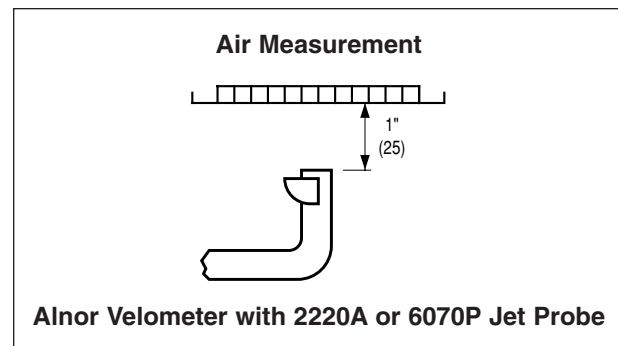
Performance Notes:

1. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. SP Listed Value x 0.91.

NC Listed value - 4.

2. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 1991.



Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

DRUM LOUVERS 45DL SERIES

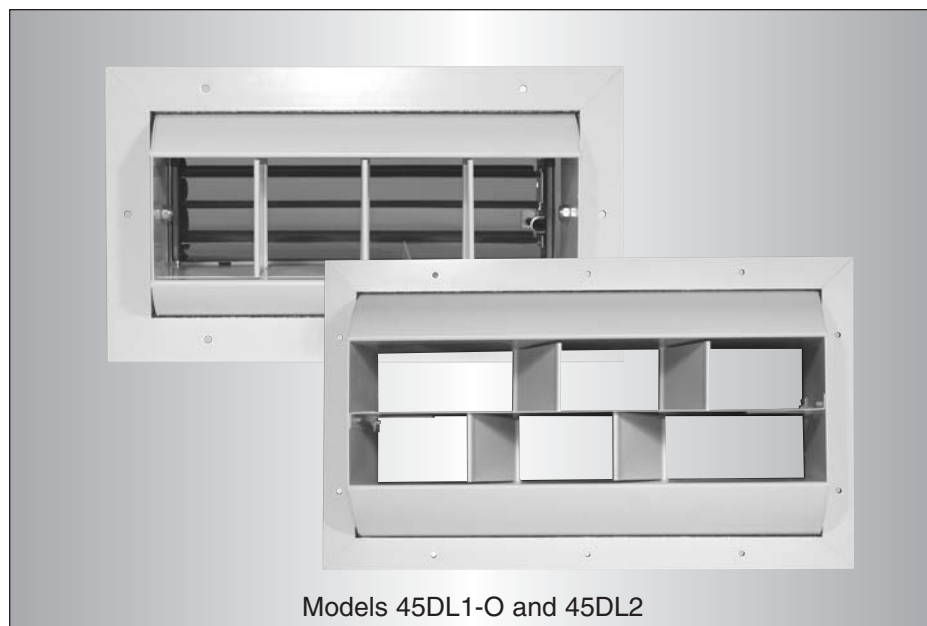
- HIGH CAPACITY
- LONG THROW
- ALUMINUM CONSTRUCTION

Models:

45DL1 Single Vanes

45DL2 Split Vanes

- Suffix '-O' adds a steel opposed blade damper



Models 45DL1-O and 45DL2

Model Series 45DL Drum Louvers are supply air outlets engineered for use in cooling, heating, and ventilating applications requiring long throws and accurate directional control of conditioned air in large enclosed spaces where ductwork cannot be brought close to the occupants. Typically, they are used in sport arenas, exhibition halls, manufacturing and industrial plants, office building entrances, lobbies, shopping malls and atriums.

Model Series 45DL Drum Louvers are designed to provide jet or diffused air patterns in ceiling, sidewall and exposed duct applications. In sidewall and exposed duct installations, the **Model Series 45DL** can be mounted vertically or horizontally.

Model Series 45DL are ideal for vertical spot cooling or heating when mounted in the ceiling or on the bottom of exposed ductwork. They are capable of supplying straight flow primary air jet streams at 0° deflection for long throws, and a diffused pattern of primary air at 15° and 30° deflections for shorter throws and greater spread. There is a difference of approximately 35 percent in throw between jet and diffused air patterns. The cylindrical drum enables primary air to be directed horizontally or vertically within a 60° arc, and when coupled with the adjustable louvers provides accurate directional control of primary air for people, plant or product.

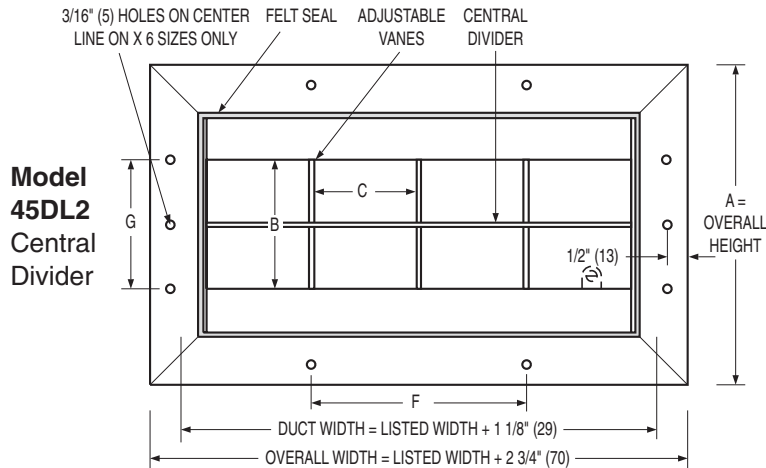
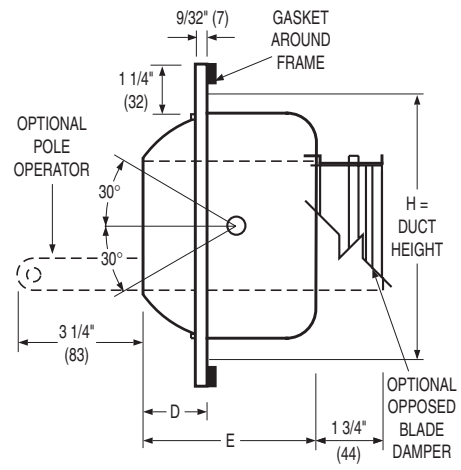
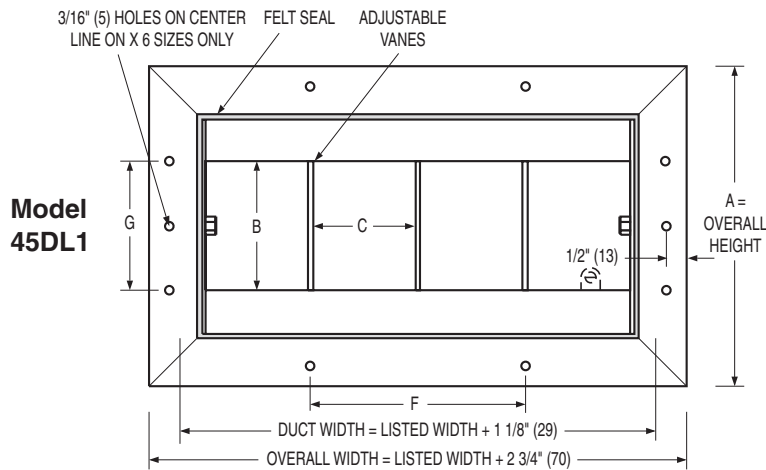
Model 45DL2 features a split-vane option. The individual vanes are separated by a central divider and may be adjusted in opposite directions to produce a 'counter flow' air pattern. This creates more rapid mixing of primary and room air and a further reduction in the length of throw. With this option you therefore have the utmost versatility for all applications.

FEATURES:

- Rotating adjustable cylindrical drums are tightly pivoted to the end caps of the 1 1/4" (32) wide border frames and are supplied with 3/16" (5) diameter face screw mounting holes and a perimeter frame gasket.
- Felt seal around the rotating drum to minimize air leakage.
- Paddle-size deflection vanes are rear pivoted on nylon bushings in the rectangular drum opening, and tightly hold deflection angle settings regardless of duct velocity and pressure levels.
- The Drum Louver is rated for use at capacities ranging from 100 to 14,000 cfm.
- Sizes available are 6" (152), 10" (254), 12" (305) and 15" (381) in height and 9" (229) through 72" (1829) in width. See dimensional data on next page for available increments.
- An optional pole operator is available to allow directional control of airflow in remote mounted locations.
- An optional opposed blade damper is available with a screwdriver slot operator accessible through the discharge opening. However, they are not recommended where the static pressure drop across the drum louver exceeds 0.25" w.g.. Under these conditions balancing should be performed by a remote damper installed in the take-off.
- High quality, extruded aluminum construction.
- AW Appliance White baked enamel finish is standard. Other finishes are available.

Dimensional Data

Model Series 45DL Drum Louvers



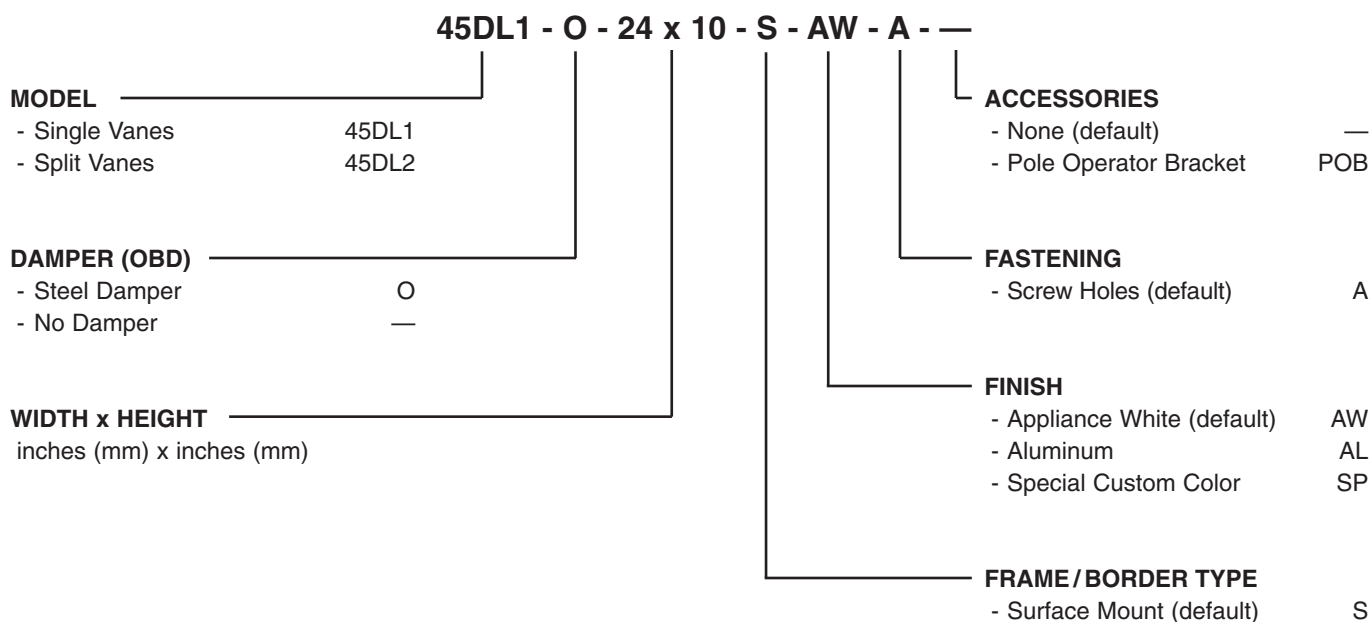
HEIGHT	6		10		12		15	
LISTED SIZES NOMINAL WIDTH x HEIGHT IN INCHES	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES
	9 x 6	2	18 x 10	2	18 x 12	2	18 x 15	2
	12 x 6	3	24 x 10	3	24 x 12	3	24 x 15	3
	18 x 6	5	30 x 10	4	30 x 12	4	30 x 15	4
	24 x 6	7	36 x 10	5	36 x 12	5	36 x 15	5
	30 x 6	9	42 x 10	6	42 x 12	6	42 x 15	6
	36 x 6	11	48 x 10	7	48 x 12	7	48 x 15	7
	48 x 6	15	54 x 10	8	54 x 12	8	54 x 15	8
	54 x 6	17	60 x 10	9	60 x 12	9	60 x 15	9
	60 x 6	19	72 x 10	11	72 x 12	11	72 x 15	11

DIMENSIONS IN INCHES (MM)	H	6 7/8 (175)	10 1/2 (267)	12 1/2 (318)	15 1/2 (384)
	A	8 1/2 (216)	12 1/8 (308)	14 1/8 (359)	17 1/8 (435)
	B	3 3/8 (86)	5 3/8 (137)	6 3/8 (162)	9 3/8 (238)
	C	3 (76)	6 (152)	6 (152)	6 (152)
	D	1 11/16 (43)	2 21/32 (67)	3 9/32 (83)	3 3/4 (95)
	E	4 1/2 (114)	6 1/4 (159)	7 1/8 (181)	8 3/4 (222)
	F	6 (152)	6 (152)	6 (152)	6 (152)
	G	—	6 (152)	6 (152)	9 (229)

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Drum Louvers – Model Series 45DL



G

GRILLES AND REGISTERS

Notes:

1. Damper not recommended where the static pressure drop across the drum louver exceeds 0.25" w.g.
2. For a standard drum louver with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a split vanes drum louver and damper is Model 45DL2-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **45DL1** or **45DL2 Drum Louvers** of the type and size as shown on the plans and air distribution schedules. The louver is to be manufactured from extruded aluminum and have a cylindrical adjustable drum that rotates. The blades are to have a paddle like profile that pivot on nylon bushings. A perimeter gasket is to be included around the frame and a felt seal is to be around the drum. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the louver, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Model Series 45DL • 6" (152) Drum Louver

SIZE	Neck Velocity, FPM VP	280 .005	420 .011	560 .020	700 .031	840 .044	980 .060	1120 .078	1400 .122	1680 .176
9 x 6	Airflow, CFM	105	158	210	263	315	368	420	525	630
	TP	.022	.06	.10	.16	.21	.30	.40	.60	.90
	T	7-10-18	10-14-24	13-18-30	15-21-35	17-23-40	20-28-46	22-30-50	26-35-56	30-40-66
	NC	—	—	—	22	27	32	36	41	46
12 x 6	Airflow, CFM	140	210	280	350	420	490	560	700	840
	TP	.03	.06	.10	.16	.23	.32	.40	.63	.90
	T	8-11-18	12-16-27	16-21-34	18-24-40	20-26-45	23-31-50	25-34-55	30-40-66	35-47-76
	NC	—	—	—	23	28	33	37	42	47
18 x 6	Airflow, CFM	210	315	420	525	630	735	840	1050	1260
	TP	.022	.06	.10	.16	.24	.33	.40	.60	.90
	T	12-16-27	17-22-36	21-27-45	25-32-52	28-37-62	31-42-70	34-46-76	42-54-90	48-62-101
	NC	—	—	—	24	29	34	38	43	49
24 x 6	Airflow, CFM	280	420	560	700	840	980	1120	1400	1680
	TP	.03	.06	.10	.16	.24	.32	.40	.63	.90
	T	16-21-33	21-28-44	26-33-54	31-40-64	35-45-72	38-50-80	42-52-88	48-64-100	52-71-110
	NC	—	—	—	26	31	36	40	47	52
30 x 6	Airflow, CFM	350	525	700	875	1050	1225	1400	1750	2100
	TP	.022	.06	.10	.16	.21	.32	.40	.63	.90
	T	19-24-38	25-32-50	30-38-60	35-45-70	39-50-78	43-56-86	47-60-94	54-70-100	60-78-120
	NC	—	—	20	27	32	37	41	48	53
36 x 6	Airflow, CFM	420	630	840	1050	1260	1470	1680	2100	2520
	TP	.03	.06	.10	.16	.22	.30	.40	.60	.90
	T	20-26-40	26-35-54	32-41-64	36-46-74	40-52-82	44-55-90	48-62-100	54-72-115	62-80-130
	NC	—	—	21	28	33	38	42	49	55
48 x 6	Airflow, CFM	565	848	1130	1412	1695	1978	2260	2825	3390
	TP	.03	.06	.10	.16	.24	.32	.40	.63	.90
	T	24-31-39	31-42-63	37-49-76	44-56-89	48-62-100	50-70-110	58-74-120	65-82-130	74-95-150
	NC	—	—	22	29	34	39	43	50	56
60 x 6	Airflow, CFM	700	1050	1400	1750	2100	2450	2800	3500	4200
	TP	.03	.06	.10	.16	.24	.32	.40	.63	.90
	T	28-36-54	36-46-66	43-55-84	49-63-96	52-70-110	60-75-120	65-82-130	75-90-150	84-105-170
	NC	—	—	23	30	35	40	44	51	57

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. Total pressure, throw and NC are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed below.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15°	x 1.5	x .85	+ 4
	30°	x 1.9	x .73	+ 9
45DL2	0°	x 1.3	-	-
	15°	x 1.7	x .85	+ 4
	30°	x 2.2	x .73	+ 9

Performance Data

Model Series 45DL • 10" (254) Drum Louver

SIZE	Neck Velocity, FPM VP	270 .005	400 .012	536 .018	670 .028	800 .040	940 .055	1075 .072	1340 .112	1610 .162
18 x 10	Airflow, CFM	336	504	672	840	1008	1176	1344	1680	2016
	TP	.02	.05	.08	.10	.18	.19	.25	.40	.60
	T	15-20-32	21-28-45	26-35-52	32-42-64	34-44-74	36-50-78	44-54-90	48-65-100	54-72-110
	NC	—	—	—	26	33	39	44	52	60
24 x 10	Airflow, CFM	450	675	900	1125	1350	1575	1800	2250	2700
	TP	.02	.05	.08	.13	.18	.20	.3	.45	.7
	T	19-25-40	25-35-52	30-42-64	35-46-74	38-52-80	44-58-94	50-65-100	54-72-110	64-82-125
	NC	—	—	21	30	34	43	48	58	63
30 x 10	Airflow, CFM	560	840	1120	1400	1680	1960	2240	2800	3360
	TP	.02	.05	.08	.13	.18	.24	.31	.48	.7
	T	22-28-46	29-40-62	35-46-74	42-55-86	46-62-96	50-68-100	54-72-110	65-82-130	72-92-145
	NC	—	—	23	31	38	46	50	58	64
36 x 10	Airflow, CFM	670	1005	1340	1675	2010	2345	2680	3350	4020
	TP	.02	.04	.08	.13	.18	.25	.32	.48	.7
	T	23-32-52	30-43-68	36-50-82	44-60-98	50-68-105	56-76-115	60-80-120	70-90-140	80-105-170
	NC	—	—	25	34	40	47	52	60	68
42 x 10	Airflow, CFM	785	1177	1570	1962	2355	2748	3140	3925	4710
	TP	.02	.05	.08	.13	.19	.26	.34	.52	.75
	T	25-34-54	32-45-70	40-54-86	46-62-100	54-72-110	60-80-120	66-86-140	75-100-150	88-115-180
	NC	—	—	26	35	42	48	53	60	69
48 x 10	Airflow, CFM	895	1342	1790	2238	2685	3133	3580	4475	5370
	TP	.02	.04	.08	.13	.17	.24	.32	.48	.68
	T	26-34-58	33-48-73	43-58-94	53-74-108	56-76-116	60-80-120	66-90-140	78-105-150	90-110-180
	NC	—	—	26	35	41	47	52	61	68
54 x 10	Airflow, CFM	1010	1515	2020	2525	3030	3535	4040	5050	6060
	TP	.02	.05	.08	.13	.17	.24	.31	.47	.68
	T	28-36-60	35-50-75	45-60-96	55-76-110	60-80-120	65-88-135	70-95-145	82-110-160	95-120-190
	NC	—	—	27	35	42	48	53	61	68
60 x 10	Airflow, CFM	1120	1680	2240	2800	3360	3920	4480	5600	6720
	TP	.02	.05	.08	.13	.17	.23	.30	.46	.68
	T	32-42-68	40-54-72	50-68-100	58-76-120	65-84-130	70-92-140	78-100-150	90-120-180	100-130-190
	NC	—	—	27	35	42	48	53	61	68
72 x 10	Airflow, CFM	1345	2018	2690	3362	4035	4707	5380	6725	8070
	TP	.02	.05	.08	.13	.19	.26	.35	.52	.75
	T	34-44-72	44-58-90	54-70-110	62-82-130	70-92-140	78-100-160	85-110-170	98-130-200	110-140-230
	NC	—	—	28	37	44	48	54	63	70

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. Total pressure, throw and NC are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed below.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15°	x 1.5	x .85	+ 4
	30°	x 1.9	x .73	+ 9
45DL2	0°	x 1.3	-	-
	15°	x 1.7	x .85	+ 4
	30°	x 2.2	x .73	+ 9

Performance Data

Model Series 45DL • 12" (305) Drum Louver

SIZE	Neck Velocity, FPM VP	265 .004	400 .010	530 .018	660 .027	795 .039	930 .054	1060 .070	1325 .109	1600 .160
18 x 12	Airflow, CFM	400	600	800	1000	1200	1400	1600	2000	2400
	TP	.033	.08	.14	.22	.30	.44	.55	.86	1.04
	T	14-20-34	19-27-46	24-34-60	30-40-70	35-47-78	38-56-95	44-60-100	50-70-120	55-80-130
	NC	—	—	—	25	32	36	40	47	52
24 x 12	Airflow, CFM	530	795	1060	1325	1590	1855	2120	2650	3180
	TP	.03	.07	.13	.20	.29	.42	.53	.82	1.10
	T	17-24-42	24-34-54	26-37-64	35-47-78	38-56-95	45-65-110	52-72-120	65-85-140	72-98-160
	NC	—	—	—	27	32	35	40	46	52
30 x 12	Airflow, CFM	665	998	1330	1662	1993	2328	2660	3324	3990
	TP	.03	.06	.10	.14	.21	.28	.35	.58	.80
	T	18-25-44	26-37-64	33-45-76	37-54-90	45-65-110	50-70-120	58-80-130	67-92-155	85-110-180
	NC	—	—	21	27	32	38	40	48	54
36 x 12	Airflow, CFM	800	1200	1600	2000	2400	2800	3200	4000	4800
	TP	.03	.05	.08	.12	.17	.22	.30	.46	.63
	T	22-31-54	30-44-74	38-54-90	46-64-110	50-70-120	58-80-135	65-90-150	78-105-180	90-120-200
	NC	—	—	22	28	34	38	42	50	55
42 x 12	Airflow, CFM	930	1395	1860	2325	2790	3255	3720	4650	5580
	TP	.03	.05	.10	.16	.22	.31	.40	.62	.80
	T	25-35-60	34-46-80	44-58-100	50-70-120	58-80-130	65-90-150	75-100-170	85-115-200	100-140-230
	NC	—	—	26	31	35	41	45	52	55
48 x 12	Airflow, CFM	1065	1598	2130	2663	3195	3728	4260	5326	6390
	TP	.03	.06	.08	.14	.20	.28	.36	.56	.80
	T	25-33-53	35-46-82	44-56-96	52-70-115	58-78-125	60-95-150	75-100-170	88-120-210	100-140-230
	NC	—	—	26	31	36	41	45	52	55
54 x 12	Airflow, CFM	1200	1800	2400	3000	3600	4200	4800	6000	7200
	TP	.03	.06	.11	.17	.25	.34	.42	.68	.95
	T	27-36-63	37-50-88	46-62-108	56-75-130	65-85-145	72-98-160	80-105-180	95-125-220	110-150-250
	NC	—	—	24	31	36	41	45	52	55
60 x 12	Airflow, CFM	1350	2025	2700	3375	4050	4725	5400	6750	8100
	TP	.03	.06	.11	.17	.22	.30	.38	.58	.83
	T	28-37-65	42-56-100	47-63-110	54-74-130	64-84-150	72-100-170	80-110-190	92-120-240	110-140-260
	NC	—	—	20	28	33	37	42	48	54
72 x 12	Airflow, CFM	1600	2400	3200	4000	4800	5600	6400	8000	9600
	TP	.03	.06	.11	.17	.22	.30	.38	.58	.83
	T	32-42-72	42-54-100	52-72-120	62-74-140	72-100-170	82-110-190	92-120-240	110-140-260	120-160-290
	NC	—	—	25	31	36	41	45	52	55

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. Total pressure, throw and NC are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed below.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15°	x 1.5	x .85	+ 4
	30°	x 1.9	x .73	+ 9
45DL2	0°	x 1.3	-	-
	15°	x 1.7	x .85	+ 4
	30°	x 2.2	x .73	+ 9

Performance Data

Model Series 45DL • 15" (381) Drum Louver

SIZE	Neck Velocity, FPM VP	312 .006	470 .014	625 .024	780 .038	935 .054	1090 .074	1250 .097	1560 .152	1870 .218
18 x 15	Airflow, CFM	585	878	1170	1463	1755	2048	2340	2925	3510
	TP	.02	.05	.09	.14	.21	.27	.36	.55	.82
	T	15-21-36	21-30-52	28-40-67	32-45-75	37-51-94	42-59-100	47-65-110	58-82-140	66-92-160
	NC	—	—	22	28	33	38	42	49	54
24 x 15	Airflow, CFM	780	1170	1560	1950	2340	2730	3120	3900	4680
	TP	.02	.04	.08	.12	.19	.25	.34	.50	.68
	T	18-25-45	25-35-62	33-46-80	40-55-100	45-64-110	54-75-130	60-84-140	70-100-170	80-110-190
	NC	—	—	22	28	34	39	43	50	55
30 x 15	Airflow, CFM	975	1463	1950	2438	2925	3413	3900	4875	5850
	TP	.02	.05	.08	.13	.20	.25	.34	.50	.72
	T	21-30-52	30-42-74	38-54-97	45-64-110	54-75-130	60-84-140	66-94-160	80-110-190	92-130-225
	NC	—	—	22	29	35	40	44	51	56
36 x 15	Airflow, CFM	1170	1755	2340	2925	3510	4095	4680	5850	7020
	TP	.025	.05	.10	.15	.20	.26	.36	.55	.78
	T	23-33-58	32-45-80	40-56-100	47-65-110	56-76-130	62-88-150	70-100-170	80-110-190	110-130-220
	NC	—	—	25	32	37	42	45	52	58
42 x 15	Airflow, CFM	1365	2048	2730	3413	4095	4778	5460	6825	8190
	TP	.02	.05	.10	.15	.22	.30	.38	.60	.85
	T	27-37-66	38-52-92	47-65-110	56-76-130	62-88-150	70-100-170	80-110-190	100-130-220	110-150-260
	NC	—	—	25	31	36	41	44	51	57
48 x 15	Airflow, CFM	1565	2348	3130	3913	4695	5478	6260	7825	9390
	TP	.02	.05	.08	.13	.18	.25	.33	.50	.8
	T	28-40-70	40-55-100	50-70-120	60-82-140	70-98-160	80-110-190	90-130-220	110-150-260	120-180-300
	NC	—	—	25	32	37	42	45	52	58
54 x 15	Airflow, CFM	1760	2640	3520	4400	5280	6160	7040	8800	10560
	TP	.025	.05	.10	.16	.21	.30	.40	.65	.85
	T	30-44-75	44-60-110	54-78-130	65-90-160	75-105-180	90-120-210	100-135-240	120-160-280	130-180-310
	NC	—	—	26	32	37	42	45	52	58
60 x 15	Airflow, CFM	1950	2925	3900	4875	5850	6825	7800	9750	11700
	TP	.02	.045	.08	.12	.17	.25	.30	.50	.75
	T	34-45-76	44-60-110	54-78-130	65-90-160	75-105-180	90-120-210	100-135-240	120-160-280	130-180-310
	NC	—	—	26	33	38	43	46	53	59
72 x 15	Airflow, CFM	2345	3518	4690	5863	7035	8208	9380	11725	14070
	TP	.02	.05	.10	.14	.20	.26	.33	.55	.80
	T	37-50-90	50-70-120	62-88-160	76-100-190	90-125-220	100-140-250	115-150-280	130-190-330	160-220-400
	NC	—	—	27	34	39	44	47	54	60

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. Total pressure, throw and NC are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed below.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15°	x 1.5	x .85	+ 4
	30°	x 1.9	x .73	+ 9
45DL2	0°	x 1.3	-	-
	15°	x 1.7	x .85	+ 4
	30°	x 2.2	x .73	+ 9

INDUSTRIAL SUPPLY GRILLES AND REGISTERS

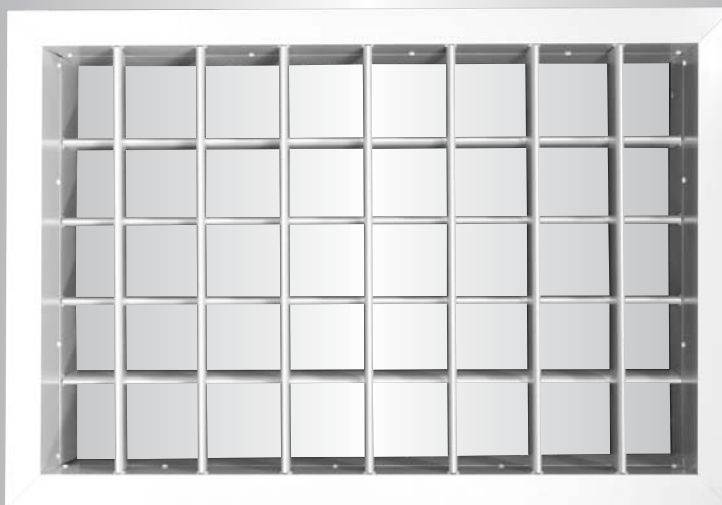
- HIGH CAPACITY
- EXTRUDED ALUMINUM
- 1 1/2" (38) OR 3" (76) SPACING

Double Deflection Models:
81DV, 81DH, 813DV, 813DH

Single Deflection Models:
81SV, 81SH, 813SV, 813SH

Gang Operated Models:
81GDV and 81GDH

- Suffix '-O' adds a steel opposed blade damper



Model 813DV

Model Series 8100 Industrial Supply Grilles and Registers have been specially designed to handle the large air volumes common in industrial applications and provide a product that is superior in design and performance when compared to the industry standard.

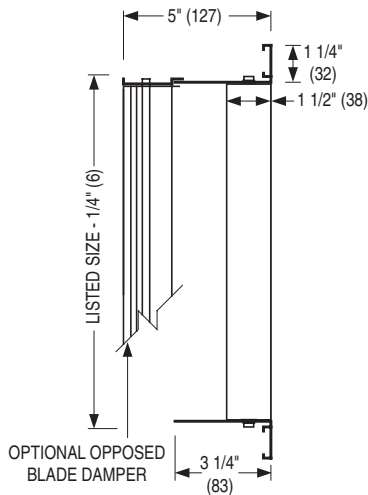
The exclusive use of heavy gauge extrusions and attention to assembly detail ensure the product is well suited to handling the higher face velocities commonly associated with industrial applications where longer throws are desired. Such applications include factories, warehouses, textile mills and commercial projects where longer than normal throws or a more robust grille design are required.

FEATURES:

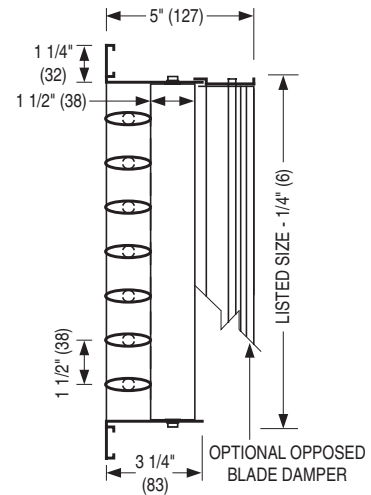
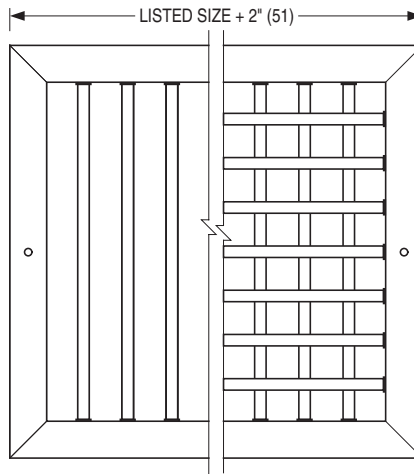
- High quality, extruded aluminum construction.
- Surface mount 1 1/4" (32) face border frame, furnished with screw holes and painted screws.
- Heavy gauge, extruded frame with reinforced mitered corners.
- The single deflection models have one set of blades and the double deflection have two sets of perpendicular blades. Blades are individually friction pivoted on screws and nylon washers to securely hold deflection setting.
- Models with 1 1/2" (38) blade spacing on centers, feature 1 1/2" (38) deep, smooth contoured airfoil blades with a minimum wall thickness of 0.05" (1.27) for optimum performance.
- The double deflection 1 1/2" (38) blade spacing models are available with front or rear gang operated blades to allow directional control of airflow in remote mounted locations. A pole operated lever on the face of the unit permits deflection of the ganged blades 45° from either side of center. The second set of perpendicular blades are individually adjustable from the face of the grille for additional directional control.
- Models with 3" (76) blade spacing, feature robust 3" (76) deep, smooth contoured airfoil blades.
- Optional opposed blade damper has a screwdriver slot operator.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- The 1 1/2" (38) blade spacing models are available in sizes 6" x 4" (152 x 102) through 36" x 36" (914 x 914) in single section construction. The 3" (76) blade spacing models are available in sizes 12" x 12" (305 x 305) through 48" x 48" (1219 x 1219) in single section construction. Multiple sections are furnished for larger sizes.

Dimensional Data

Model Series 8100 Supply Industrial

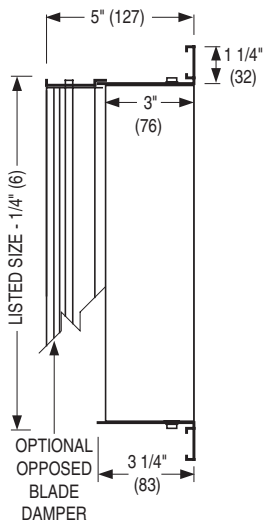


Model 81SV
Vertical Blades
Single Deflection

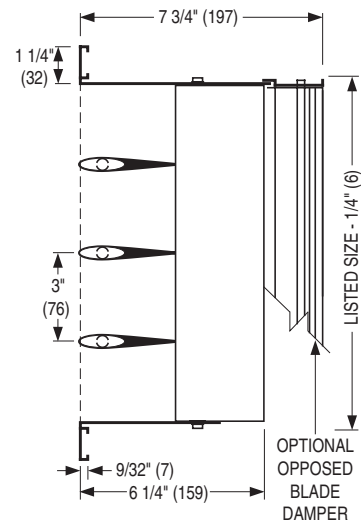
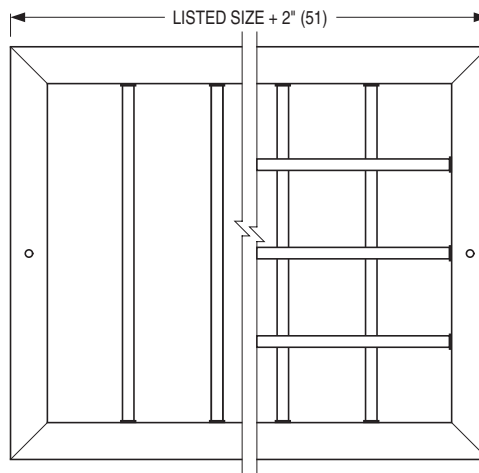


Model 81DH
Horizontal Front Blades
Double Deflection

1 1/2" (38) Spacing



Model 813SV
Vertical Blades
Single Deflection

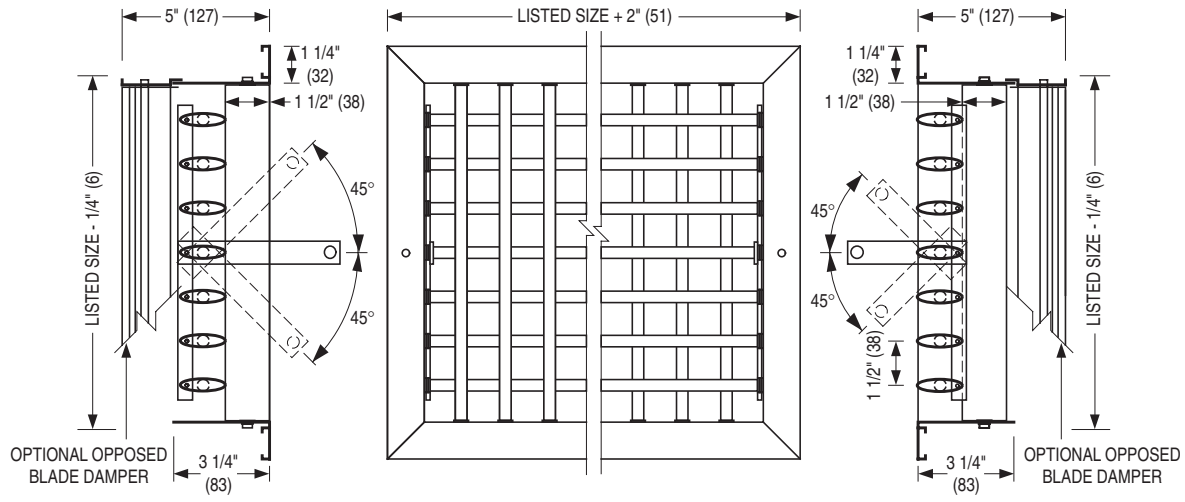


Model 813DH
Horizontal Front Blades
Double Deflection

3" (76) Spacing

Dimensional Data

Model Series 81GD Gang Operated Industrial Supply



Model 81GDV

Vertical Front Blades with
Ganged Horizontal Rear Blades

Model 81GDH

Ganged Horizontal Front Blades
with Vertical Rear Blades

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Industrial Supply Grilles and Registers – Model Series 8100

MODEL _____		813 D V - O - 24 x 12 - S - AW - A - —		ACCESSORIES		
- 1 1/2" (38) Blade Spacing	81			- None (default)	—	
- 3" (76) Blade Spacing	813			- Foam Gasket	GK	
SUPPLY _____				FASTENING		
- Double Deflection	D			- Screw Holes (default)	A	
- Single Deflection	S			- None	N	
- Ganged Double Deflection	GD			FINISH		
FRONT BLADE DIRECTION _____				- Appliance White (default)	AW	
- Vertical	V			- Aluminum	AL	
- Horizontal	H			- Special Custom Color	SP	
DAMPER (OBD) _____				FRAME/BORDER TYPE		
- With Damper	O			- Surface Mount (default)	S	
- No Damper	—					
WIDTH x HEIGHT _____						
inches (mm) x inches (mm)						



GRILLES AND REGISTERS

Notes:

1. On double deflection gang operated models, the horizontal blades (parallel to width) are ganged, whether front (81GDH) or rear (81GDV). The other set are individually adjustable.
2. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a double deflection register with 3" (76) blade spacing, vertical front blades, and a damper is Model 813DV-O. Unit will be supplied with screw holes and AW Appliance White baked enamel finish.
3. The larger dimension must always be specified first; for example, 24 x 12 (610 x 305), not 12 x 24 (305 x 610).

SUGGESTED SPECIFICATION:

81DV, 81DH Double Deflection – 1 1/2" (38) Blade Spacing

Furnish and install **Nailor Model** (select one) **81DV** or **81DH Double Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

81SV, 81SH Single Deflection – 1 1/2" (38) Blade Spacing

Furnish and install **Nailor Model** (select one) **81SV** or **81SH Single Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

813DV, 813DH Double Deflection – 3" (76) Blade Spacing

Furnish and install **Nailor Model** (select one) **813DV** or **813DH Double Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 3" (76) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

813SV, 813SH Single Deflection – 3" (76) Blade Spacing

Furnish and install **Nailor Model** (select one) **813SV** or **813SH Single Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3" (76) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

81GDV, 81GDH Double Deflection Gang Operated – 1 1/2" (38) Blade Spacing

Furnish and install **Nailor Model** (select one) **81GDV** or **81GDH Double Deflection Gang Operated Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The horizontal blades shall be gang operated. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Industrial Supply Grilles and Registers • 8100 Series

Models: 81DV, 81DH, 81SV, 81SH, 813DV, 813DH, 813SV, 813SH, 81GDV, 81GDH

Listed Duct Size (inches)	Neck Velocity, FPM		500	600	700	800	1000	1200	1400	1600	1800
	VP		0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	0.202
	TP	0°	.035	.050	.068	.088	.138	.198	.271	.354	.448
		22 1/2°	.039	.056	.076	.099	.155	.222	.305	.398	.503
18 x 4 14 x 5 12 x 6	CFM		250	300	350	400	500	600	700	800	900
	NC		—	—	—	—	26	30	34	38	41
	Ak	T	0.33 0° 0.32 22 1/2° 0.26 45	13-20-28 10-16-22 7-10-13	15-22-31 12-18-24 8-11-14	17-24-34 13-20-26 9-12-16	19-26-36 15-21-28 10-12-17	22-28-39 17-23-31 11-13-19	24-30-42 18-25-33 12-14-20	26-32-45 20-27-35 13-15-22	28-34-48 22-29-37 14-16-23
26 x 6 18 x 8 16 x 10 12 x 12	CFM		500	600	700	800	1000	1200	1400	1600	1800
	NC		—	—	—	23	29	34	38	41	44
	Ak	T	0.71 0° 0.69 22 1/2° 0.55 45	17-26-37 14-20-29 9-12-18	20-29-41 16-23-32 10-14-20	23-32-45 19-25-36 12-15-22	26-35-49 21-28-39 13-17-24	29-38-53 24-31-43 15-19-26	33-42-58 26-33-46 16-20-29	36-45-62 28-36-49 17-22-31	39-48-66 31-39-53 19-24-33
24 x 8 20 x 10 16 x 12 14 x 14	CFM		750	900	1050	1200	1500	1800	2100	2400	2700
	NC		—	—	22	25	31	36	40	43	46
	Ak	T	0.98 0° 0.95 22 1/2° 0.76 45	24-35-48 19-28-38 12-17-24	28-38-53 22-31-42 14-19-26	31-42-58 25-34-46 16-21-29	35-45-63 27-36-50 17-23-31	39-49-69 30-39-55 19-25-34	42-52-74 33-42-59 21-27-36	46-56-79 36-45-63 23-29-39	50-59-84 39-48-67 25-31-41
36 x 8 30 x 10 24 x 12 20 x 14 18 x 16	CFM		1000	1200	1400	1600	2000	2400	2800	3200	3600
	NC		—	—	23	26	32	37	41	44	48
	Ak	T	1.47 0° 1.43 22 1/2° 1.14 45	25-37-54 20-30-44 12-18-27	29-41-60 24-33-49 14-20-30	34-46-66 27-37-54 17-23-33	39-51-73 31-41-58 19-25-36	43-55-79 35-44-63 22-28-39	48-60-85 38-48-68 24-30-42	52-64-92 42-51-73 26-32-45	57-69-98 46-55-78 29-35-48
36 x 12 30 x 14 26 x 16 24 x 18	CFM		1500	1800	2100	2400	3000	3600	4200	4800	5400
	NC		—	21	25	28	34	39	43	46	49
	Ak	T	2.22 0° 2.15 22 1/2° 1.72 45	30-44-66 24-35-53 15-22-33	36-50-74 28-40-59 18-25-37	42-56-81 33-45-65 21-28-41	47-62-89 37-50-71 23-31-44	53-68-97 42-55-78 26-34-48	59-74-104 46-60-84 29-37-52	65-80-112 51-65-90 32-40-56	71-86-120 55-70-96 35-43-60
48 x 12 36 x 16 30 x 20 24 x 24	CFM		2000	2400	2800	3200	4000	4800	5600	6400	7200
	NC		—	22	26	30	36	40	44	48	51
	Ak	T	3.03 0° 2.93 22 1/2° 2.34 45	33-49-76 27-40-61 16-25-38	40-56-85 32-45-68 19-28-42	47-63-94 38-51-75 23-32-47	53-70-102 43-57-82 27-35-51	60-77-111 49-62-89 30-39-56	67-85-120 54-68-96 34-42-60	74-92-129 59-73-103 37-45-64	81-99-138 65-79-110 41-49-69
60 x 12 54 x 14 48 x 16 42 x 18 36 x 20 30 x 24	CFM		2500	3000	3500	4000	5000	6000	7000	8000	9000
	NC		—	23	27	31	37	41	45	49	52
	Ak	T	3.80 0° 3.67 22 1/2° 2.93 45	38-56-87 30-45-70 19-28-44	45-64-96 36-51-77 23-32-48	52-72-105 42-57-85 26-36-53	60-79-115 47-63-92 30-39-58	67-87-124 53-70-100 34-43-62	74-95-133 59-76-107 37-47-67	82-103-143 65-83-114 41-51-71	89-111-152 71-89-122 45-55-76
72 x 12 60 x 14 54 x 16 48 x 18 36 x 24	CFM		3000	3600	4200	4800	6000	7200	8400	9600	10800
	NC		—	24	28	32	38	42	46	50	53
	Ak	T	4.59 0° 4.45 22 1/2° 3.55 45	42-62-95 33-50-75 21-32-48	50-70-105 39-57-83 25-36-53	58-79-115 46-64-91 29-40-58	66-88-126 53-70-99 33-44-63	74-96-136 59-77-107 37-48-68	82-105-146 66-84-115 41-53-74	90-113-157 72-91-123 45-57-79	98-122-167 79-98-131 49-61-84
72 x 14 60 x 16 54 x 18 48 x 20 30 x 30	CFM		3500	4200	4900	5600	7000	8400	9800	11200	12600
	NC		20	25	29	32	38	43	47	50	54
	Ak	T	4.79 0° 4.63 22 1/2° 3.69 45	44-55-101 35-53-80 22-32-50	53-66-112 42-60-89 26-37-56	62-77-124 49-68-98 31-42-62	70-88-136 57-76-108 35-47-67	79-99-147 64-83-117 40-52-73	88-111-159 71-91-126 44-57-79	97-122-170 79-98-136 48-62-85	106-133-182 86-106-145 53-67-91

Performance Data

Industrial Supply Grilles and Registers • 8100 Series

Models: 81DV, 81DH, 81SV, 81SH, 813DV, 813DH, 813SV, 813SH, 81GDV, 81GDH

Listed Duct Size (inches)	Neck Velocity, FPM		500	600	700	800	1000	1200	1400	1600	1800
	VP		0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	0.202
	TP	0°	.035	.050	.068	.088	.138	.198	.271	.354	.448
		22 1/2°	.039	.056	.076	.099	.155	.222	.305	.398	.503
		45	.059	.084	.115	.149	.233	.334	.458	.598	.757
64 x 18	CFM		4000	4800	5600	6400	8000	9600	11200	12800	14400
58 x 20	NC		21	26	30	33	39	44	48	51	54
54 x 22	Ak	6.10	0°	47-59-108	56-71-120	66-83-132	75-94-145	85-106-157	94-118-169	103-130-182	113-142-194
48 x 24		5.90	T 22 1/2°	37-57-85	45-65-95	53-73-105	60-81-115	68-89-125	76-97-135	84-105-145	92-113-155
44 x 26		4.71	45	23-34-53	28-39-59	33-44-65	37-50-72	42-55-78	47-60-84	52-66-91	57-71-97
38 x 30	CFM		4500	5400	6300	7200	9000	10800	12600	14400	16200
72 x 18	NC		22	26	30	34	40	44	48	52	55
60 x 22	Ak	6.94	0°	50-63-115	60-76-128	70-88-141	80-101-154	90-113-167	100-126-181	110-139-194	120-151-207
54 x 24		6.72	T 22 1/2°	39-61-91	47-69-101	56-78-112	64-87-123	73-95-133	81-104-144	89-112-154	98-121-165
48 x 28		5.36	45	25-36-56	30-42-63	35-47-69	40-53-76	45-59-83	51-64-89	56-70-96	61-76-103
36 x 36											

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Ak - flow factor

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. Total pressures are based upon a grille without an opposed blade damper. Correction for grille with OBD- Multiply total pressure by 1.12.

3. NC values are based upon a grille without an opposed blade damper and a 0° deflection.

Correction for grille with OBD
- Add 5 dB to NC.

Correction for 22 1/2° deflection
- Add 1 dB to NC.

Correction for 45° deflection
- Add 7 dB to NC.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

INDUSTRIAL SUPPLY GRILLES AND REGISTERS

- MODULAR CORE
- HIGH CAPACITY

Models:

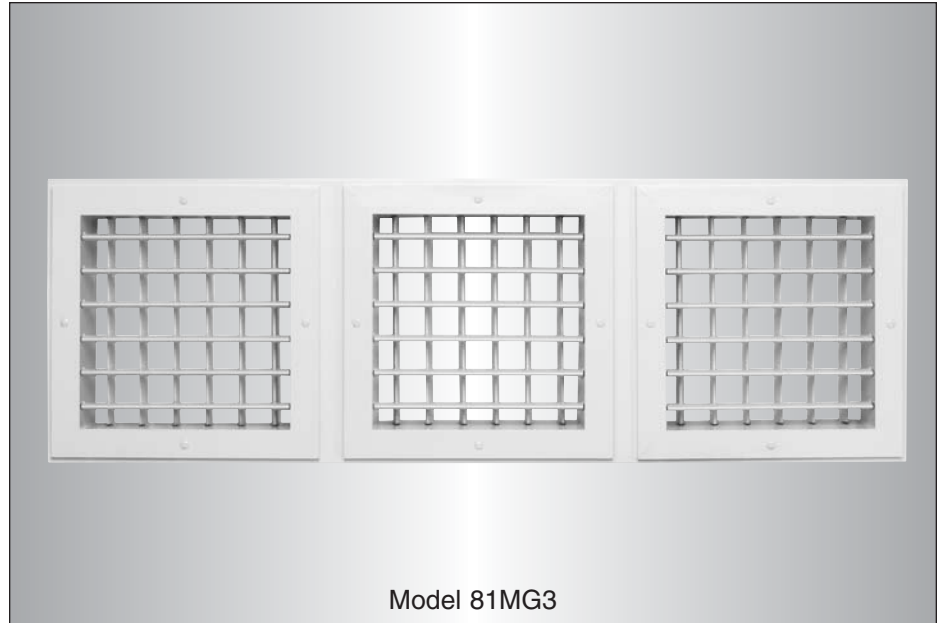
81MG1 - One Module

81MG2 - Two Modules

81MG3 - Three Modules

81MG4 - Four Modules

- Suffix '-O' adds an opposed blade damper



Model Series 81MG Industrial Supply Grilles and Registers have been specially designed to incorporate the industry leading characteristics of the 8100 Series into a unique modular mounting arrangement. The double deflection blade design incorporates two sets of heavy duty extruded aluminum, individually adjustable airfoil blades on 1 1/2" (38) centers allowing maximum flexibility. Quick release fasteners on each module allow them to be quickly removed and adjusted or rotated to control the spread, throw distance and air pattern.

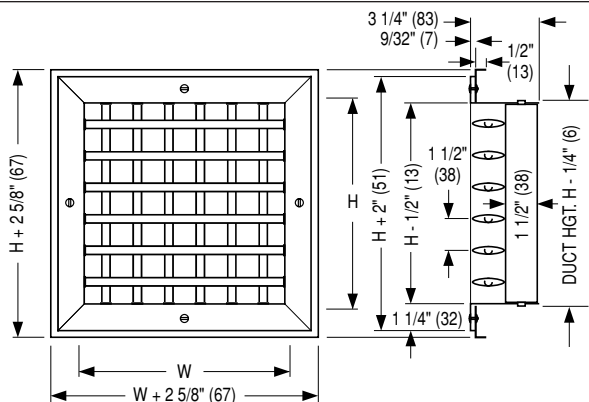
Ideal for use in applications such as factories, warehouses, shopping malls, atriums and stadiums, the removable modules can be easily readjusted to suit almost any application.

FEATURES:

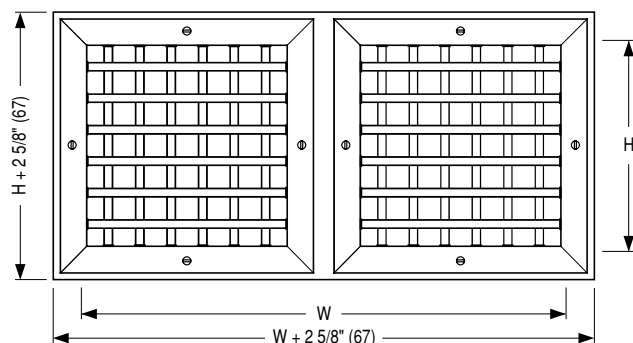
- Heavy duty 18 gauge galvanized steel frame accommodates up to four individual grilles.
- Each grille features a heavy duty extruded aluminum frame with reinforced mitered corners.
- Grilles are attached to modular frame by quick release 1/4 turn fasteners. Modular frame has pre-punched holes for attachment to flanged duct.
- Streamlined airfoil shaped, individually adjustable, heavy duty aluminum blades 1 1/2" (38) deep with a minimum wall thickness of 0.05" (1.27) on 1 1/2" (38) centers for optimum performance.
- Blades are friction pivoted on screws and nylon washers to securely hold deflection setting.
- Optional opposed blade damper has a screwdriver slot operator.
- AW Appliance White baked enamel finish is standard. Other finishes are available.
- Individual grille modules are available in sizes 8" x 8", 10" x 10", 12" x 12" and 15" x 15", (203 x 203, 254 x 254, 305 x 305 and 381 x 381).

Dimensional Data

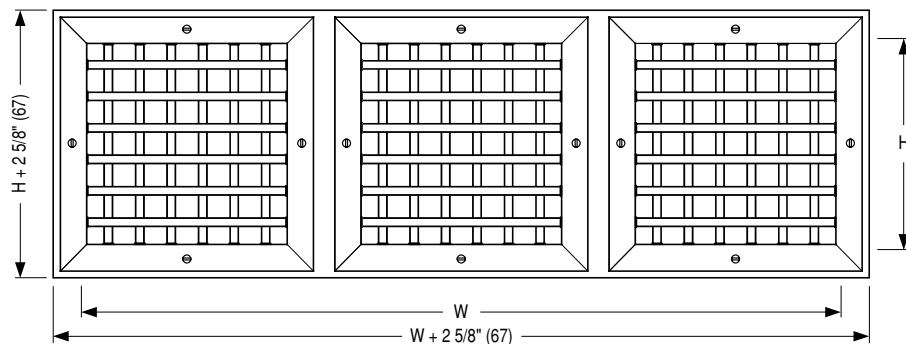
81MG Modular Core Models



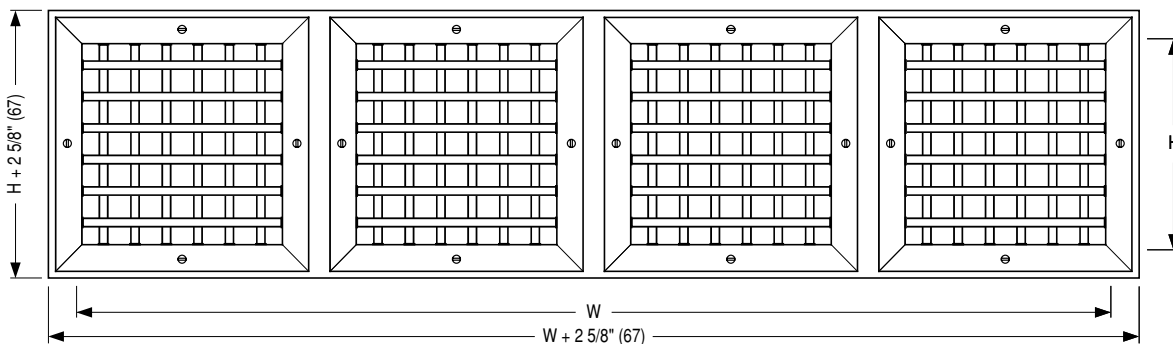
Model 81MG1 – One Module



Model 81MG2 – Two Modules



Model 81MG3 – Three Modules



Model 81MG4 – Four Modules

Dimensional Data/Imperial (inches)

H - Listed Size (Duct)	W- Listed Size (Duct)			
	1 Module	2 Modules	3 Modules	4 Modules
8	8	19	30	41
10	10	23	36	49
12	12	27	42	57
15	15	33	51	69

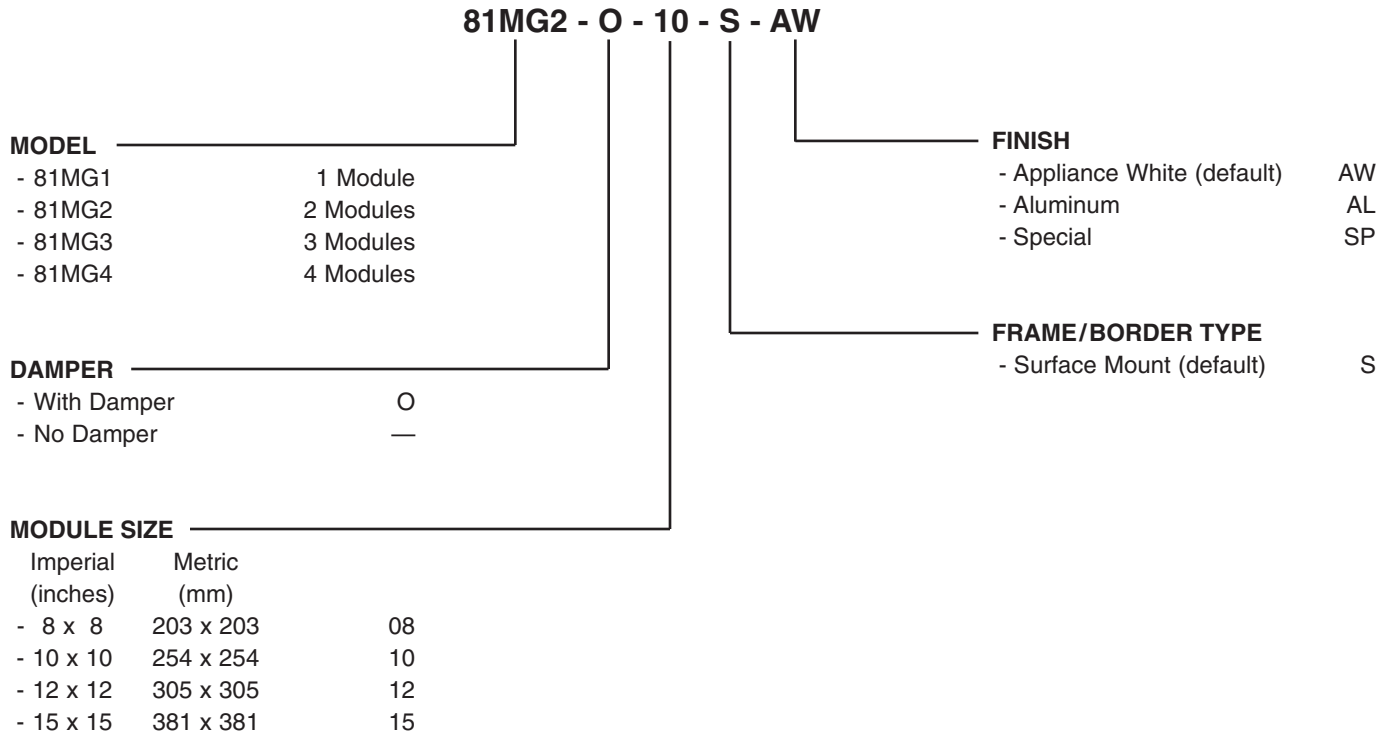
Dimensional Data/Metric (mm)

H - Listed Size (Duct)	W- Listed Size (Duct)			
	1 Module	2 Modules	3 Modules	4 Modules
203	203	483	762	1041
254	254	584	914	1245
305	305	686	1067	1448
381	381	838	1295	1753

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Industrial Modular Core Grilles and Registers – Model Series 81MG



G

GRILLES AND REGISTERS

Notes:

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a two module register with a damper is Model 81MG2-O. Unit will be supplied with AW Appliance White baked enamel finish.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **81MG1, 81MG2, 81MG3 or 81MG4 Double Deflection Modular Core Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. Grilles are to be attached to a modular frame by quick release 1/4 turn fasteners. The finish shall be AW Appliance White baked enamel (optional finishes are available).

(Optional) An opposed blade damper, adjustable from the face of the grille, shall be provided with all units. Dampers shall be attached to the grille core and be completely removable.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Industrial Grilles and Registers • 81MG Series

Model 81MG1 • One Module

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM		500	600	700	800	1000	1200	1400	1600	1800
			VP		.016	.022	.031	.040	.062	.090	.122	.160	.202
			0°		.036	.052	.071	.092	.144	.208	.283	.370	.468
			TP 22 1/2°		.042	.060	.081	.106	.166	.239	.325	.425	.538
8	0.38		45°		.061	.088	.119	.156	.244	.351	.478	.624	.790
			CFM NC		190	228	266	304	380	456	532	608	684
			0°		11-18-25	12-19-27	14-21-29	16-22-30	19-24-33	21-26-36	23-28-39	25-30-41	27-32-44
			22 1/2°		9-14-20	10-16-22	11-17-23	13-17-24	15-19-26	17-21-29	18-22-31	20-24-33	22-25-35
10	0.61		45°		5-9-12	6-9-13	7-10-14	8-10-14	9-11-16	10-12-17	11-13-18	12-14-20	13-15-21
			CFM NC		305	366	427	488	610	732	854	976	1098
			0°		14-22-30	17-24-33	19-26-36	22-28-39	25-30-42	27-33-45	29-35-49	31-37-52	33-40-55
			22 1/2°		11-17-24	14-19-26	15-21-29	18-22-31	20-24-34	22-26-36	23-28-39	25-30-41	26-32-44
12	0.90		45°		7-10-14	8-11-16	9-12-17	11-13-19	12-15-20	13-16-22	14-17-23	15-18-25	16-19-26
			CFM NC		450	540	630	720	900	1080	1260	1440	1620
			0°		17-27-37	20-29-40	22-31-43	25-33-46	28-36-50	31-39-54	34-42-58	37-44-62	40-47-66
			22 1/2°		14-21-30	16-23-32	18-25-34	20-26-37	22-29-40	25-31-43	27-33-46	30-35-50	32-37-53
15	1.44		45°		8-13-18	10-14-19	11-15-21	12-16-22	13-17-24	15-19-26	16-20-28	18-21-30	19-22-32
			CFM NC		720	864	1008	1152	1440	1728	2016	2304	2592
			0°		23-33-46	27-37-52	31-41-57	34-44-61	38-48-67	42-52-72	45-55-77	49-59-82	52-63-87
			22 1/2°		18-26-37	22-30-42	25-33-46	27-35-49	30-39-54	33-41-58	36-44-62	39-47-66	42-50-70
			45°		11-16-22	13-18-25	15-20-27	16-21-29	18-23-32	20-25-35	22-27-37	23-28-39	25-30-42

Model 81MG2 • Two Modules

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM		500	600	700	800	1000	1200	1400	1600	1800
			VP		.016	.022	.031	.040	.062	.090	.122	.160	.202
			0°		.036	.052	.071	.092	.144	.208	.283	.370	.468
			TP 22 1/2°		.042	.060	.081	.106	.166	.239	.325	.425	.538
8	0.76		45°		.061	.088	.119	.156	.244	.351	.478	.624	.790
			CFM NC		380	456	532	608	760	912	1064	1216	1368
			0°		15-23-32	18-26-36	20-29-40	22-31-43	26-33-46	29-36-50	31-39-54	34-41-57	36-44-61
			22 1/2°		12-18-26	14-21-29	16-23-32	18-25-34	21-26-37	23-29-40	25-31-43	27-33-46	29-35-49
10	1.22		45°		7-11-15	9-12-17	10-14-19	11-15-21	12-16-22	14-17-24	15-18-26	16-20-27	17-21-29
			CFM NC		610	732	854	976	1220	1464	1708	1952	2196
			0°		18-30-42	22-34-47	27-37-52	30-40-56	34-43-60	37-46-65	41-50-69	44-53-74	47-55-78
			22 1/2°		14-24-34	18-27-38	22-30-42	24-32-45	27-35-48	30-37-52	32-40-55	35-42-59	38-44-62
12	1.80		45°		9-15-20	11-16-23	13-18-25	14-19-27	16-21-29	18-22-31	19-24-33	21-25-35	23-27-37
			CFM NC		900	1080	1260	1440	1800	2160	2520	2880	3240
			0°		24-37-52	28-42-59	32-46-64	36-49-68	41-54-75	45-57-81	50-61-86	54-65-92	58-69-97
			22 1/2°		19-30-42	22-34-47	26-37-51	29-39-54	33-43-60	36-46-64	40-49-69	43-52-73	46-55-78
15	2.87		45°		12-18-25	13-20-28	15-22-31	17-24-33	20-26-36	22-27-39	24-29-41	26-31-44	28-33-47
			CFM NC		1435	1722	2009	2296	2870	3444	4018	4592	5166
			0°		29-47-65	35-52-72	40-57-80	45-62-87	51-67-95	57-73-102	63-78-110	69-83-117	75-88-124
			22 1/2°		23-37-52	28-41-58	32-45-64	36-49-70	41-54-76	46-58-82	50-62-88	55-66-93	60-70-99
			45°		14-22-31	17-25-35	19-27-38	22-30-42	24-32-46	27-35-49	30-37-53	33-40-56	36-42-60

Performance Data

Industrial Grilles and Registers • 81MG Series

Model 81MG3 • Three Modules

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM	500	600	700	800	1000	1200	1400	1600	1800
			VP	.016	.022	.031	.040	.062	.090	.122	.160	.202
8	1.13		0°	.036	.052	.071	.092	.144	.208	.283	.370	.468
			TP 22 1/2°	.042	.060	.081	.106	.166	.239	.325	.425	.538
			45°	.061	.088	.119	.156	.244	.351	.478	.624	.790
			CFM NC	565	678	791	904	1130	1356	1582	1808	2034
10	1.83		0°	—	15	19	23	29	34	38	41	45
			T 22 1/2°	17-29-40	21-32-44	25-35-49	28-38-53	31-41-57	34-44-61	38-47-66	41-50-70	44-53-74
			45°	14-23-32	17-25-35	20-28-39	22-31-42	25-33-46	27-35-49	30-38-52	33-40-56	35-42-59
			45°	8-14-19	10-15-21	12-17-24	13-18-25	15-20-27	16-21-29	18-23-31	20-24-33	21-25-36
12	2.70		0°	915	1098	1281	1464	1830	2196	2562	2928	3294
			T 22 1/2°	—	17	22	25	31	36	40	43	47
			45°	24-37-52	28-42-59	32-46-64	36-50-69	41-55-76	45-58-82	50-62-88	54-66-93	58-70-99
			45°	19-30-42	22-34-47	26-37-51	29-40-55	33-44-61	36-46-65	40-50-70	43-53-75	46-56-79
15	4.31		0°	1350	1620	1890	2160	2700	3240	3780	4320	4860
			T 22 1/2°	15	19	23	27	33	38	42	46	49
			45°	29-45-63	35-50-70	40-55-77	45-60-84	50-65-92	56-70-99	61-76-107	67-81-114	72-86-121
			45°	23-36-50	28-40-56	32-44-62	36-48-67	40-52-74	44-56-79	49-60-85	53-65-91	58-69-97
15	4.31		0°	2155	2586	3017	3448	4310	5172	6034	6896	7758
			T 22 1/2°	18	22	26	30	36	40	44	48	51
			45°	35-58-82	42-63-89	49-69-97	55-75-105	62-82-115	69-88-124	77-95-134	84-101-143	91-108-152
			45°	28-47-66	34-51-71	39-55-78	44-60-84	50-65-92	55-71-99	61-76-107	67-81-114	73-86-122
15	4.31		0°	17-28-39	20-30-43	24-33-47	26-36-50	30-39-55	33-42-60	37-45-64	40-49-69	44-52-73

Model 81MG4 • Four Modules

8	1.51		CFM NC	755	906	1057	1208	1510	1812	2114	2416	2718
			0°	—	18	22	25	31	36	40	43	46
			T 22 1/2°	24-34-48	28-38-53	31-41-58	35-45-63	39-49-69	42-53-74	46-56-79	50-60-84	53-63-89
			45°	19-27-38	22-30-42	25-33-46	28-36-50	31-39-55	34-42-59	37-45-63	40-48-67	42-51-71
10	2.44		0°	1220	1464	1708	1952	2440	2928	3416	3904	4392
			T 22 1/2°	17	20	24	28	34	38	42	45	48
			45°	27-43-60	32-47-66	37-52-73	41-57-80	47-62-87	52-67-94	58-71-101	63-76-107	68-81-114
			45°	22-34-48	26-37-53	30-41-58	33-45-64	38-49-70	42-53-75	46-57-80	50-61-86	54-65-91
12	3.59		0°	1795	2154	2513	2872	3590	4308	5026	5744	6462
			T 22 1/2°	18	22	26	30	36	40	44	48	51
			45°	32-53-73	39-57-80	45-63-89	51-69-97	57-75-105	64-81-114	71-87-122	77-93-131	84-99-139
			45°	26-42-58	31-45-64	36-51-71	41-55-78	46-60-84	51-64-91	56-69-98	62-74-104	67-79-111
15	5.74		0°	2870	3444	4018	4592	5740	6888	8036	9184	10332
			T 22 1/2°	20	24	28	32	38	42	46	50	53
			45°	39-66-92	47-72-102	55-80-112	63-87-123	71-94-133	79-102-143	87-109-154	95-116-164	103-127-174
			45°	31-53-74	38-58-82	44-64-90	50-70-98	57-76-106	63-81-115	70-87-123	76-93-131	82-102-139
15	5.74		0°	19-32-44	23-35-49	26-38-54	30-42-59	34-45-64	38-49-69	42-52-74	46-56-79	49-61-84

CFM - cubic feet per minute

FPM - feet per minute velocity

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Ak - flow factor

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. Total pressures are based upon a grille without an opposed blade damper. Correction for grille with OBD- Multiply total pressure by 1.12.

3. NC values are based upon a grille without an opposed blade damper and a 0° deflection.

Correction for grille with OBD - Add 5 dB to NC.

Correction for 22 1/2° deflection - Add 1 dB to NC.

Correction for 45° deflection - Add 7 dB to NC.

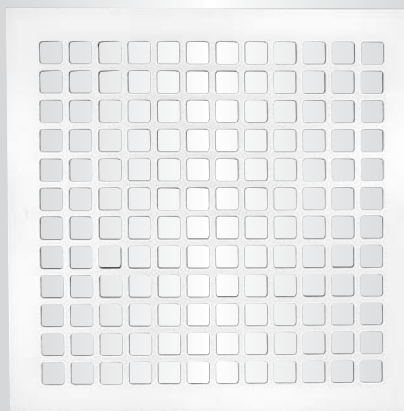
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 1991.

LATTICE FACE GRILLES

- VARIOUS CONFIGURATIONS AVAILABLE

Models:

- 51LG** Aluminum
- 61LG** Steel
- 67LG** Stainless Steel

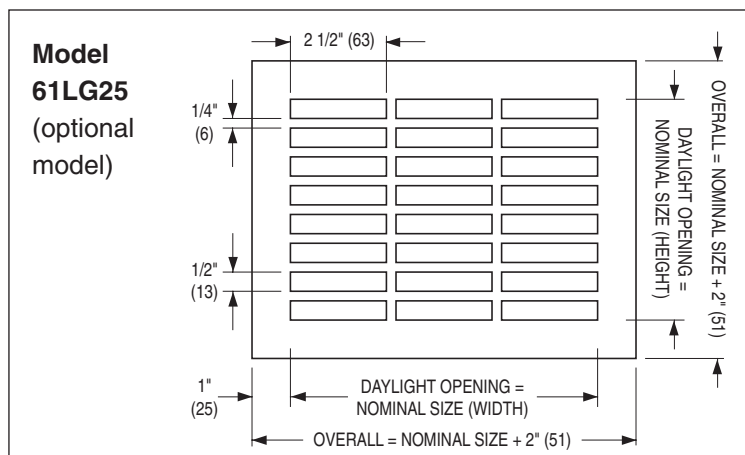
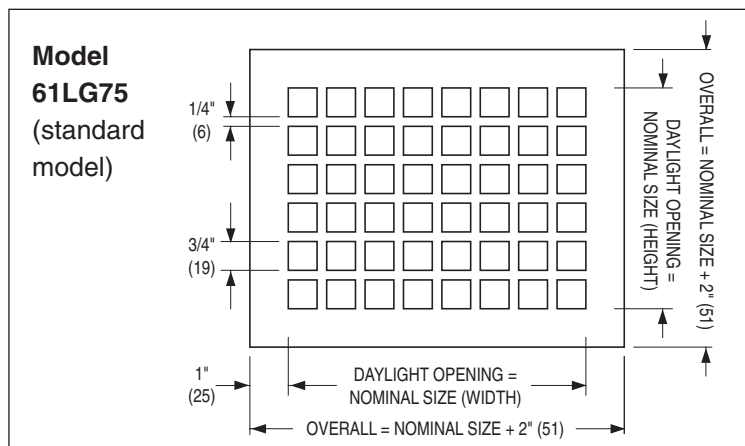


Model 61LG75

The **Nailor Model Series 51LG, 61LG and 67LG Lattice Face Grilles** are available for return air, architectural and minimum security applications. The standard **Model 61LG75** features 3/4" (19) square holes on 1" (25) centers in 14 gauge steel construction.

FEATURES:

- Model Series 61LG standard 14 gauge steel construction. Optional 10 or 12 gauge steel construction is available.
- Model Series 51LG standard 12 gauge aluminum construction.
- Model Series 67LG standard 14 gauge 304 stainless steel construction.
- Optional countersunk screw holes and mounting screws are available.
- Many choices of lattice design to suit any application (see table below).
- AW Appliance White baked enamel finish is standard on steel and aluminum models. Stainless steel models have #3 Satin Polish finish as standard. Other finishes are available.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219).



LATTICE CONFIGURATIONS AND FREE AREA

MODEL NO. SUFFIX eg. 61LG --	HOLE PATTERN	AV. FREE AREA
75	3/4" (19) square holes on 1" (25) centers	60%
50	1/2" (13) square holes on 3/4" (19) centers	50%
13	13/16" (21) square holes on 1" (25) centers	70%
10	1" (25) square holes on 1 1/4" (32) centers	68%
25	2 1/2" x 1/2" (64 x 13) rectangular holes on 2 3/4" x 3/4" (70 x 19) centers	65%

Suffix 75 is standard.

Sizing Schedule and Performance Data

Model Series 51LG, 61LG and 67LG • Lattice Face Grilles

DAYLIGHT OPENING DIMENSION													
NO. OF HOLES	LG75 3/4" SQ.		LG50 1/2" SQ.		LG13 13/16" SQ.		LG10 1" SQ.		NO. OF HOLES	LG25 2 1/2" x 1/2"			
	in.	mm	in.	mm	in.	mm	in.	mm		WIDTH		HEIGHT	
										in.	mm	in.	mm
6	5 3/4	146	4 1/4	108	5 13/16	148	7 1/4	184	3	6 1/2	165	2	51
8	7 3/4	197	5 3/4	146	7 13/16	198	9 3/4	248	4	8 3/4	222	2 3/4	70
10	9 3/4	248	7 1/4	184	8 13/16	249	12 1/4	311	5	11	279	3 1/2	89
12	11 3/4	298	8 3/4	222	11 13/16	300	14 3/4	375	6	13 1/4	337	4 1/4	118
14	13 3/4	349	10 1/4	260	13 13/16	335	17 1/4	438	7	15 1/2	394	5	127
16	15 3/4	400	11 3/4	298	15 13/16	402	19 3/4	502	8	17 3/4	451	5 3/4	146
18	17 3/4	451	13 1/4	337	17 13/16	452	22 1/4	565	9	20	508	6 1/2	165
20	19 3/4	502	14 3/4	375	19 13/16	503	24 3/4	629	10	22 1/4	565	7 1/4	184
22	21 3/4	552	16 1/4	413	21 13/16	554	27 1/4	692	11	24 1/2	622	8	203
24	23 3/4	603	17 3/4	451	23 13/16	605	29 3/4	756	12	26 3/4	679	8 3/4	222
26	25 3/4	654	19 1/4	489	25 13/16	656	32 1/4	819	13	29	737	9 1/2	241
28	27 3/4	705	20 3/4	527	27 13/16	706	34 3/4	883	14	31 1/4	794	10 1/4	260
30	29 3/4	756	22 1/4	565	29 13/16	757	37 1/4	946	15	33 1/2	851	11	279
32	31 3/4	806	23 3/4	603	31 13/16	808	39 3/4	1010	16	35 3/4	908	11 3/4	298
34	33 2/4	857	25 1/4	641	33 13/16	859	42 1/4	1073	17	38	965	12 1/2	317
36	35 3/4	908	26 3/4	679	35 13/16	910	44 3/4	1137	18	40 1/4	1022	13 1/4	336
38	37 3/4	959	28 1/4	718	37 13/16	960	47 1/4	1200	19	42 1/2	1079	14	356
40	39 3/4	1010	29 3/4	756	39 13/16	1011			20	44 3/4	1136	14 3/4	375
42	41 3/4	1060	31 1/4	794	41 13/16	1062			21	47	1194	15 1/2	394
44	43 3/4	1111	32 3/4	832	43 13/16	1113							
46	45 3/4	1162	34 1/4	870	45 13/16	1164							
48	47 3/4	1213	35 3/4	908	47 13/16	1214							
50			37 1/4	946									
52			38 3/4	984									
54			40 1/4	1022									
56			41 3/4	1060									
58			43 1/4	1099									
60			44 3/4	1137									
62			46 1/4	1175									
64			47 3/4	1213									

G

GRILLES AND REGISTERS

Pressure Loss Through Lattice Grille

Model (Free Area)	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062	1200 .090	1400 .122
LG75 (60%)	Neg. SP	.019	.034	.053	.077	.105	.137	.173	.213	.307	.418
LG50 (50%)		.032	.057	.089	.128	.174	.228	.288	.356	.512	.697
LG13 (70%)		.011	.020	.031	.044	.060	.078	.099	.122	.176	.240
LG10 (68%)		.012	.022	.034	.050	.068	.089	.112	.138	.198	.270
LG25 (65%)		.015	.027	.042	.061	.083	.108	.137	.167	.243	.331

VP - velocity pressure - inches w.g.

Neg. SP - negative static pressure - inches w.g.

Core Velocity is in feet per minute.

Core represents daylight opening dimensions.

PRODUCT OVERVIEW OPTIONS AND ACCESSORIES FOR GRILLES AND REGISTERS

FASTENING AND MOUNTING FRAMES

- Up to four methods of fastening available for most models.
- Sub-frame available for professionally finished openings.
- Surface mount adaptor frame for plaster and sheet rock ceilings.
- Panel mounting available to suit architectural ceiling systems.

OPTIONS

- A selection of optional items that are available on grilles and registers.
- Information on custom sizing for special applications.

FINISHES

- Selection of standard and non-standard finishes to choose from.
- Baked enamel paint in custom colors to suit architect.
- Anodizing of aluminum products.

AIR BALANCING DEVICES

- Opposed blade dampers for every application.
- Volume extractors.

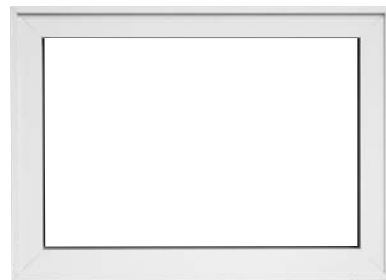
Effective air balancing of an HVAC System requires the correct selection, specification and installation of the right product to suit the system design.

Nailor offers a comprehensive range of models and options to cover all applications.

Nailor balancing devices are:

- Easy to select and specify. Many items can be supplied as factory mounted or packaged accessories on grilles and registers.
- Designed to offer a smooth, accurate and predictable response during adjustment for precise air metering.
- Designed to provide quick access and adjustment.
- Engineered with attention to optimizing airflow in order to minimize noise, turbulence and pressure drop.

Model PF
Sub-frame



Model DFA
Drywall/Plaster Frame
Surface Mount
Ceiling Adaptor

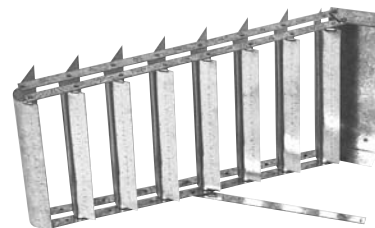


Model OBD
Opposed Blade Damper
Steel, Neck Mount

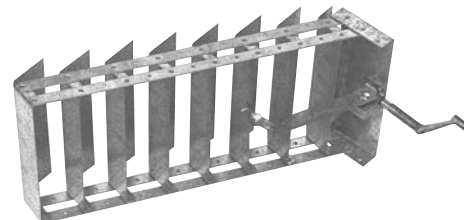


Model OBDD
Opposed Blade Damper
Steel, Duct Mount

Model EX-1
Volume
Extractor



Model EX-3
Volume
Extractor



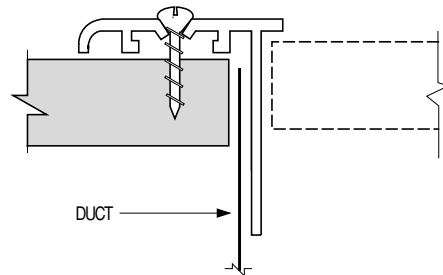
Fastening and Border Frames

Type A Screw Fastening (External)

Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

Screw holes are countersunk in the frame for most models to provide an aesthetically pleasing appearance and are sized for #8 x 1 1/2" (38) oval-head screws which are supplied from the factory packed with each grille or register and are painted to match the specified finish.

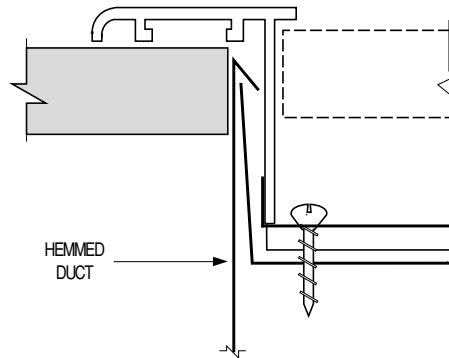
Type A Screw Fastening (external)
Standard



Type C Concealed Mounting

Grilles and registers are supplied with concealed mounting straps (at additional cost) which permit surface mounting with concealed screws, allowing a clean frame appearance. The bracket attached to the back of the grille screws to an adjustable mounting strap which can either be secured directly to the duct wall or hooked into a hem formed in the end of the duct. Not available on return air grilles with 1/2" (13) spacing and a fixed angled blade deflection. Maximum size: 36" x 36" (914 x 914).

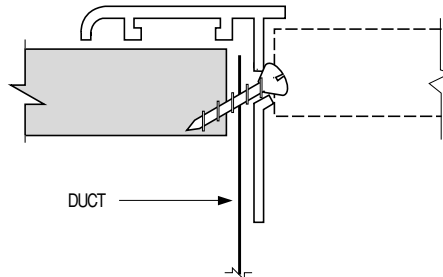
Type C Concealed Mounting



Type D Screw Fastening (Concealed)

Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must be taken not to bend or scratch the grille. Not recommended on return air grilles with a fixed angled blade deflection as accessibility to screw holes is greatly restricted.

Type D Screw Fastening (concealed)

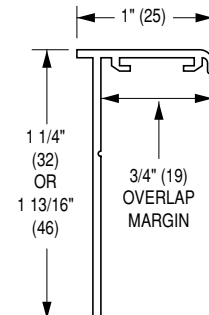


Type NF Narrow Frame

An optional reduced 1" (25) wide narrow border frame is available on most aluminum models to satisfy architectural considerations.

See individual models for availability.

NF Narrow Frame



Mounting Frames

MODEL: PF Plaster/Mounting Frame

Available (at additional cost) with most standard steel and aluminum grilles and registers.

The Model PF Plaster Frame is constructed from extruded aluminum and provides a convenient and professional way for finishing off the grille or register opening. It provides a stable anchor for attachment, while enabling the grille or register to be detached and replaced readily without disturbing the finished surface of the wall or ceiling opening. It may be used for surface mounting on various materials or recess mounting in wet plaster.

MODELS: DFS (Steel), DFA (Aluminum) Drywall/Plaster Frame

The DF Series are for mounting in finished drywall or plaster ceilings to accept any standard lay-in type grille, register, diffuser or other ceiling component. Installation of the air outlet is as simple as inserting them in a standard lay-in T-Bar type ceiling system.

The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized.

A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access doors. The finished appearance is professional and aesthetically pleasing.

Standard Finish: AW Appliance White baked enamel. Other finishes are available.

Model DFS is installed quickly and easily using adjustable fastening angle brackets which adapt to various ceiling thicknesses. Frames are roll-formed corrosion-resistant steel with staked and mitered corners.

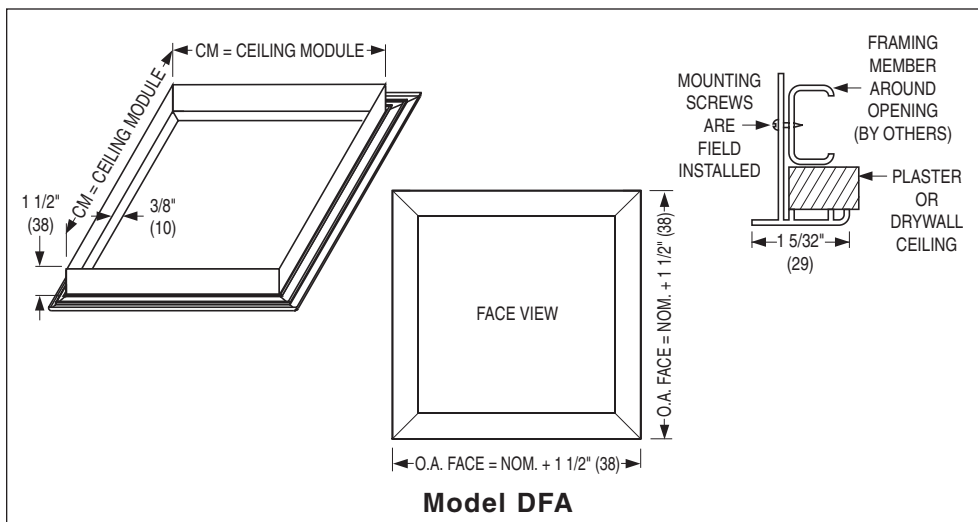
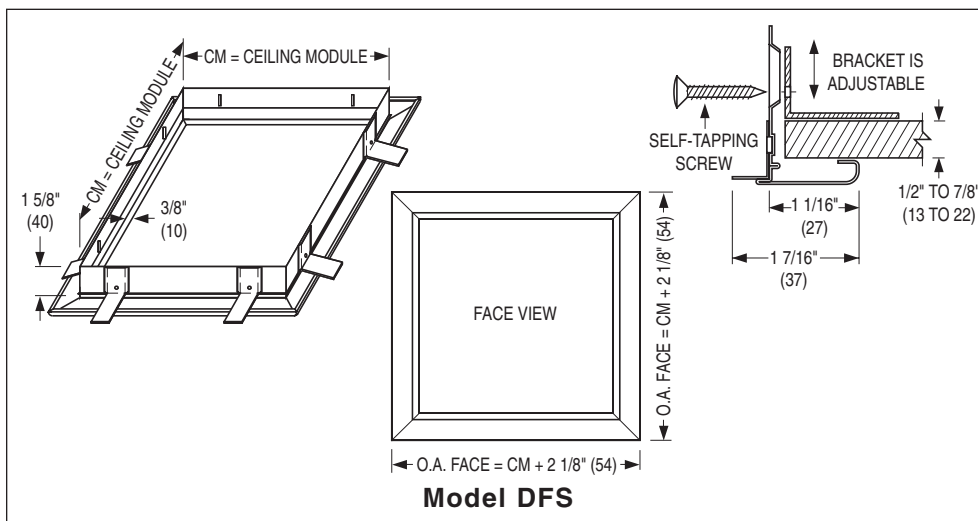
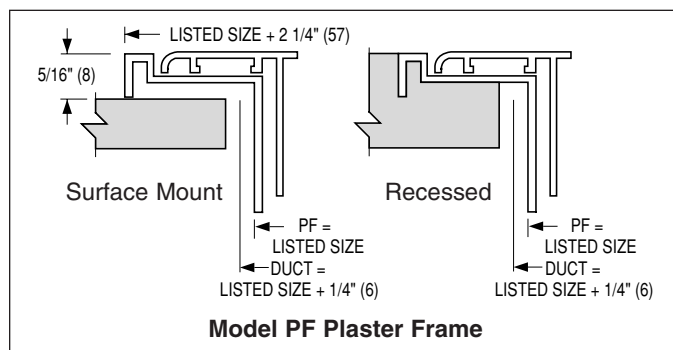
IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Ceiling opening = CM + 1/4" (6)

Model DFA requires framing of the ceiling opening with 'C' channel or wood studs for attachment with mounting screws (by others).

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 12	1219 x 305	1200 x 300
48 x 24	1219 x 610	1200 x 600
60 x 12	1524 x 305	1500 x 300

Ceiling opening = CM + 1/4" (6)



Panel Mounting/Ceiling Modules

A panel can be added to the majority of Nailor's steel and aluminum return grilles to suit many special architectural ceiling designs and ceiling module sizes. These panel mount grilles are available in corrosion-resistant steel for the 6100 series steel grilles and both aluminum and corrosion-resistant steel for the 5100 and 7100 series aluminum grilles.

To specify a steel panel; add the suffix S to the end of the selected panel variant. To specify an aluminum panel; add the suffix A to the end of the selected panel variant. e.g. If a steel panel is required with a Spline Type ceiling module, the variant code will become SPS.

The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

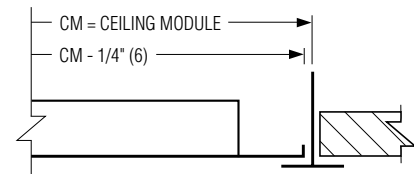
Available Ceiling Module Sizes

CEILING MODULE	
Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300
24 x 12	600 x 300
36 x 12	900 x 300
48 x 12	1200 x 300
20 x 20	500 x 500
24 x 24	600 x 600
36 x 24	900 x 600
48 x 24	1200 x 600

Border Type PL: Lay-in T-Bar

Grille or register is mounted in an extended panel to suit standard T-Bar Lay-in Type ceilings.

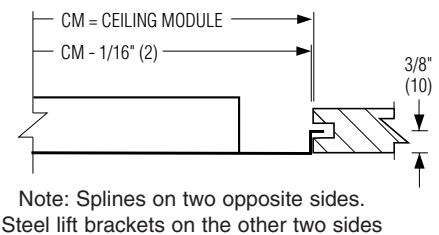
Type PL



Border Type SP: Spline

The grille or register is mounted in an extended panel to suit spline type ceiling modules.

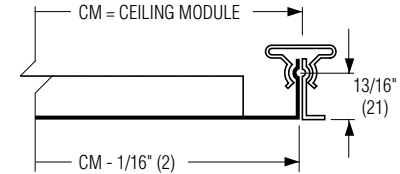
Type SP



Border Type MP: Metal Pan/Snap-in

The grille or register is mounted in an extended panel to suit metal pan ceilings that have snap-in type ceiling modules.

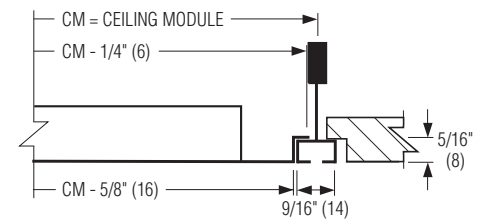
Type MP



Border Type FP: Narrow Regressed T-Bar (Fineline®)

The grille or register is mounted in an extended panel that will fit a narrow regressed T-Bar ceiling grid.

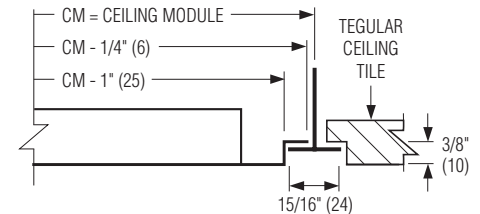
Type FP



Border Type TL: Tegular Type T-Bar

The grille or register is mounted in a panel that will extend below the T-Bar ceiling grid.

Type TL



Options, Custom Sizing and Finishes

OPTIONS:

GK Gasket

An optional foam gasket is available factory installed on the rear of all Type S corrosion-resistant steel and aluminum surface mount grilles and registers.

Eliminates air leakage and the possibility of dirt streaking and smudging from entrainment, particularly when installed on unevenly finished surfaces such as stucco.

IS Insect Screen

1/16" (2) galvanized steel mesh, factory installed.

EQT Earthquake Tabs

Earthquake (seismic) retaining safety tabs are available; factory installed on grilles or registers when required by local building code that units be independently restrained and safety wired to supporting structure.

CUSTOM SIZING:

Oversized Units

For specialized applications and architectural considerations; certain grilles and registers can be manufactured in single sections larger than the standard published maximum size at additional cost. Aspect ratio, tolerances, manufacturing capability and weight have all to be considered by the factory prior to acceptance. Consult your **Nailor** representative for specific applications.

Fractional/Hard Metric Sizes

Nailor grilles and registers have been designed and are manufactured to suit HVAC systems where the duct design has been done using Imperial Units of measurement (i.e. feet and inches). The majority of **Nailor** grilles and registers are fabricated as standard in 1" (25) nominal incremental units, giving the designer great flexibility during sizing selection.

At additional cost, the majority of **Nailor** grilles and registers can be custom fabricated in fractional sizes for special applications and in Hard Metric (S.I. Units) when the HVAC duct design has been done using the Metric System.

Consult your **Nailor** representative for availability on specific project applications.

FINISHES:

BAKED ENAMEL PAINT

AW Appliance White (standard)

A white finish that is currently the industry standard. Closely matches standard finishes supplied by the majority of T-Bar ceiling system manufacturers. (No additional cost).

AL Aluminum

Contains suspended metal particles to give the appearance of a silver grey metallic or anodized finish. (No additional cost).

WH Off-White

Has a creamy appearance. (Additional cost)

BK Black

This black has a matte finish. (Additional cost)

SP Special

The **Nailor** range of grilles and registers are available in any color for special architectural consideration. Custom colors are individually mixed to match customer supplied samples. (Additional cost)

ACRYLIC

AAW Acrylic Appliance White

Extra protection for your grilles and registers. This color matches the industry standard white finish. (Additional cost).

ASP Acrylic Special Finish

Extra protection for your grilles and registers. Custom colors are individually mixed to match customer supplied samples. (Additional cost)

ALUMINUM PRODUCT FINISHES

BC Brushed and Clear Coat

Brushed for an enhanced appearance. (Additional cost).

SA Satin (clear) Anodized

Adds a smooth satin finish to further protect the aluminum from corrosion. (Additional cost).

ALSO AVAILABLE

MI Mill Finish

(No additional cost).

PPA Paint Prepared Metal (Washed only)

(No additional cost).

PC Prime Coat

(Additional cost).

Air Balancing Devices

OPPOSED BLADE DAMPERS – STEEL AND ALUMINUM

Nailor Opposed Blade Dampers are manufactured from heavy gauge, roll-formed, corrosion-resistant steel or extruded aluminum blades and frame with miscellaneous steel components.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

GRILLE MOUNT MODELS:

OBD Steel

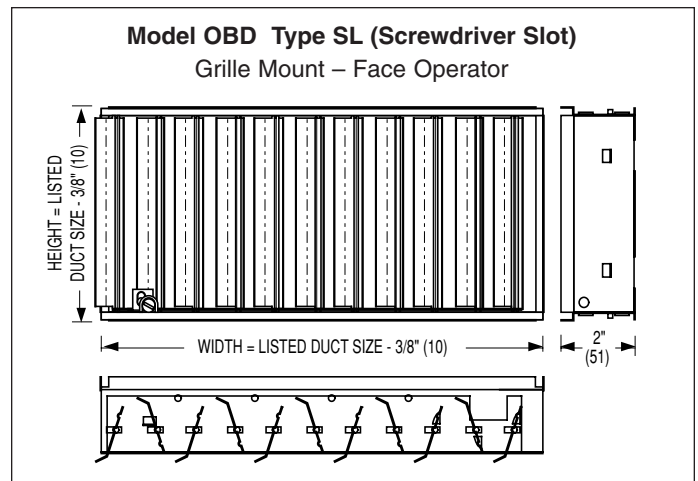
OBD-A Aluminum

This style of damper mounts directly on the neck of the grille and is sized to fit most **Nailor** grilles. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL) on supply registers and a screwdriver pivot lever operator (Type PL) on fixed, angled deflection return registers. Type SL operator is standard if damper is ordered separately from grille. A lever operator (Type GL) is available as an option on fixed, angled deflection return registers.

Can be specified as an integral part of the grille (register) by adding a - O (steel) or - OA (aluminum) suffix to the grille model. Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610)

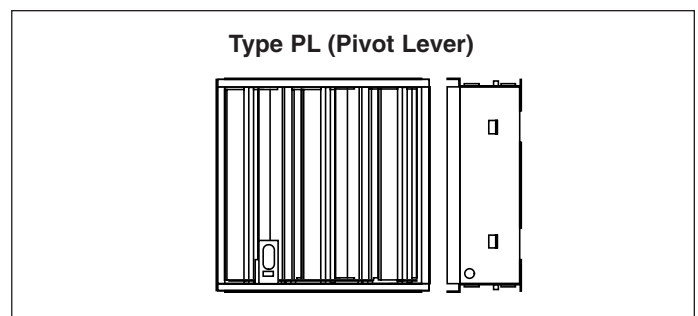
Type SL Operator

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the register. This operator is the standard supplied with supply air registers such as the single and double deflection adjustable blade.



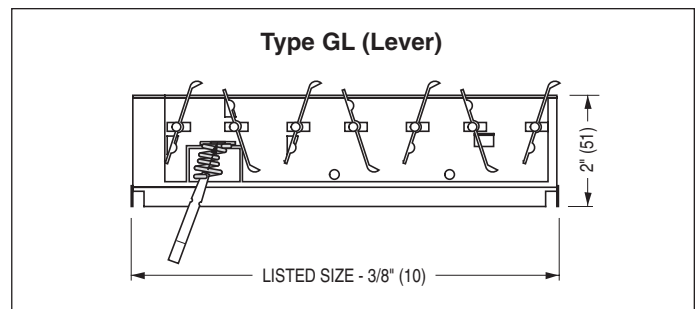
Type PL Operator

The PL Operator is a concealed pivot lever, which is adjusted from the face of the register using a screwdriver. This operator is for use only on fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille.



Type GL Operator

The GL Operator incorporates a lever that adjusts without the use of tools. The lever operator extends through the grille face and is an alternative for fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille being used and the grille model must be specified.



Air Balancing Devices

DUCT MOUNT MODELS:

OBDD Steel

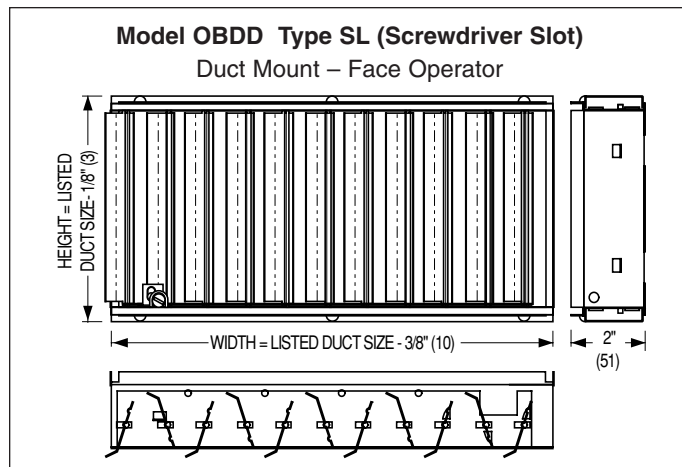
OBDD-A Aluminum

Designed for field installation, this damper mounts independently in the duct, separate from and behind the grille. Sized to suit and offer a friction fit in nominally sized ducts. Secure the dampers with 1/2" (13) long sheet metal screws (by others) through the double walled sub-frame. Supplied as standard with a screwdriver slot operator (Type SL).

Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610)

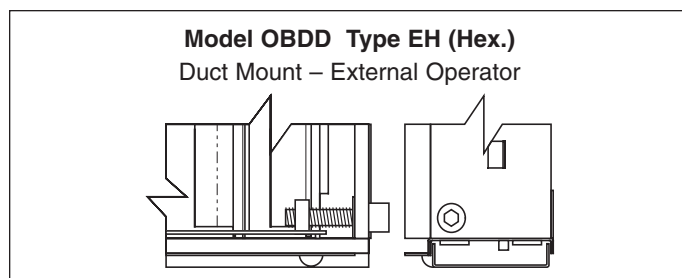
Type SL Operator

The SL Operator incorporates a screwdriver slot face operator that is accessed from inside the duct by removing the grille.



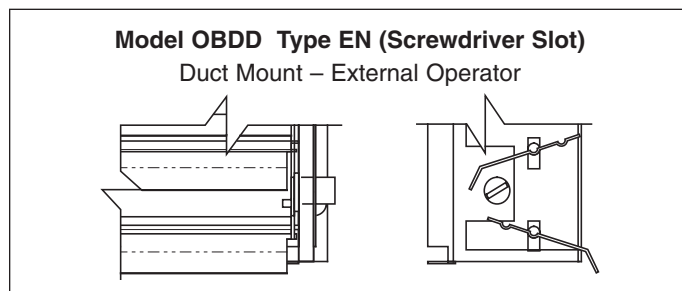
Type EH Operator

The EH Operator incorporates an external hex device that penetrates the duct wall to provide control. For use with 3/16" (5) Allen key wrench (by others).



Type EN Operator

The EN Operator incorporates an external (nylon) screwdriver slot device. This device is controlled externally through the duct.



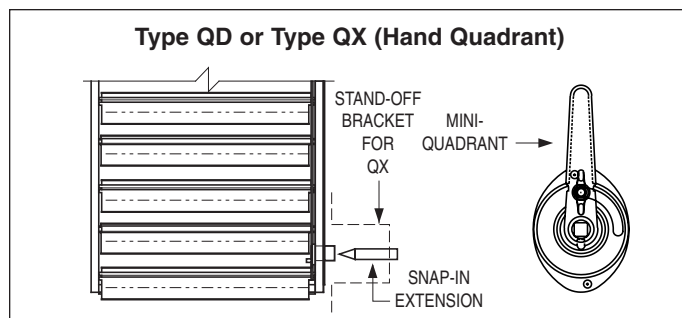
Type QD Operator *

The QD Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a hand locking quadrant operator for control and position indication.

Type QX Operator *

The QX Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a 2" (51) stand-off bracket and hand locking quadrant for control and position indication. To ensure quadrant is located on vertical side of duct, specify damper with blades parallel to the horizontal duct dimension.

*Not available on Model OBDD-A



Air Balancing Devices

OPPOSED BLADE DAMPERS – STAINLESS STEEL

Nailor Stainless Steel Opposed Blade Dampers feature heavy gauge, roll-formed blades and a heavy duty frame in all stainless steel construction. Type 304 stainless steel is standard with Type 316 as an available option.

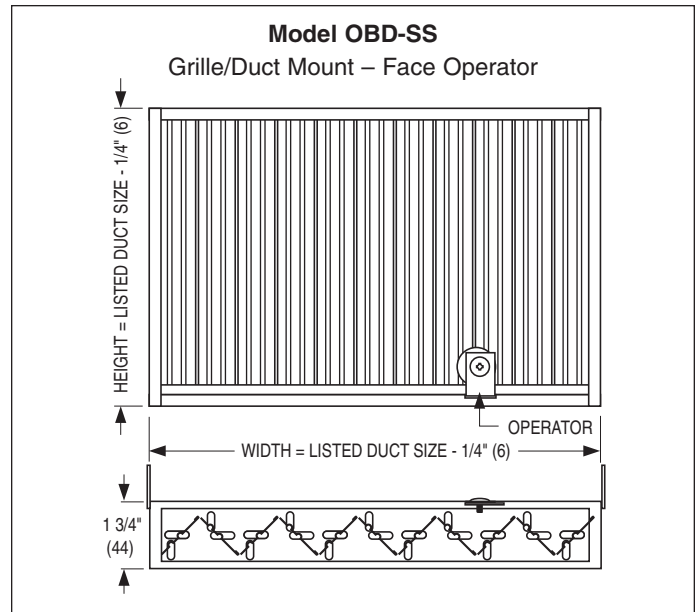
The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

GRILLE/DUCT MOUNT MODELS:

OBD-SS Stainless Steel

When ordered as part of the stainless steel grille, (using the suffix '-O' on the model number), the dampers are factory welded to the grille frame to provide a secure non-removable connection. If the dampers are ordered separately, they are supplied with mounting tabs. The tabs allow the dampers to be field installed onto a grille or to be mounted independently in the duct, separate from and behind the grille.

All **Nailor** stainless steel dampers feature a Philip's head screwdriver operator that is accessed through the face of the grille.



Volume Extractors

MODEL SERIES

EX Blades on 2" centers

EXD Blades on 1" centers

The **Model Series EX Volume Extractors** uniformly divert air from the main duct into the branch take-off and across the face of a grille or diffuser. Gang-operated parallel blades available on 2" (51) or 1" (25) centers pivot from full open to full closed with blades overlapping for shut-off. The curved blade design improves airflow by reducing turbulence, thereby reducing noise and pressure drop.

Specify on order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

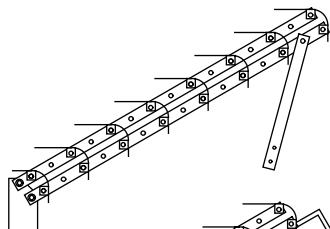
FEATURES:

- Material: Galvanized steel.
- Minimum size: 6" x 4" (152 x 102).
- Maximum size: 36" x 36" (914 x 914).

Operator Types

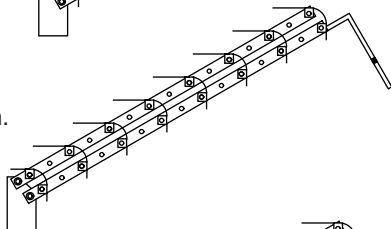
EX/EXD-1

Standard unit with adjusting strap.



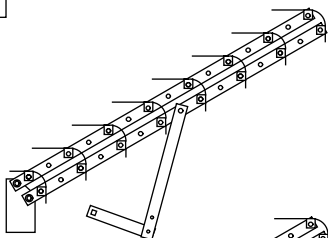
EX/EXD-1-R

Rod operator for external operation.



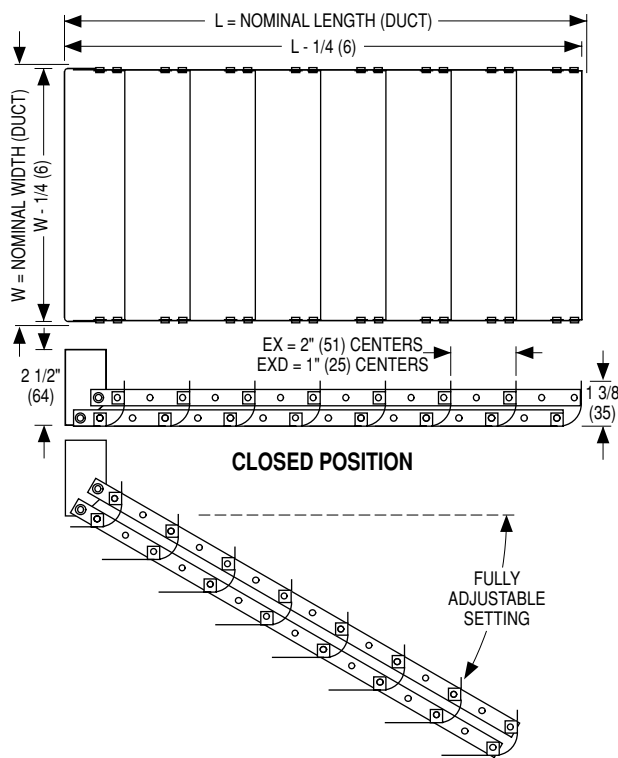
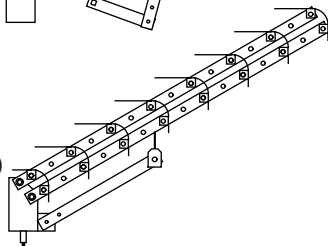
EX/EXD-2

Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.



EX/EXD-3

Screw gear operator. Adjusts with 3/16" (4.8) wrench (by others).



Optional Accessories

RLD

Locking device for Models **EX/EXD-1-R**.

