

QUICK REFERENCE
PRODUCT CATALOG

FOR AIR DISTRIBUTION AND EQUIPMENT SOLUTIONS

**LET'S WORK TOGETHER TO MAKE YOUR
NEXT AIR DISTRIBUTION APPLICATION SUCCESSFUL.**



WWW.KRUEGER-HVAC.COM



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INTRODUCTION

DESIGNING EFFECTIVE AIR DISTRIBUTION SYSTEMS THAT DELIVER MAXIMUM OCCUPANT COMFORT

It's a tough thing to achieve. And there's no doubt that we've all experienced some form of poor air distribution to know how important it is to get right.

But getting it right requires a lot of thought, research, and planning, which isn't easy. Lots of questions have to be asked and answered. *What are the heat loads going to be in the space? What is the optimal spacing between diffusers? How will my selections affect the installed cost? What is the best type of system for the application?* The choices are many. And it only gets more complicated when we start talking about codes and standards.

But what if it could be easier?

It certainly can. In fact, we've asked ourselves this question many times. It's already led us to the development of several helpful on-line tools, such as our cross reference program, custom performance data spreadsheets, and several calculators, just to name a few. It's also what inspired the development of this Quick Reference Product Catalog.

So what is it, exactly?

It's a distinctly different approach to providing catalog information. Every product is presented within one physical page. On the front are images, features, sizes, and options. On the back are drawings, performance data, and design information.

The idea is for it to be the bridge between print and digital media. So while the information here is abbreviated, you can use the web search terms or the QR codes located on the front of each page to quickly navigate to online material that provides more in-depth information.

In terms of what makes this catalog so incredibly useful is the method in which the information is presented, particularly the performance and design data.


If you know some operational characteristics you need to meet, like NC, CFM, or throw, our range-based format allows you to quickly identify the related unit size. And on the flip side, it's easy to see the differences as you move from row to row.

For diffusers that are to be used in open plan office applications, we provide the minimum CFM/sqft, which indicates VAV turndown, a very important item to consider for energy efficiency. These values are based on calculations from the ASHRAE Handbook Air Diffusion Performance Index. Also provided are diffuser separation distances, which are geometrical calculations that are based on airflow at a given maximum allowed sound level and airflow rate per unit area.

For other product groups, we include helpful design parameters within the page or reference supplemental information, located in the back. These supplemental pages provide a wealth of insight into air distribution design and application, so it's definitely time well spent to read through them before designing your next air distribution system.

But before you begin, we invite you to learn more about Krueger.





"The customer is at the cornerstone of everything we do. A relentless effort to educate and find innovative ways to make it easy to do business drives Krueger each and every day."

Brian Solis, Vice President, Krueger



Shown above is one of three large wall displays dedicated to Krueger grille, register, and diffuser products.

Shown top right is a smoke demonstration of our model FDR, underfloor diffuser with helical air pattern.



Shown above is Krueger's ASB, active high capacity chilled beam, which is displayed in our specialty products showroom.

Shown left is Krueger's "box on box" display that shows differences between units, motors, and reheat options.

Shown right is a displacement ventilation smoke demonstration (with center heat source).

ABOUT US

A DISTINCTLY DIFFERENT CULTURE THAT FOCUSES ON UNIQUE SOLUTIONS, MEMORABLE EXPERIENCES, AND STRONG RELATIONSHIPS

Krueger's culture is distinctly different. It's one that stems from a clear vision and unshakable confidence to pave the way forward. It's customer-focused, team-oriented, and rooted with strong values. It's a willingness to continually improve and learn, embracing technology, innovation, creativity, and diversity. And it remains fueled by a passion for what we do each day, which is to provide unique solutions, deliver memorable experiences, and build strong relationships.

Unique Solutions

As a market leader, we believe it is our responsibility to inform, educate, and provide the tools necessary to develop well performing air distribution systems. We do this by developing unique resources that will aid you in the design and specification process.

One item that many engineers have found useful is our custom performance data sheets. By simply entering in a few pieces of information, you have access to custom performance data for Krueger grilles and registers that you can then copy and paste into other documents.

Available are also a number of calculators, including the Comfort Tool, which can help you determine the acceptable limits of temperature, air speed, and humidity for building occupants in both mechanically and naturally conditioned spaces.

For those special applications which have stringent or unusual building requirements, space limitations,

obstructions or otherwise, Krueger engineers, along with your local Krueger representative, will work with you to determine the best resolution, whether it means modifying an existing product or developing a new, niche product.

Memorable Experiences

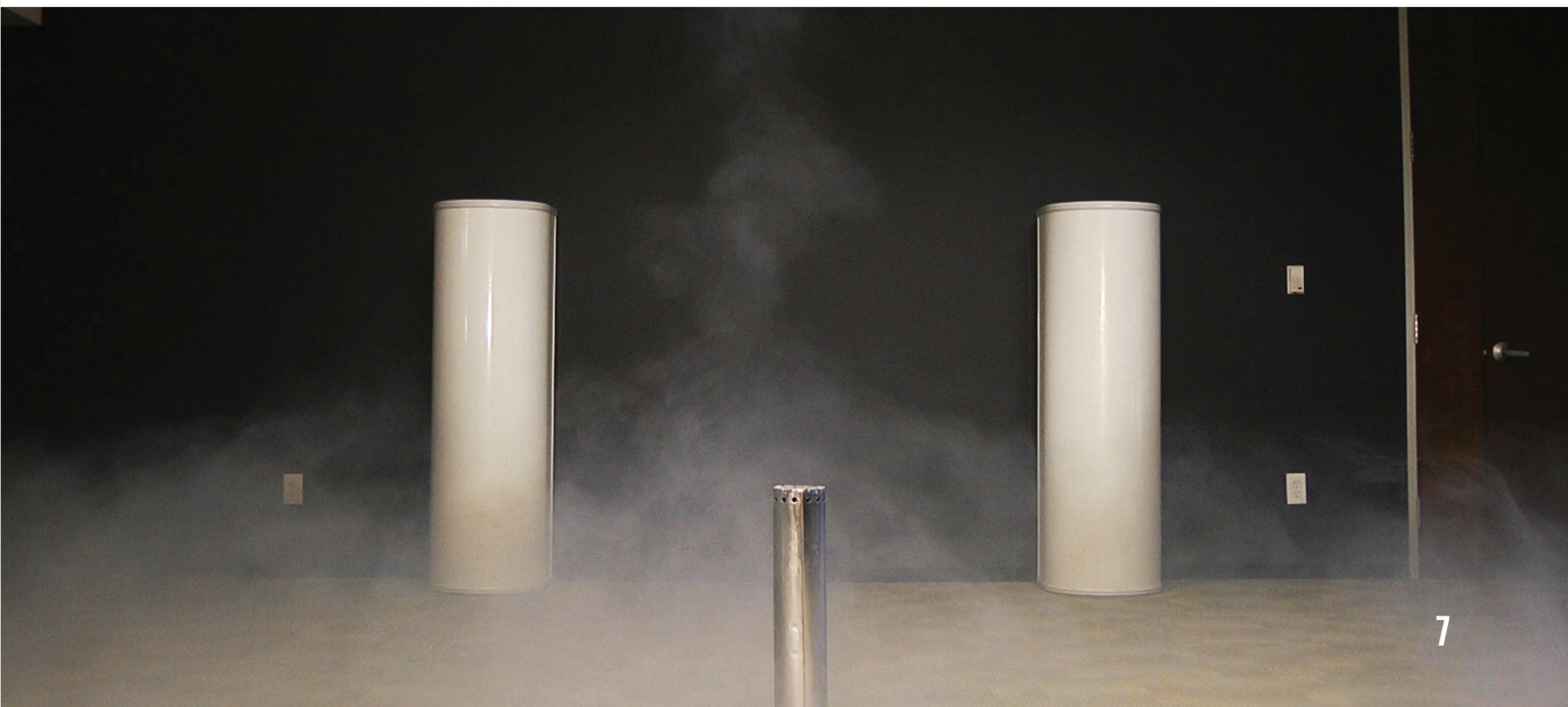
Whether in person, over the phone, or through email, we work hard to ensure that each experience is positive and professional.

And when we look specifically at building memories, we've found that the time spent in our laboratory is what seems to leave people with the greatest impression. Not only can we perform smoke demonstrations to show basic differences between product types, but we're able to change the operating conditions on request to satisfy curiosities.

Strong Relationships

While we can always discuss our broad product offering and our dedication to customer service, what it really comes down to is trust. It's trusting that the information we provide is accurate and reliable, that we have your best interest and that of the occupant at heart, and that the relationships we build with you are genuine.

We're excited that you have chosen Krueger as your partner in designing air distribution systems and welcome the opportunity to work together.



PRODUCTS

GRILLES, REGISTERS, AND DIFFUSERS

Krueger offers one of the industry's broadest selections of grilles, registers, and diffusers (GRDs) with a time honored tradition of superior design and exceptional quality. In fact, this product segment was the foundation on which Leo Krueger built our company over 70 years ago. Many of the first models released, like the SH flush face louvered diffuser, remain popular selections to this day.

That, however, hasn't stopped us from pursuing new, innovative products. Our PRISM™ ceiling diffuser offers a unique solution with its center appliqué, available in numerous colors and custom designs, which can be used to complement the interior decor of a space. Even more impressive, the PRISM™ delivers desirable performance at both high and low air volumes, making it an ideal choice for VAV systems. (See page 25 for product information.)

Just this summer, we released a completely sight proof egg crate return grille, an industry first! Regardless of which direction the grille is installed or the angle at which it is viewed, the plenum space is not visible. (See page 245 for product information.)

With swift, seamless execution of custom product requests and new product initiatives continually in the works, we make it a priority to deliver customer solutions, fill industry product holes, and meet the needs of the marketplace. Whether it be altering an existing model to serve a unique application or developing an original product to resolve an industry shortcoming, Krueger is committed to providing solutions that will make your air distribution system a success.



DIFFUSERS

For ceiling and high-wall applications, select from a wide variety of diffusers, including plaque, perforated, louvered, modular core, linear slot, plenum slot, round, and air nozzles.



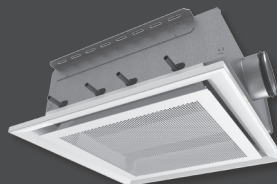
GRILLES & REGISTERS

Along with a vast array of supply and return grilles, Krueger makes available several specialized types, including linear bar, security, industrial, duct-mounted, transfer, and stainless steel.



UNDERFLOOR PRODUCTS

Satisfy environments with high churn rates with a complete underfloor air distribution system. Our offering includes round floor diffusers, floor grilles, and terminal units.



CHILLED BEAMS

Whether an active or passive variety, Krueger chilled beams make a great solution for applications where potential energy savings and quiet operation are desired, such as educational or government facilities.

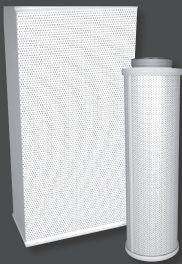
SPECIALTY PRODUCTS

Whether you strive to improve indoor air quality, maintain precise control over airflow patterns in a laboratory, or reduce the risk of surgical site infections in a hospital operating room, you can meet these requirements with Krueger specialty products. Within this category are chilled beams, displacement ventilation, and critical environment products.

While not a new technology, market demand for displacement ventilation solutions continues to rise on account of its many benefits. Over the course of this past year, we expanded our offering with three new products. Krueger's new AFR unit is an exciting architectural solution that can be installed within walls or stair risers. Our AFL unit is a unique, ceiling-based solution for interior spaces, which can be paired with the new AFH, a combination

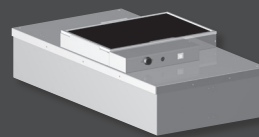
heating and cooling unit, for perimeter areas. (See pages 349-354 for product information.)

For the most specialized applications, where the health and safety of occupants are critical, specify Krueger's line of critical environment solutions. **Krueger's Sterilflo System® is the only hospital particulate control system to have been tested during live surgery.** It consists of laminar flow diffusers and an air curtain to deliver clean, filtered air to the surgical site while extracting and guarding against the reentry of harmful contaminants. Now, with technological and manufacturing advances, you can simplify the ceiling and facilitate installation with optional integrated lighting and/or specialized ceiling grid systems. (See page 381 for product information.)



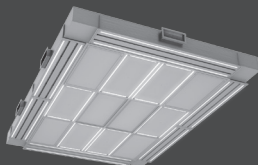
DISPLACEMENT

From curved to flat and from wall to ceiling, these products are able to provide thermal comfort, meet stringent sound requirements, and deliver improved indoor air quality.



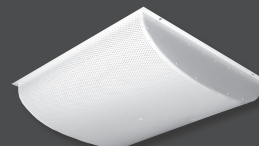
CLEANROOM PRODUCTS

Krueger fan filter units make a great solution for environments that demand the highest levels of cleanliness, such as laboratories, clean rooms, and microprocessor assembly areas.



HOSPITAL OPERATING ROOM PRODUCTS

Whether you require a custom (Sterilflo System®) or modular (Sterilflex System™) solution, these systems can help reduce the risk of surgical site infections in hospital operating rooms.



LABORATORY PRODUCTS

Available in both curved and flush face varieties, Krueger's radial flow diffusers focus on moving air out and away from the face, keeping harmful contaminants from escaping fume hoods.

PRODUCTS (CONTINUED)

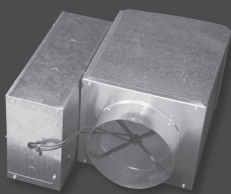
TERMINAL UNITS

Driven by new technologies and changes to codes and standards, Krueger's selection of terminal units continues to evolve. One of our more recent solutions is the KLPS-D, a low profile series fan powered terminal unit that utilizes a sensible cooling coil, which offloads the sensible cooling demand at the DOAS air handler. With a lower sensible cooling demand, the DOAS air handler has the potential to be downsized, reducing first cost and overall energy consumption. (See page 429 for product information.)

We're also utilizing new technology advancements with EC motors. Not only do EC motors have higher efficiency ratings than equivalent PSC motors, they also allow demand tracking fan airflow, which is where the true energy savings are achieved. By operating an EC motor as variable airflow rather than constant airflow, there is a

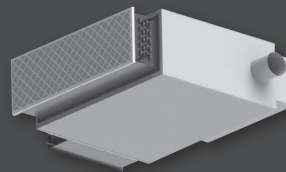
potential for significant savings. In fact, we've seen some situations where energy consumption has been reduced from >300 Watts to <50 during turndown or low demand.

For applications that require electric reheat, Krueger's LineaHeat™ can help reduce energy consumption as well as prove compliance to ASHRAE Standard 62.1. LineaHeat™ is a proportionally time modulated electric heater that strives to meet load requirements while engaging as little as possible. And when utilized with a discharge air temperature sensor, which gives you the ability to adjust the maximum leaving air temperature for heating, you can ensure supply air temperatures to the room are never greater than 15°F from the room set point, a requirement made by ASHRAE 62.1. (See terminal units starting on page 411.)



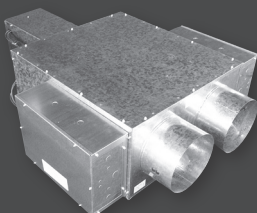
SINGLE DUCT TERMINAL UNITS

Krueger's LMHS is one of the most versatile single duct air control products on the market, providing easy HVAC system integration with diverse control packages.



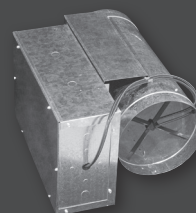
FAN POWERED TERMINAL UNITS

Operating either as a series or parallel unit, these products offer added flexibility with ultra-quiet and low-profile varieties.



DUAL DUCT TERMINAL UNITS

Designed for dual duct systems, Krueger's offering includes models for mixing and non-mixing applications.



RETROFIT AND BYPASS TERMINAL UNITS

Available for use in a wide variety of applications, these products are more commonly required for retrofit or air measuring purposes.

FAN COIL AND BLOWER COIL UNITS

Designing air distribution systems for complex high rise or multi-family applications can be challenging. And while there are always performance requirements to meet, there are also space limitations, aesthetics, and several other concerns that can make the selection of fan coil or blower coil units difficult. Fortunately, Krueger has a wide variety of flexible solutions from which to choose.

Some optional features offered on these units include EC motors to help reduce energy consumption as well as valve packages and thermostats, which can make it a one-stop-shop to satisfy all the building's needs.

For applications requiring higher volumes, select from our line of blower coils (small air handling units), which lead the industry for performance and quality. These units are

available in horizontal, vertical, or modular configurations and are designed with flexibility to meet even the most challenging building requirements.

And when you partner with Krueger for your solution, it's not just the ease of selection or quality product you receive, it's the support you get throughout the entire process from Krueger and your local Krueger representative. Krueger's extensive team of application engineers have the experience and knowledge to help solve any issue you may encounter. In fact, we routinely work with customers to provide customized, timely, and cost-effective solutions. Reach out to your local Krueger representative to start a discussion about your next building application. (See fan coil units starting on page 441 and blower coil units starting on page 463.)



STANDARD AND HIGH CAPACITY FAN COILS

Whether horizontal or vertical, concealed or exposed, standard or high capacity, Krueger is sure to have a fan coil unit to meet the needs of your application.



STANDARD BLOWER COILS

These small horizontal and vertical air handling units are well suited for supplying air to multiple rooms and spaces with long duct runs.



VERTICAL STACK FAN COILS

Designed specifically for high-rise applications, these products offer a great amount of ease for installations in tight spaces.



SMALL FOOTPRINT AND MODULAR BLOWER COILS

When floor space is at a premium or when you need a modular, customized solution, these units are the ideal choice.





TRAINING

BUILDING MEMORABLE EXPERIENCES THROUGH LIVE DEMONSTRATIONS AND HANDS-ON EXERCISES

Krueger's commitment to education is second to none. It is what allows us to grow stronger as individuals, perform better as a team, and be your strategic partner in the design of better air distribution systems.

The goal of Krueger's Institute of Technology (KIT) is to educate engineers, architects, contractors, and building owners on the proper design and specification of air distribution products in commercial and industrial applications. It is our firm belief that by cultivating individuals and empowering them with the knowledge of proper air distribution design practices, we not only improve our ability to support our customers, but as a result, help the industry design and specify more effective and efficient HVAC systems.

Whether a seasoned veteran with years of knowledge or someone just entering the industry, our wide array of demonstrations, activities, and exercises facilitate open discussions, allowing every person to take away something new. Our focused approach, targeting specific product groups during each program, allows us to provide a more comprehensive curriculum that integrates a greater amount of design and application knowledge than ever before.

A Hands-on Experience

Krueger's Institute of Technology delivers a truly different type of training, one that focuses on discussions and hands-on experiences to help illustrate key concepts. Whether working on a group exercise or viewing a product smoke demonstration, we aim to provide a solid foundation of product knowledge and proper application so that a customer's selection works well in their system design.

Experienced Staff

Throughout all of our training classes, we employ a variety of staff, from Product Managers and Application Engineers to Sales and Marketing. With hundreds of years of industry experience combined, you can rest assured that there will always be a specialist available to answer even the most complex question.

Private Programs

In addition to formal KIT classes, we encourage our representatives to bring their contractors, engineers, architects, and building owners to visit our facility for a more customized training experience and to fulfill the immediate needs of their business. Visits can range from a one hour tour and overview of our product offering to multiple day sessions with in-depth discussions and training on product, applications, and design.

Programs and Topics

Grille, Register, and Diffuser Training

Terminal Unit, Fan Coil, and Blower Coil Training

Chilled Beam, Displacement Ventilation, and Underfloor Training

Hospital Operating Room and Critical Room Training

CAPABILITIES

ENGINEERING AND TECHNOLOGY

Our talented team of design and application engineers provide a wide range of services to facilitate the design process.

Reviewing Specifications

One of the top priorities of our engineering team is to ensure that products are properly specified and that selections work well in the overall system design. As a service to our customers, we review specifications to bring them up to current codes as well as discuss alternative approaches that may result in improved performance, efficiency, or cost. We also offer a customized CFD analysis (computational fluid dynamics) upon request. These reports can both confirm a successful design as well as identify areas for concern or improvement, both for air velocities and temperature.

Develop Drawings

We are constantly involved in projects that require customized drawings, such as Krueger's Sterilflo System® operating room particulate control system. Our Engineering team is able to provide a clear, complete drawing package for each system that includes a reflected ceiling view, plan view, and cross section view along with installation details. The drawing packages ensure the customer has all the necessary information to achieve a successful project.

For curved products, such as DesignFlo®, 1900, or linear bar grilles, Krueger is able to quickly turn around approval drawing packages, complete with the radius and arc length dimensions to verify that the custom linear product will be built to the exact project specifications.

Generate New Products for Niche Applications

Krueger understands that there are unique buildings and different situations that require special attention, which often are only resolved through the development of new or niche products.

By understanding the requirements of the product, the limitations of the situation, and how it will integrate with the overall air distribution system, Krueger Engineering is able to put forth their expertise to thoroughly research and develop a product that can meet those needs.

One such example is Krueger's KLPS size 1 ultra low profile series fan powered terminal unit. This product was developed in coordination with the local Krueger representative and their customer to solve the issue of retrofitting older buildings in Washington D.C., where the shallow ceiling plenum between floors limited the use of other products. After research, prototypes, and testing, Krueger's Engineering team successfully developed a product that met the customer's needs, which resulted in several successful installations. The KLPS size 1 is now a standard product offering available to everyone.

Revit Blocks

To achieve greater control and detail of your air distribution designs, use Krueger's Revit Building Information Modeling (BIM) blocks. While we offer blocks for a variety of our products, for the terminal units specifically, our blocks are configured with unit specific information to help ensure that the product selection corresponds to the drawing information.

Industry Affiliations

Working closely with industry organizations, Krueger has been instrumental in driving the improvement and development of many industry standards that are in place today and have been known for maintaining integrity in data reporting.



ASHRAE MEMBER

American Society of Heating, Refrigerating and Air-Conditioning Engineers



ETL LISTED

Listed by Intertek Group, PLC



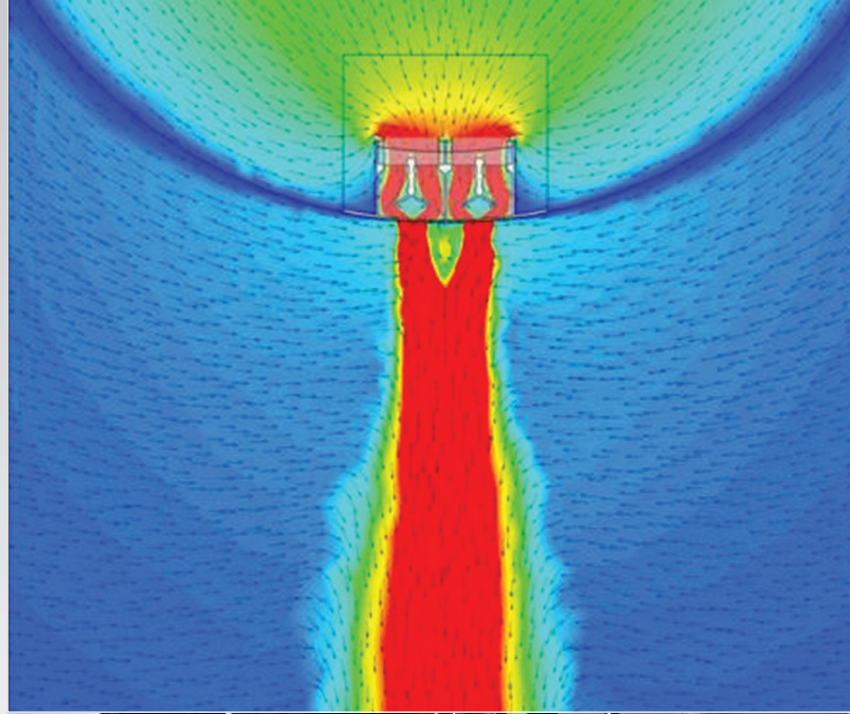
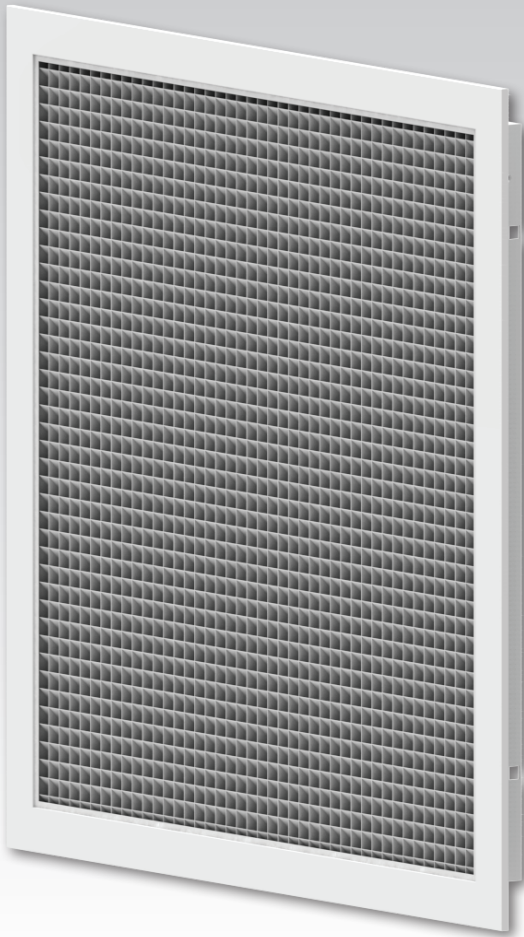
AHRI LISTED

Listed by Air Conditioning, Heating, and Refrigeration Institute



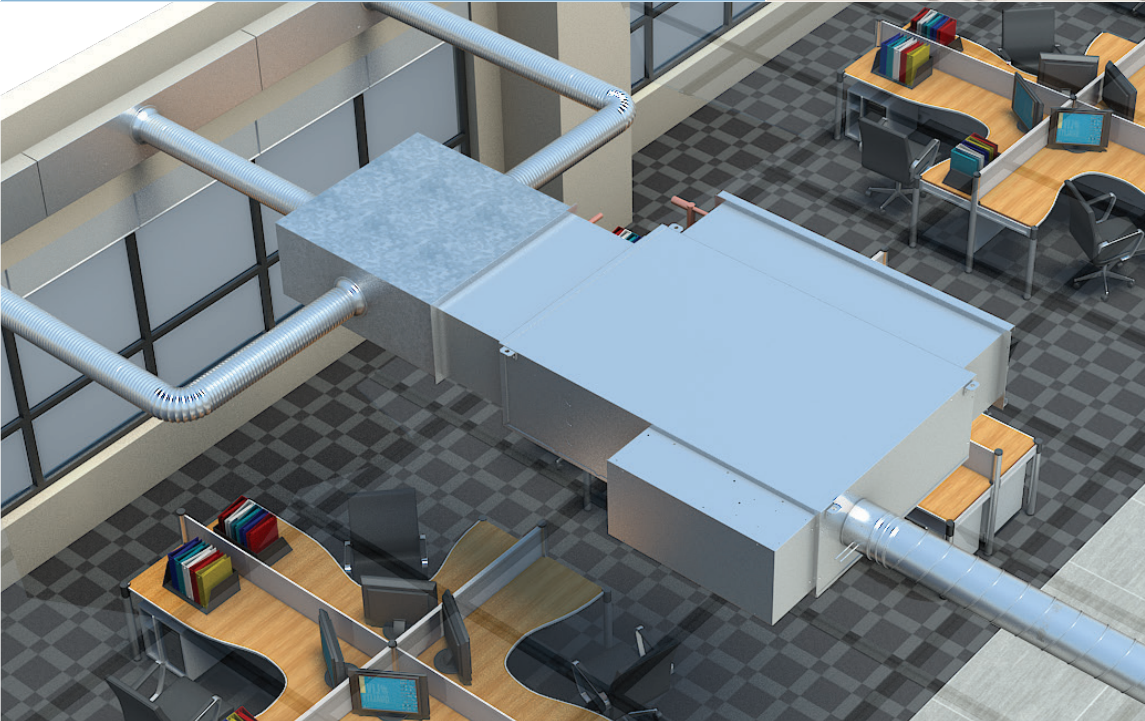
ISO 9001:2015 CERTIFIED

Certified by Det Norske Veritas (DNV)



Shown above is a photorealistic rendering of our new EGCX sightproof egg crate grille that was generated from an engineering solid model.

Shown top right is output from a CFD air velocity analysis on Krueger's 1900 linear slot diffuser.



Shown above is a test install of Krueger's Frameworkx™ ceiling grid system for hospital operating room applications. Each grid system is custom made to order, welded, ASTM 635C tested and certified for heavy duty loads.

Shown left is a room illustration derived from engineering solid model of the KLPS-D, Krueger's low profile, series DOAS fan powered terminal unit.



FOR MORE INFORMATION...

Website - www.krueger-hvac.com

Krueger's website is continually updated with information, including electronic versions of our printed brochures and Product Catalog; custom performance data (for grilles); downloadable REVIT files; comfort, sound, and AHRI calculators; selection software; product cross reference; white papers and published articles; product videos; recorded webinars; and local Krueger representative contact information. And if you're on the go, our website is fully responsive for viewing on tablet and mobile devices.

Social Media

Stay up to date with all the latest developments by following us through our social media platforms: LinkedIn®, Twitter®, Facebook®, YouTube®, and Instagram®. Our handle in each is "kruegerhvac".

Air Distribution Blog

Be "in the know" by subscribing to Krueger's Air Distribution blog. Here, we provide industry updates, talk about observations during visits with engineers, and discuss a variety of HVAC information that can help prevent and correct air distribution issues.

Selection Software

Once products have been identified for a given application, Krueger's selection software can do the heavy lifting for you. It will provide all the information necessary to specify and configure each product, which can then be exported and provided to your local Krueger representative to facilitate the order process.

Representative Channel

Krueger representatives, located throughout North America and internationally, are a valuable resource available to assist you with design, application, and product questions, as well as pricing and lead time requests. Their partnership with Krueger offers an intimate understanding of air distribution needs within each market as well as the various solutions that are available.

To locate the representative nearest you, visit our website at the location provided below.

https://www.krueger-hvac.com/search_reps/sales

MODELS

- PLQ - Steel, architectural ceiling diffuser with square plaque
- 5PLQ - Aluminum, architectural ceiling diffuser with square plaque

FEATURES

- 360° radial discharge air pattern
- Square faceplate, removable for easy access to duct and damper
- Reduced pressure drops
- Quiet sound profile

INLET SIZES

- Round: 6", 8", (7")¹, (10", 12", 14", 15")²

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F98 - Narrow-T²

PANEL SIZES

- 12"x12"
- 20"x20" (available for PLQ only)
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- R6 - Rigid R-6 fiberglass backing
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- DBT - Steel, directional blow tab
- 5DBT - Aluminum, directional blow tab

NOTES:

- ¹ Available with 12"x12" panel only.
- ² Available with 24"x24" panel only.

Some options and accessories are a part of the product configuration; others may be ordered separately. See website or selection software to check compatibility.

Use the web search term(s) to locate product information on the Krueger website.



Scan the QR code to quickly navigate to product information on mobile and tablet devices.

WEB SEARCH: PLQ or 5PLQ

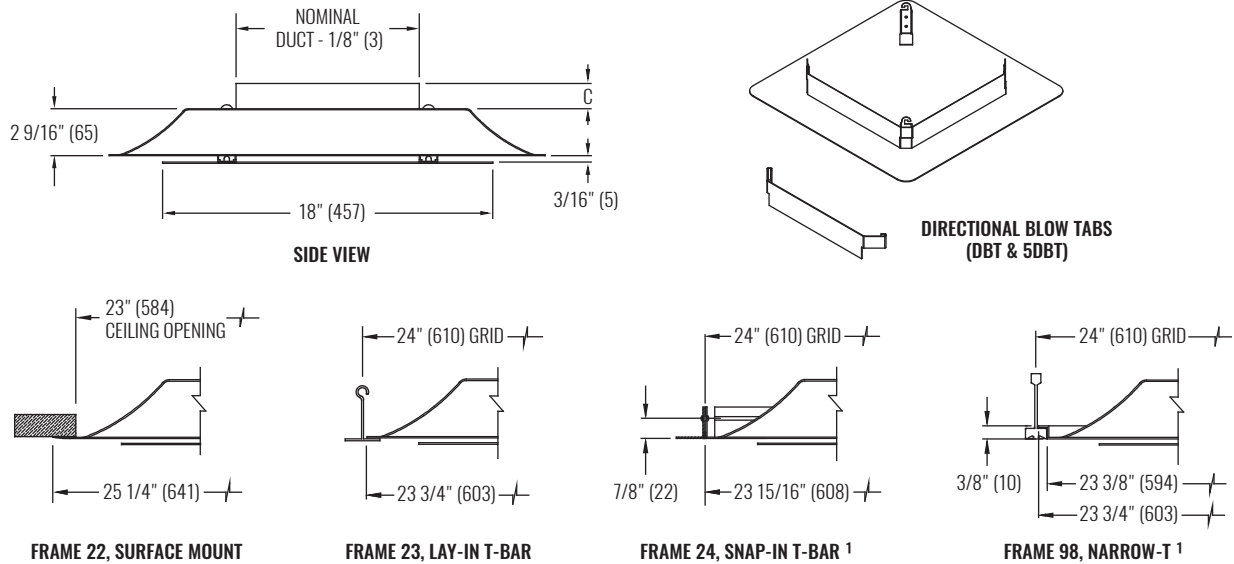


PLQ / 5PLQ

Square Plaques Face Diffuser



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel. See table below for dimensional references.
¹ Applies to PLQ only.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	C
		CFM	THROW (ft)	CFM	THROW (ft)				
12"x12"	6"	39 - 177	3 - 12	196 - 300	13 - 17	215	19	0.18	1 1/8" (29)
	7"	53 - 241	3 - 14	267 - 400	15 - 19	285	22	0.19	1 1/8" (29)
	8"	70 - 314	3 - 16	349 - 520	17 - 22	375	25	0.20	1 1/4" (32)
24"x24"	6"	39 - 210	1 - 9	225 - 320	10 - 12	250	20	0.22	1 1/8" (29)
	8"	70 - 340	3 - 13	360 - 515	13 - 16	395	26	0.25	1 1/4" (32)
	10"	109 - 491	4 - 15	510 - 735	16 - 19	570	31	0.26	1 3/8" (35)
	12"	157 - 628	5 - 17	655 - 950	18 - 21	740	35	0.27	1 3/8" (35)
	14"	214 - 840	7 - 20	880 - 1270	20 - 25	980	40	0.28	1 3/8" (35)
	15"	245 - 925	7 - 21	982 - 1400	22 - 26	1100	43	0.29	1 3/8" (35)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

Table data has been consolidated. Performance data is range-based. Design data provides recommendations on diffuser spacing in open plan environments based on 80% ADPI; see supplemental pages (located in the back) to understand the basis on which these values were developed. See website for complete product information.

MODELS

- PLQLT - Steel, architectural ceiling diffuser with square plaque, insulated for low temperature applications

FEATURES

- 360° horizontal discharge air pattern
- R-6 rigid fiberglass insulated backpan and 3/8" cellular insulated plaque face to resist condensation
- Removable square faceplate provides easy access to duct and damper
- Reduced pressure drops
- Quiet sound profile

INLET SIZES

- Round: 6", 8", 10", 12", 14", 15"

FRAME STYLES

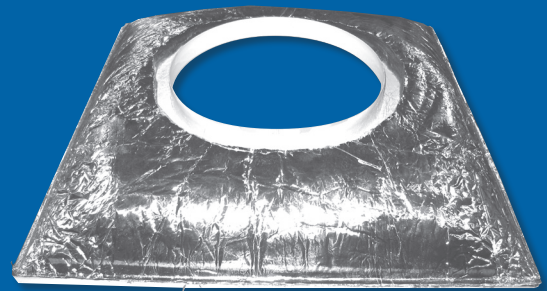
- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

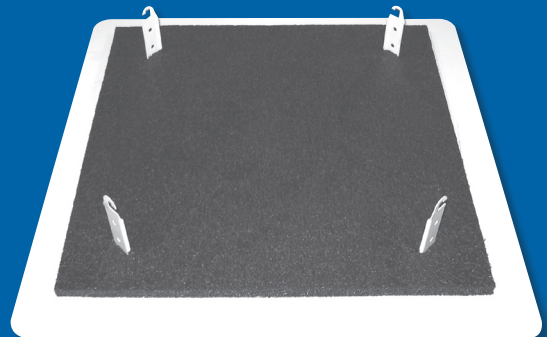
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- DBT - Steel, directional blow tab



BACKPAN VIEW



BACK OF PLAQUE

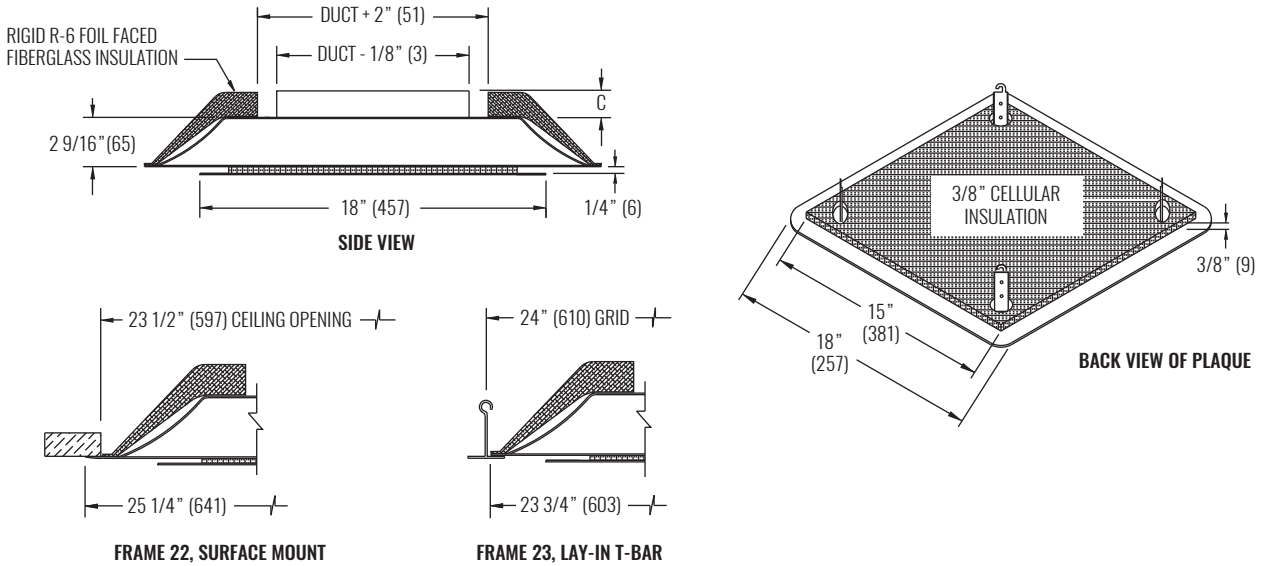


PLQLT

Square Plaques Face Diffuser, Insulated for Low Temperature



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	C
		CFM	THROW (ft)	CFM	THROW (ft)				
24"x24"	6"	39 - 210	1 - 9	225 - 320	10 - 12	250	18	0.22	1 1/8" (29)
	8"	70 - 340	3 - 13	360 - 515	13 - 16	395	20	0.25	1 1/4" (32)
	10"	109 - 491	4 - 15	510 - 735	16 - 19	570	22	0.26	1 3/8" (35)
	12"	157 - 628	5 - 17	655 - 950	18 - 21	740	26	0.27	1 3/8" (35)
	14"	214 - 840	7 - 20	880 - 1270	20 - 25	980	30	0.28	1 3/8" (35)
	15"	245 - 925	7 - 21	982 - 1400	22 - 26	1100	34	0.29	1 3/8" (35)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- PLQIMP - Steel, architectural ceiling diffuser with square plaque and integrated multi-port ring
- 5PLQIMP - Aluminum, architectural ceiling diffuser with square plaque and integrated multi-port ring

FEATURES

- Integral multi-port diffusion ring
- Significantly increases room air mixing
- Excellent choice for VAV applications
- High induction at diffuser face
- Low pressure drop ensures efficient system design
- Removable square faceplate provides easy access to duct and damper

INLET SIZES

- Round: 6" - 14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar
- F22 - Surface mount
- F24 - Snap-in T-bar ¹
- F98 - Narrow-T ¹

PANEL SIZE

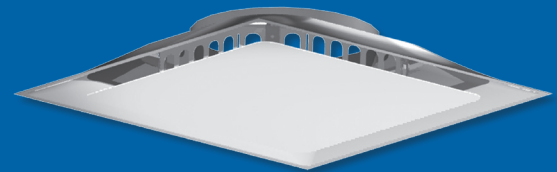
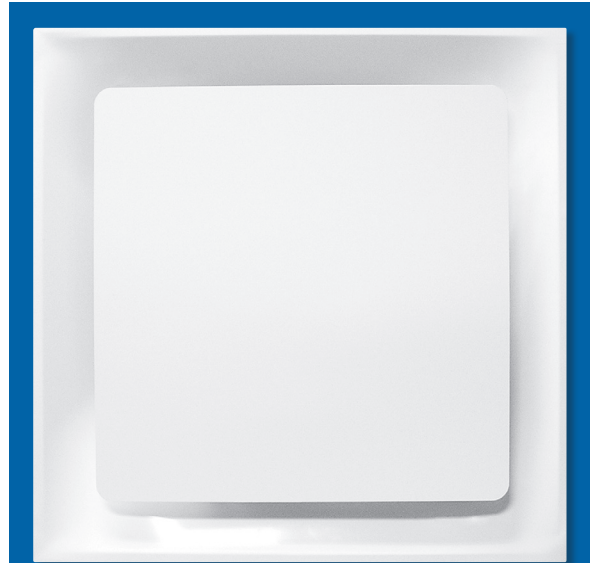
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- R6 - Rigid R6 fiberglass backing
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- DBT - Steel, directional blow tab
- 5DBT - Aluminum, directional blow tab

NOTES:

- ¹ Available with PLQIMP only.



ISOMETRIC VIEW

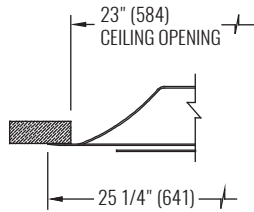
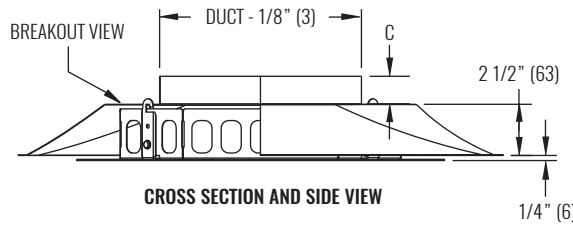


PLQIMP / 5PLQIMP

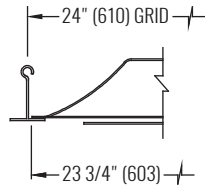
Square Plaque Face Diffuser, Integrated Multi-port Ring



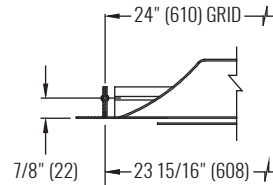
DIMENSIONAL DATA



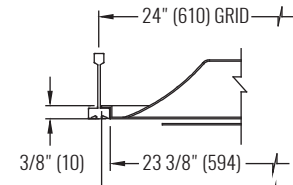
FRAME 22, SURFACE MOUNT



FRAME 23, LAY-IN T-BAR



FRAME 24, SNAP-IN T-BAR ¹



FRAME 98, NARROW-T ¹

NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

¹ Available with PLQIMP only.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	C
		CFM	THROW (ft)	CFM	THROW (ft)				
24"x24"	6"	79 - 220	0 - 3	236 - 314	4 - 8	265	N/A	N/A	1 1/8" (29)
	8"	105 - 279	1 - 7	309 - 489	8 - 13	350	N/A	N/A	1 1/4" (32)
	10"	109 - 360	2 - 11	382 - 600	12 - 18	435	15	0.50	1 3/8" (35)
	12"	157 - 432	6 - 17	471 - 707	18 - 23	525	20	0.40	1 3/8" (35)
	14"	214 - 500	13 - 19	535 - 855	20 - 26	620	28	0.30	1 3/8" (35)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- PLQR - Steel, architectural ceiling diffuser with round plaque

FEATURES

- 360° radial discharge air pattern
- Round faceplate, removable for easy access to duct and damper
- Reduced pressure drops
- Quiet sound profile

INLET SIZES

- Round: 6", (7")¹, 8", (10", 12", 14", 15")²

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F98 - Narrow-T²

PANEL SIZES

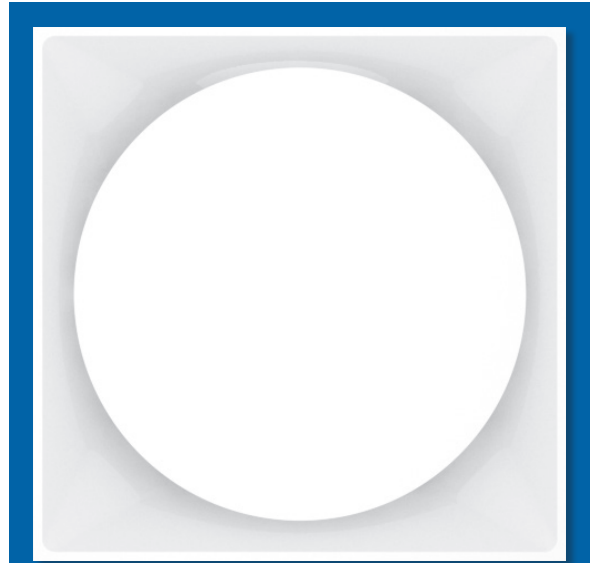
- 12"x12"
- 20"x20" (available for PLQ only)
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

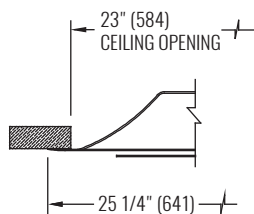
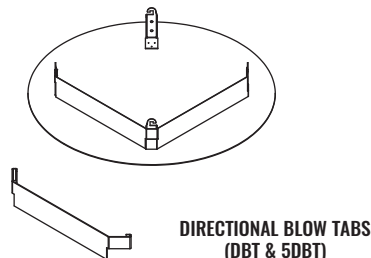
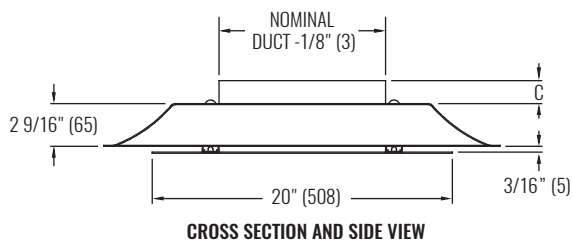
- R6 - Rigid R-6 fiberglass backing
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- DBT - Steel, directional blow tab
- 5DBT - Aluminum, directional blow tab

NOTES:

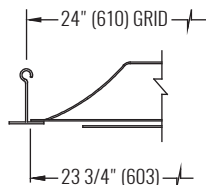
- ¹ Available with 12"x12" panel only.
- ² Available with 24"x24" panel only.



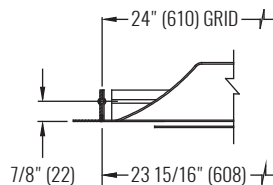
DIMENSIONAL DATA



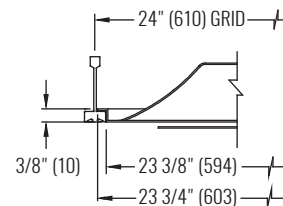
FRAME 22, SURFACE MOUNT



FRAME 23, LAY-IN T-BAR



FRAME 24, SNAP-IN T-BAR 1



FRAME 98, NARROW-T 1

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel. See table below for dimensional references.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	C
		CFM	THROW (ft)	CFM	THROW (ft)				
12"x12"	6"	39 - 196	3 - 10	216 - 350	11 - 14	245	20	0.18	1 1/8" (29)
	7"	53 - 214	3 - 11	241 - 400	11 - 15	270	22	0.19	1 1/8" (29)
	8"	70 - 250	4 - 12	270 - 455	12 - 16	315	24	0.20	1 1/4" (32)
24"x24"	6"	39 - 170	2 - 7	177 - 290	7 - 10	200	18	0.22	1 1/8" (29)
	8"	70 - 260	3 - 9	279 - 435	9 - 12	315	20	0.25	1 1/4" (32)
	10"	109 - 350	4 - 11	370 - 600	11 - 14	425	22	0.26	1 3/8" (35)
	12"	157 - 430	5 - 12	471 - 785	12 - 16	550	26	0.27	1 3/8" (35)
	14"	214 - 560	6 - 13	600 - 962	14 - 18	700	30	0.28	1 3/8" (35)
	15"	245 - 614	7 - 14	660 - 1030	15 - 18	740	34	0.29	1 3/8" (35)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI > 80% and are therefore not recommended.

MODEL

- PRISM - Steel, architectural ceiling diffuser with arcuate plaque face and optional center appliqué

FEATURES

- High induction, 4-way horizontal blow pattern
- Faceplate retrofits with most existing snap-in, perforated diffusers without removal of backpan or duct work
- 9 standard appliqué colors to match interior decor

INLET SIZES

- Round: 6" - 16" (2" increments)
- Square: 6"x6" - 14"x14" (2" increments)

FRAME STYLES

- F22 - Surface mount ¹
- F23 - Lay-in T-bar

PANEL SIZE

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PRISMAPP - Center appliqué
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SSG - Steel, square or rectangular straightening grid

NOTES:

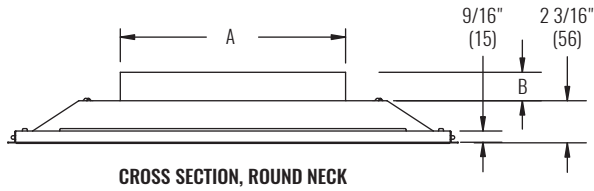
- ¹ F22 option includes separate plaster frame shipped loose for field installation.



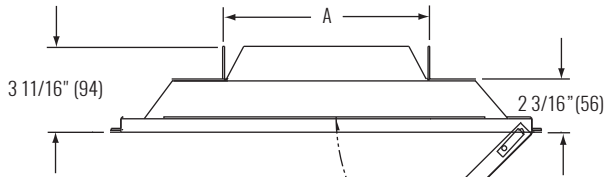
PRISM WITH CENTER APPLIQUÉ



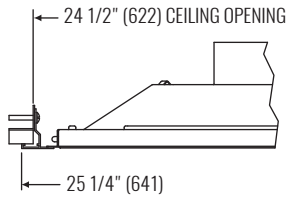
DIMENSIONAL DATA



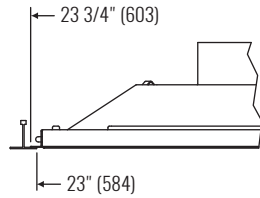
CROSS SECTION, ROUND NECK



CROSS SECTION, SQUARE NECK



FRAME 22, SURFACE MOUNT



FRAME 23, LAY-IN T-BAR

SPRING
RETAINER

NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	SQUARE	ROUND	
		CFM	THROW (ft)	CFM	THROW (ft)				A	A	B
24"x24"	6"	39 - 185	3 - 11	196 - 300	11 - 14	225	17	0.35	5 7/8" (149)	5 7/8" (149)	1" (25)
	8"	70 - 300	4 - 14	314 - 485	15 - 18	360	24	0.33	7 7/8" (200)	7 7/8" (200)	1" (25)
	10"	109 - 436	6 - 17	465 - 700	17 - 21	525	28	0.30	9 7/8" (251)	9 7/8" (251)	1 1/2" (38)
	12"	157 - 580	7 - 19	628 - 930	20 - 24	720	33	0.32	11 7/8" (302)	11 7/8" (302)	1 1/2" (38)
	14"	214 - 748	8 - 22	855 - 1176	23 - 27	940	38	0.35	13 7/8" (352)	13 7/8" (352)	1 1/2" (38)
	16"	279 - 977	9 - 25	1025 - 1536	26 - 31	1150	42	0.38	N/A	15 7/8" (404)	1 1/2" (38)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- KSD - Aluminum, architectural swirl ceiling diffuser

FEATURES

- High capacity airflow
- Promotes room air mixing
- Aesthetically pleasing appearance

INLET SIZES

- Round: 6" - 14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZE

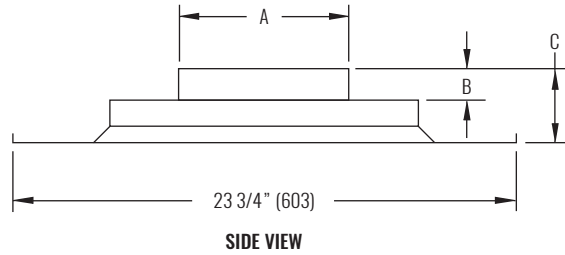
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	A	B	C
		CFM	THROW (ft)	CFM	THROW (ft)						
24"x24"	6"	98 - 215	5 - 8	236 - 360	8 - 10	250	20	0.30	5 7/8" (149)	1 1/2" (38)	3 1/2" (89)
	8"	175 - 310	6 - 9	314 - 515	10 - 12	360	24	0.32	7 7/8" (200)	1 1/2" (38)	3 1/2" (89)
	10"	218 - 400	6 - 11	430 - 654	11 - 14	490	29	0.34	9 7/8" (251)	1 1/2" (38)	3 1/2" (89)
	12"	236 - 490	5 - 12	550 - 864	13 - 16	600	32	0.37	11 7/8" (302)	1 1/4" (32)	3 1/4" (83)
	14"	321 - 605	6 - 12	641 - 962	13 - 17	750	35	0.40	13 7/8" (352)	1 1/2" (38)	3 1/2" (89)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- VPQ-0 - Steel, architectural VAV diffuser with square plaque, constant volume (no control)

FEATURES

- 1-piece, non-folded, square face, steel construction
- Removable faceplate offers easy duct access
- Plaque face attaches to 1-piece, stamped backpan

INLET SIZES

- Round: 6" - 12" (2" increments)

FRAME STYLES

- F22 - Surface mount ¹
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F98 - Narrow-T

PANEL SIZES

- 24"x24"

OPTIONS AND ACCESSORIES

- EQ - Earthquake tabs
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

- ¹ A separate hard ceiling frame (model 5HCF23) is included with the F22, surface mount frame style.

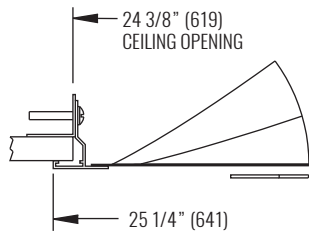
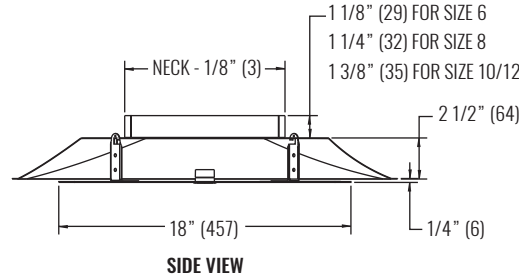


VPQ-0

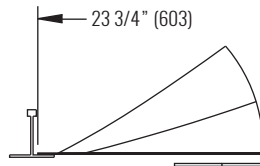
VAV Diffuser, Constant Volume (No Controls)



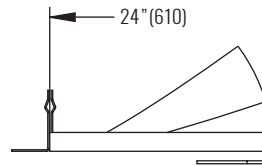
DIMENSIONAL DATA



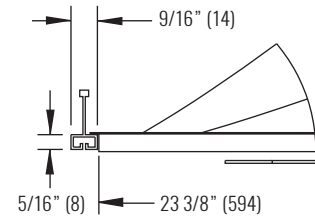
FRAME 22, SURFACE MOUNT ¹



FRAME 23, LAY-IN T-BAR



FRAME 24, SNAP-IN T-BAR



FRAME 98, NARROW-T

NOTES: Dimensions in parentheses are millimeters (mm).

¹ A separate hard ceiling frame (model 5HCF23) is included with the F22, surface mount frame style.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"	39 - 210	1 - 9	225 - 320	10 - 12	250	20	0.20
	8"	70 - 340	3 - 13	360 - 515	13 - 16	380	25	0.22
	10"	109 - 491	4 - 15	510 - 735	16 - 19	600	32	0.27
	12"	157 - 628	5 - 17	655 - 950	18 - 21	760	36	0.32

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- VPQ-4 - Steel, architectural VAV ceiling diffuser with square plaque and thermal (wax) VAV controls

FEATURES

- 1-piece, non-folded, square face, steel construction
- Removable faceplate offers easy duct access
- Plaque face attaches to 1-piece, stamped backpan
- Thermal VAV controls

INLET SIZES

- Round: 6" - 12" (2" increments)

FRAME STYLES

- F22 - Surface mount ¹
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F98 - Narrow-T

PANEL SIZES

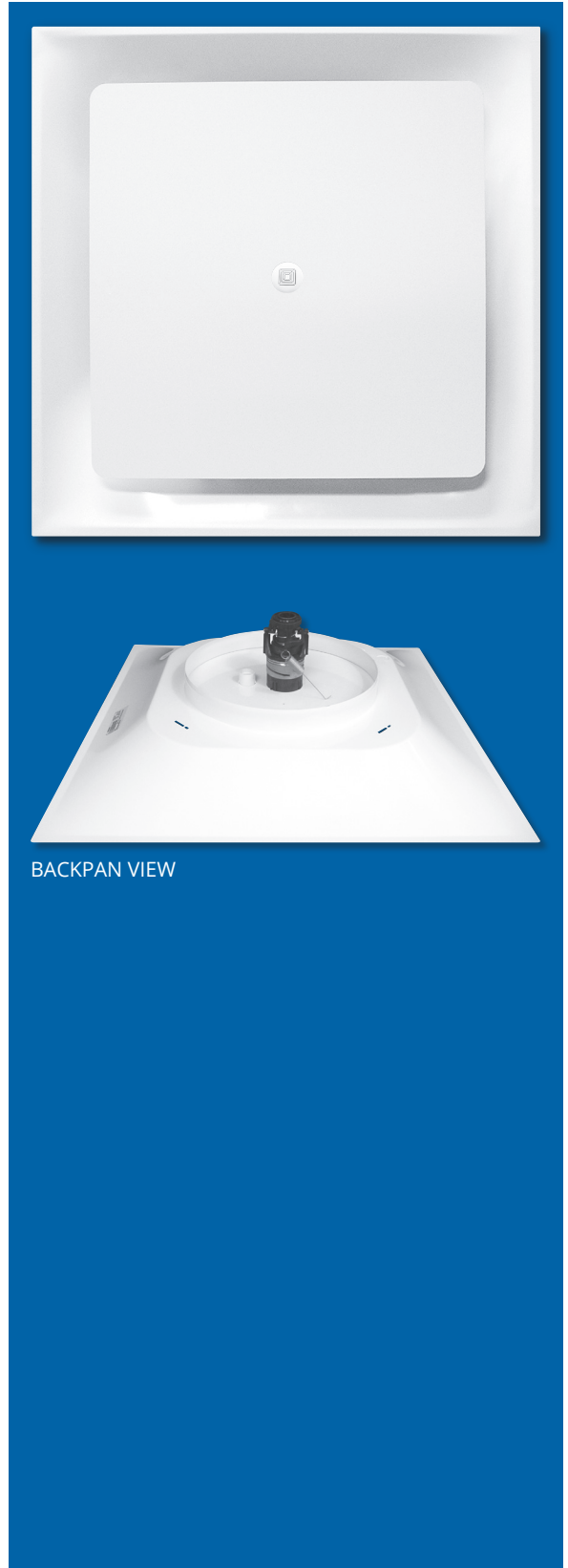
- 24"x24"

OPTIONS AND ACCESSORIES

- EQ - Earthquake tabs
- VPQ4PART - VPQ parts, including relief ring
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

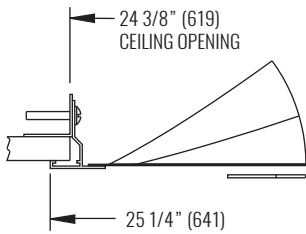
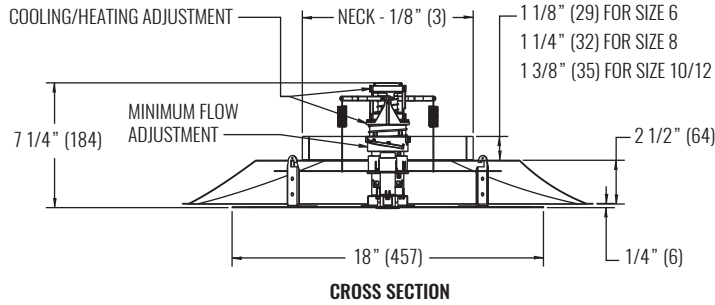
- ¹ A separate hard ceiling frame (model 5HCF23) is included with the F22, surface mount frame style.



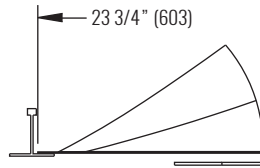
BACKPAN VIEW



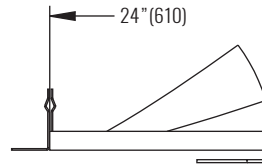
DIMENSIONAL DATA



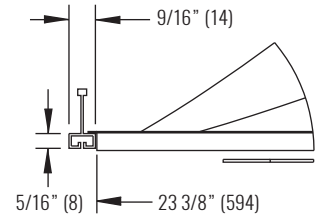
FRAME 22, SURFACE MOUNT ¹



FRAME 23, LAY-IN T-BAR



FRAME 24, SNAP-IN T-BAR



FRAME 98, NARROW-T

NOTES: Dimensions in parentheses are millimeters (mm).

¹A separate hard ceiling frame (model 5HCF23) is included with the F22, surface mount frame style.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"	79 - 196	4 - 9	210 - 285	10 - 12	275	21	0.33
	8"	140 - 270	6 - 11	297 - 420	12 - 14	350	24	0.35
	10"	218 - 332	8 - 12	365 - 590	13 - 17	410	26	0.36
	12"	314 - 381	11 - 13	415 - 785	14 - 19	500	29	0.37

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- DVD - Steel, architectural VAV ceiling diffuser with automatic changeover for heating and cooling

FEATURES

- 1-piece, folded, square plaque face, steel construction
- Plaque face attached to 1-piece, stamped backpan
- Available with digital thermostat as primary unit
- Control up to 20 secondary units with one single primary
- Automatic changeover for both cooling and heating applications
- Easy installation with plug-and-play cabling that requires minimal field programming

INLET SIZES

- Round: 6" - 14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar
- F98 - Narrow-T¹

PANEL SIZES

- 12"x12"
- 24"x24"

OPTIONS AND ACCESSORIES

- Digital wall mounted thermostat²
- Smart thermostat, BACnet compatible
- Thermostat wall-mounted backing plate
- 40 VA - 120V primary voltage transformer
- 75 VA - 120V/208V/240V primary voltage transformer
- 100 VA - 120V/240V/277V primary voltage transformer
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

- ¹ Available with panel size 24"x24" only.
- ² Primary requires a thermostat.

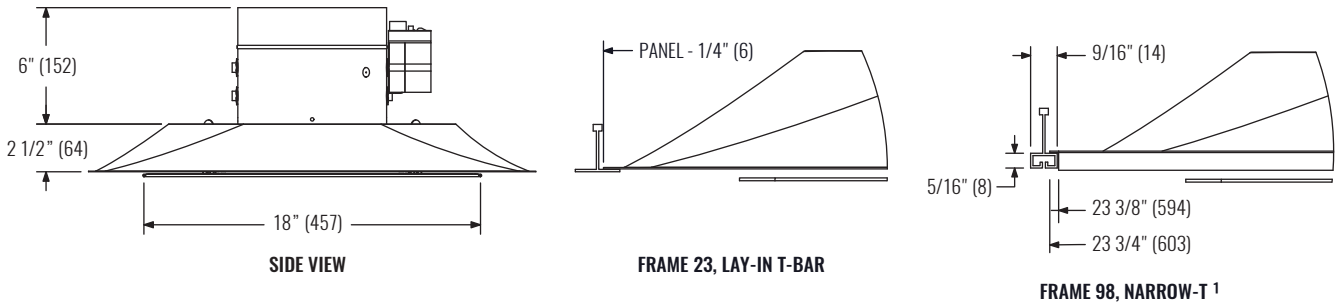


SIDE VIEW

WEB SEARCH: DVD



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel.

¹ Available in 24"x24" panel only.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"	79 - 196	4 - 9	210 - 300	9 - 10	240	18	0.22
	8"	140 - 270	6 - 11	297 - 420	12 - 14	350	23	0.25
	10"	218 - 333	8 - 12	382 - 575	13 - 16	425	27	0.26
	12"	314 - 381	11 - 13	415 - 785	14 - 19	505	30	0.27

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- 1400 - Steel, louvered ceiling diffuser
- 51400 - Aluminum, louvered ceiling diffuser ¹
- M1400 - Steel, hard metric, louvered ceiling diffuser (lay-in T-bar only)
- M51400 - Aluminum, hard metric, louvered ceiling diffuser ¹ (lay-in T-bar only)

FEATURES

- 4 cones for optimum airflow control
- Cones feature a 1-piece stamped construction without mitered joints
- Round inlet for easy connection to round duct
- Anti-smudge design prevents smeared ceilings
- Two earthquake tabs are standard
- Great choice for variable air volume spaces

INLET SIZES

- Round: 6" - 14" (2" increments), 15"

FRAME STYLES

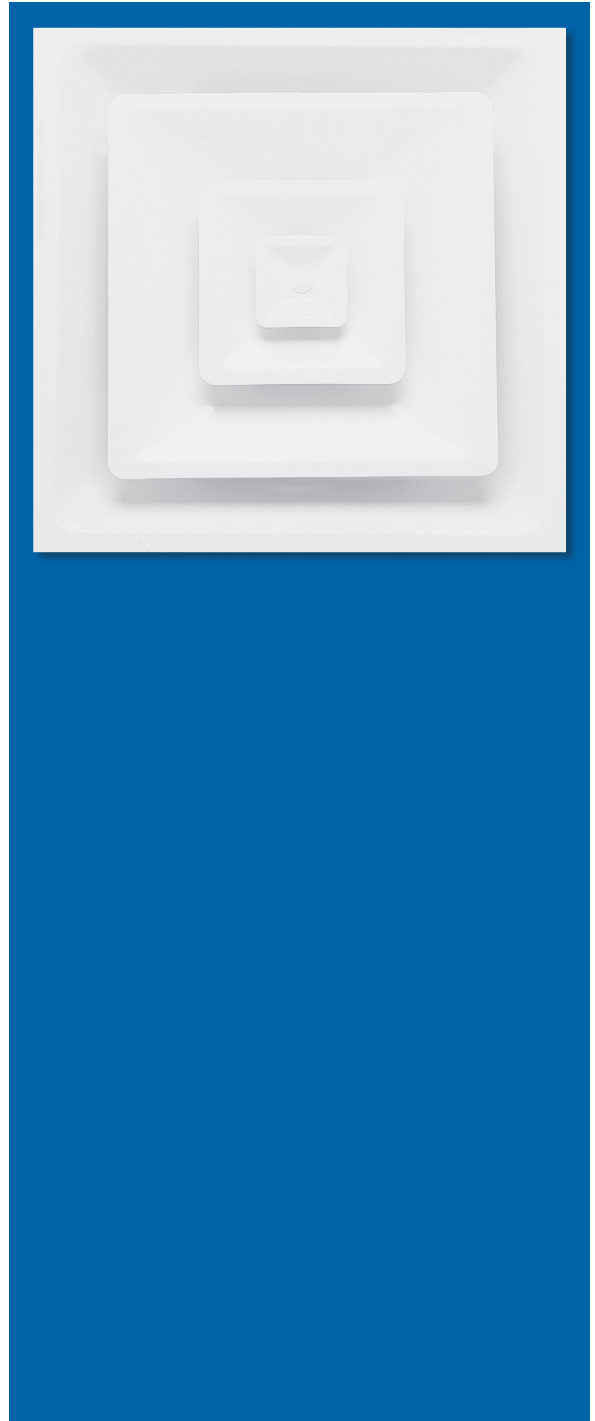
- F12 - 12" module in 24" F23 panel ²
- F22 - Surface mount ³
- F23 - Lay-in T-bar
- F27 - Spline
- F98 - Narrow-T

PANEL SIZES

- 12"x12", 24"x24", 48"x24" ⁴
- 300x300mm, 600x600mm, 1200x600mm ^{4 5}

COMPATIBLE OPTIONS AND ACCESSORIES

- Adjustable throw pattern
- IB - Insulated blanket (24"x24")
- R6 - Molded insulation (24"x24"), non-metric
- 1400SB - Steel, sectorizing baffle
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



NOTES:

- ¹ Safe for MRI use; F22 MRI safe mounting hardware by others.
- ² F12 and 12"x12" panel available with 6" and 8" inlet dimensions only.
- ³ F22 includes separate aluminum plaster frame shipped loose for field installation.
- ⁴ 48"x24" (1200x600mm) panel available in F23 only.
- ⁵ Only available with M1400 and M51400 models.

WEB SEARCH: 1400 or 51400

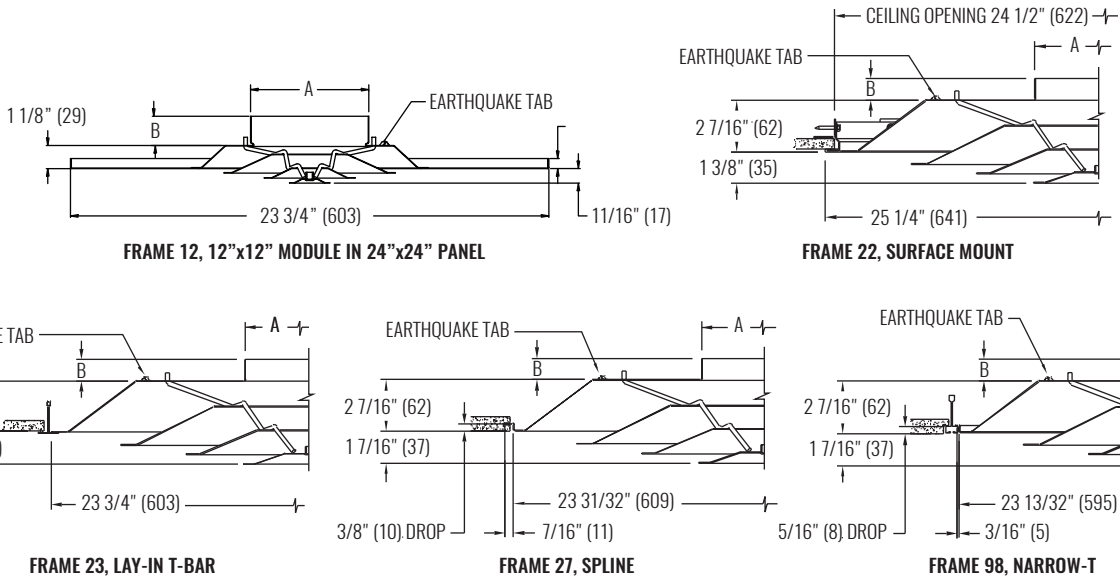


1400 / 51400 SERIES

Louvered Face Diffuser, 4 Cones



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. See table below for dimensional references.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	ACTUAL INLET SIZE	1400 & M1400	51400 & M51400
		CFM	THROW (ft)	CFM	THROW (ft)						
12"x12"	6"	39 - 150	4 - 11	157 - 220	12 - 14	160	16	0.25	5 7/8" (149)	1 1/4" (32)	1 1/2" (38)
	8"	70 - 250	6 - 15	279 - 370	16 - 18	260	20	0.20	7 7/8" (200)	1 1/4" (32)	1 1/2" (38)
24"x24"	6"	79 - 230	7 - 12	245 - 393	13 - 16	275	20	0.20	5 7/8" (149)	1 1/4" (32)	1 1/2" (38)
	8"	70 - 320	5 - 15	349 - 525	15 - 19	380	25	0.22	7 7/8" (200)	1 1/4" (32)	1 1/2" (38)
	10"	109 - 410	6 - 17	436 - 675	17 - 21	490	28	0.24	9 7/8" (251)	1 1/2" (38)	1 1/2" (38)
	12"	157 - 490	7 - 18	525 - 800	19 - 23	600	30	0.28	11 7/8" (302)	1 1/2" (38)	1 1/2" (38)
	14"	214 - 600	9 - 20	641 - 990	21 - 26	700	32	0.30	13 7/8" (352)	1 1/2" (38)	1 1/2" (38)
	15"	245 - 650	9 - 21	680 - 1060	21 - 27	800	34	0.30	14 7/8" (378)	1 1/2" (38)	1 1/2" (38)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI > 80% and are therefore not recommended.

MODEL

- 1400FR - Steel, fire rated, louvered ceiling diffuser

FEATURES

- 1400FR comes standard as a UL 263 classified assembly which incorporates a 3-hour rated fire damper and a 1/2" thick ceramic fiber blanket
- 4 cones for optimum airflow control
- Cones feature a 1-piece stamped construction without mitered joints
- Great choice for variable air volume spaces
- Round inlet for easy connection to round duct
- Anti-smudge design prevents smeared ceilings
- Two earthquake tabs are standard

INLET SIZES

- Round: 6" - 14" (2" increments), 15"

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZE

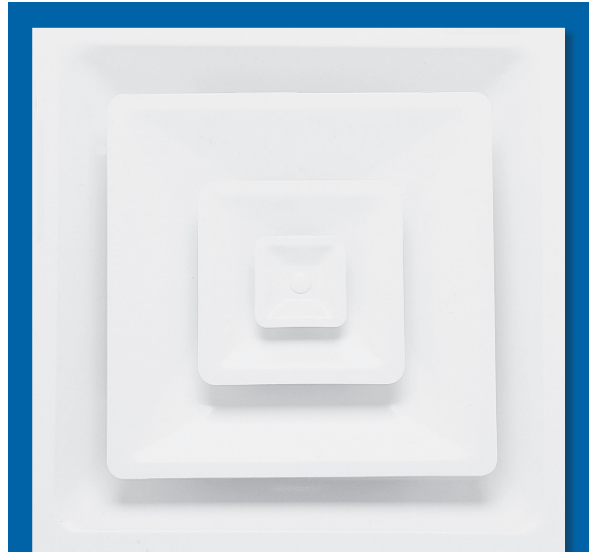
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES ¹

- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)

NOTE:

- ¹ Check allowance of options and accessories with local fire codes.

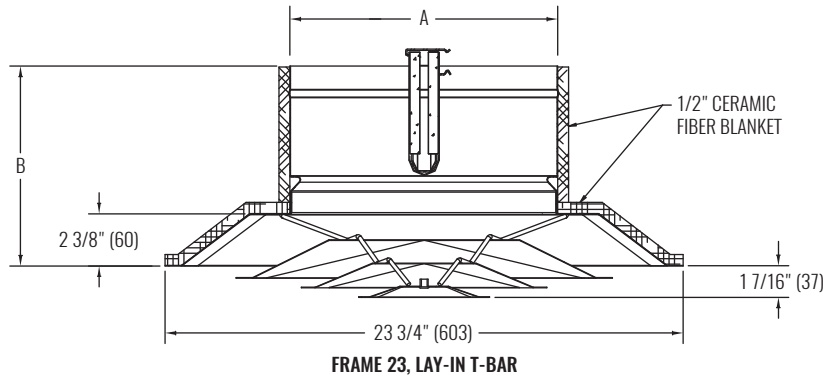


1400FR

Louvered Face Diffuser, 4 Cones, Fire Rated



DIMENSIONAL DATA



FRAME 23, LAY-IN T-BAR

NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS	
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	ACTUAL INLET	DEPTH
		CFM	THROW (ft)	CFM	THROW (ft)				A ¹	B
24"x24"	6"	79 - 230	7 - 12	245 - 393	13 - 16	275	20	0.20	5 7/8" (149)	10 1/16" (256)
	8"	70 - 320	5 - 15	349 - 525	15 - 19	380	25	0.22	7 7/8" (200)	9 15/16" (252)
	10"	109 - 410	6 - 17	436 - 675	17 - 21	490	28	0.24	9 7/8" (251)	10 7/16" (256)
	12"	157 - 490	7 - 18	525 - 800	19 - 23	600	30	0.28	11 7/8" (302)	12 7/16" (316)
	14"	214 - 600	9 - 20	641 - 990	21 - 26	700	32	0.30	13 7/8" (352)	12 7/16" (316)
	15"	245 - 650	9 - 21	680 - 1060	21 - 27	800	34	0.30	14 7/8" (378)	15 7/16" (392)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

¹ Dimensions exclude insulation.

MODELS

- 1450 - Steel, louvered ceiling diffuser
- 51450 - Aluminum, louvered ceiling diffuser ¹
- M1450 - Steel, hard metric ceiling diffuser
- M51450 - Aluminum, hard metric ceiling diffuser ¹

FEATURES

- 3 cones for optimum airflow control
- Great choice for variable air volume spaces
- Cones feature a 1-piece stamped construction without mitered joints
- Round inlet for easy connection to round duct
- Anti-smudge design prevents smeared ceilings
- Two earthquake tabs are standard

INLET SIZES

- Round: 6" - 14" (2" increments), 15"

FRAME STYLES

- F12 - 12" module in 24" F23 panel ²
- F22 - Surface mount ³
- F23 - Lay-in T-bar
- F27 - Spline
- F98 - Narrow-T

PANEL SIZES

- 12"x12", 20"x20", 24"x24", 48"x24" ⁴
- 300x300mm, 600x600mm, 1200x600mm ^{4 5}

COMPATIBLE OPTIONS AND ACCESSORIES

- Adjustable throw pattern
- IB - Insulated blanket (24"x24")
- R6 - Molded insulation (24"x24") , non-metric
- 1400SB - Steel, sectorizing baffle
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



NOTES:

- ¹ Safe for MRI use; F22 MRI safe mounting hardware by others.
- ² F12 and 12"x12" panel available with 6" and 8" inlet dimensions only.
- ³ F22 includes separate aluminum plaster frame shipped loose for field installation.
- ⁴ 20"x20" panel only available with 1450. 48"x24" (1200x600mm) panel available in F23 only.
- ⁵ Only available with M1450 and M51450 models.

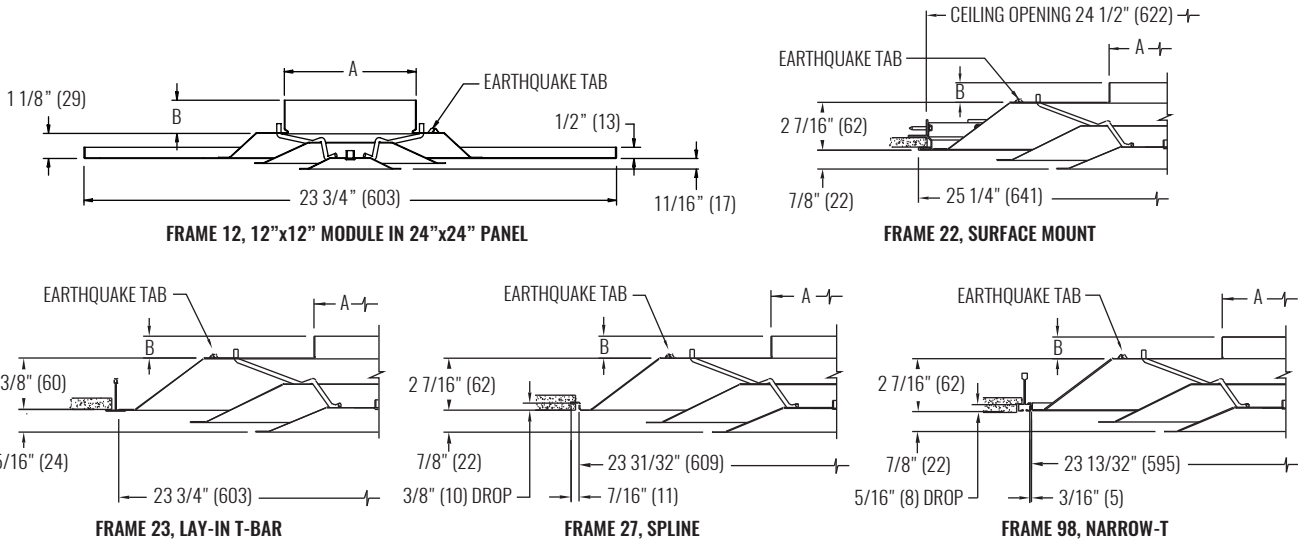
WEB SEARCH: 1450 or 51450

1450 / 51450 SERIES

Louvered Face Diffuser, 3 Cones



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. See table below for dimensional references.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN			DIMENSIONS		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	ACTUAL INLET SIZE	1450/M1450	51450/M51450
		CFM	THROW (ft)	CFM	THROW (ft)						
12"x12"	6"	29 - 170	4 - 12	180 - 245	13 - 15	225	16	0.18	5 7/8" (149)	1 1/4" (32)	1 1/2" (38)
	8"	70 - 209	6 - 14	225 - 314	14 - 17	250	20	0.20	7 7/8" (200)	1 1/4" (32)	1 1/2" (38)
24"x24"	6"	39 - 180	3 - 10	196 - 295	10 - 12	220	20	0.31	5 7/8" (149)	1 1/4" (32)	1 1/2" (38)
	8"	70 - 285	4 - 12	314 - 460	13 - 15	350	24	0.33	7 7/8" (200)	1 1/4" (32)	1 1/2" (38)
	10"	109 - 405	5 - 14	436 - 650	15 - 18	500	27	0.35	9 7/8" (251)	1 1/2" (38)	1 1/2" (38)
	12"	157 - 550	6 - 17	560 - 864	17 - 21	670	30	0.37	11 7/8" (302)	1 1/2" (38)	1 1/2" (38)
	14"	214 - 705	7 - 19	748 - 1069	19 - 23	850	36	0.40	13 7/8" (352)	1 1/2" (38)	1 1/2" (38)
	15"	245 - 785	7 - 20	820 - 1227	20 - 25	925	38	0.40	14 7/8" (378)	1 1/2" (38)	1 1/2" (38)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- SH - Steel, louvered ceiling diffuser
- 5SH - Aluminum, louvered ceiling diffuser
- MSH - Steel, metric louvered ceiling diffuser

FEATURES

- Core is removable from face of diffuser
- Square or rectangular duct connections
- Maintains a horizontal discharge air pattern from maximum to minimum CFM
- Lever operator on optional OBDFA damper allows easy volume adjustment from face of diffuser
- Various discharge air patterns available
- Excellent choice for VAV applications with high loads

INLET SIZES

- Square: 6"x6" - 48"x48" (3" increments)

FRAME STYLES

- F21 - Surface mount, beveled
- F22 - Surface mount, flat
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F27 - Spline
- F98 - 5/16" step down

PANEL SIZES

- 12"x12", 24"x24", and 48"x24"
- 600x600mm

COMPATIBLE OPTIONS AND ACCESSORIES

- Ultrathrow (throw reducing device)
- OBDFA - Steel, square or rectangular face operated damper
- 5OBDFA - Aluminum square or rectangular face operated damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SRNA and SRNA2 - Steel, square to round adapters
- SRAC325 - Steel, square to round adapter
- SSG - Steel, square or rectangular straightening grid

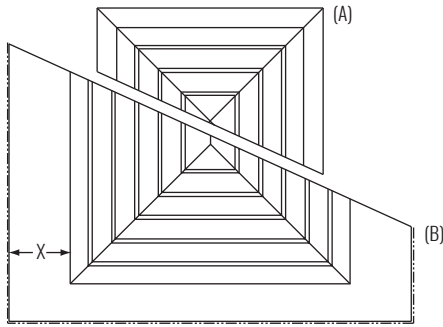


SH / 5SH SERIES

Louvered Face Diffuser, Flush Face

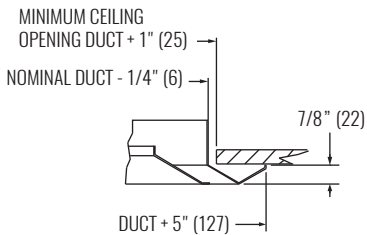


DIMENSIONAL DATA

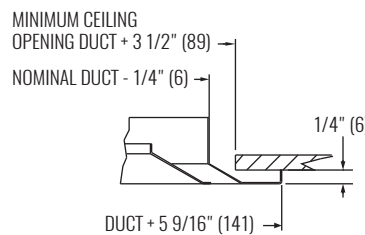


FRAME STYLE DIFFERENCES
A = SURFACE MOUNT, B = LAY-IN T-BAR

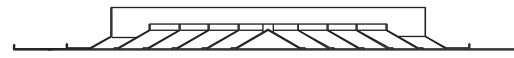
DIMENSIONS - AVAILABLE INLET SIZES			
PANEL	FRAME STYLE	MIN INLET (DIM1 x DIM2)	MAX INLET (DIM1 x DIM2)
NO PANEL	21, 22	6"x6" (152x152)	48"x48" (1219x1219)
12"x12"	23, 24, 27	6"x6" (152x152)	9"x9" (229x229) ¹
24"x24"	23, 24, 27	6"x6" (152x152)	21"x21" (533x533) ¹
	98	6"x6" (152x152)	18"x18" (457x457)
48"x24"	23, 24, 27	12"x12" (610x610)	21"x42" (533x1067) 5SH ¹
			21"x45" (533x1143) SH ¹



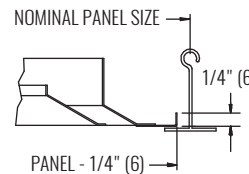
FRAME 21, SURFACE MOUNT, BEVELED



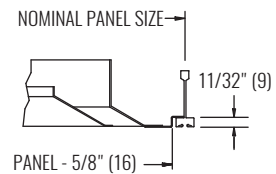
FRAME 22, SURFACE MOUNT, FLAT



CROSS SECTION, FRAME 23



FRAME 23, LAY-IN T-BAR



FRAME 98, NARROW-T

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. Dimension 'X' will vary with inlet sizes for Frames 23, 24, 27, and 98.

¹ Available in 4-way discharge air pattern only.

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE - HORIZONTAL THROW				DESIGN		
	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
NOMINAL INLET	CFM	THROW (ft)	CFM	THROW (ft)			
6"x6"	50 - 180	7 - 12	200 - 325	13 - 17	225	19	0.30
9"x9"	113 - 365	10 - 18	385 - 675	18 - 24	450	27	0.30
12"x12"	200 - 600	13 - 23	640 - 1100	23 - 31	750	35	0.30
15"x15"	313 - 905	16 - 28	938 - 1563	28 - 37	1125	43	0.33
18"x18"	450 - 1245	20 - 33	1350 - 2250	34 - 44	1600	52	0.35
21"x21"	613 - 1630	23 - 37	1700 - 2756	38 - 49	2000	58	0.38
24"x24"	800 - 2060	26 - 42	2150 - 3600	43 - 56	2600	66	0.40

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI > 80% and are therefore not recommended.

MODELS

- SHFR - Steel, fire rated, louvered ceiling diffuser

FEATURES

- Core is removable from face of diffuser
- Square or rectangular duct connections
- Maintains a horizontal discharge air pattern from maximum to minimum CFM
- Lever operator on optional OBDFA damper allows easy volume adjustment from face of diffuser
- Various discharge air patterns available
- Excellent choice for VAV applications with high loads
- SHFR comes standard as a UL 263 classified assembly that incorporates a three hour rated fire damper and a 1/2" thick ceramic fiber blanket

INLET SIZES

- Square: 6"x6" - 18"x18" (3" increments)

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES ¹

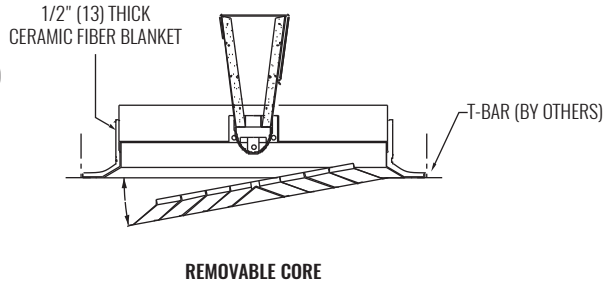
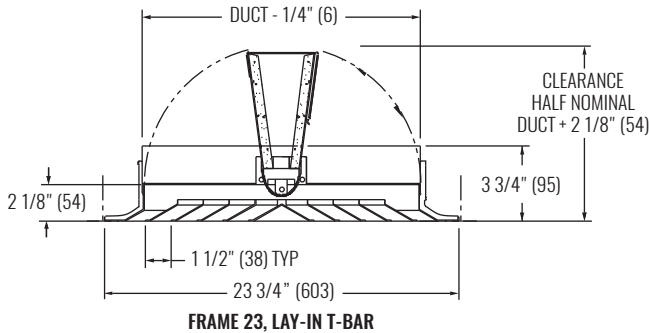
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)

NOTES:

- ¹ Check allowance of options and accessories with local fire codes.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"x6"	50 - 180	7 - 12	200 - 325	13 - 17	225	19	0.30
	9"x9"	113 - 365	10 - 18	385 - 675	18 - 24	450	27	0.30
	12"x12"	200 - 600	13 - 23	640 - 1100	23 - 31	750	35	0.30
	15"x15"	313 - 905	16 - 28	938 - 1563	28 - 37	1125	43	0.33
	18"x18"	450 - 1245	20 - 33	1350 - 2250	34 - 44	1600	52	0.35

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- SHFB - Steel, louvered ceiling diffuser with square inlet and fiberglass backpan
- 5SHFB - Aluminum, louvered ceiling diffuser with square inlet and fiberglass backpan

FEATURES

- Pre-scored fiberglass backpan for round spin-in collar (collars 6" to 16" provided by others)
- Core is removable from face of diffuser
- Maintains a horizontal discharge air pattern from maximum to minimum CFM
- Excellent choice for VAV applications with high loads

INLET SIZES

- Square: 15"x15"

FRAME STYLES

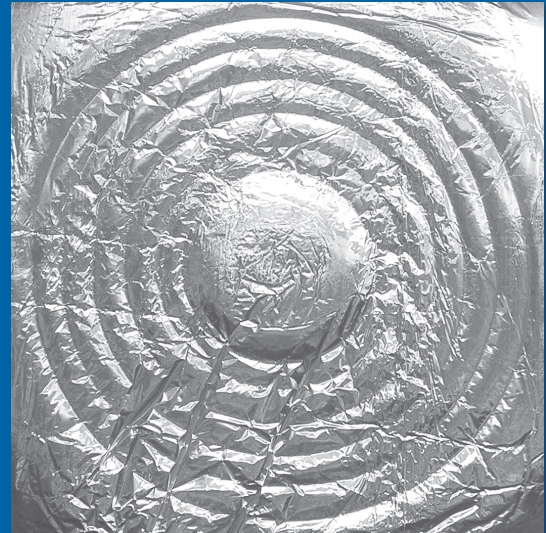
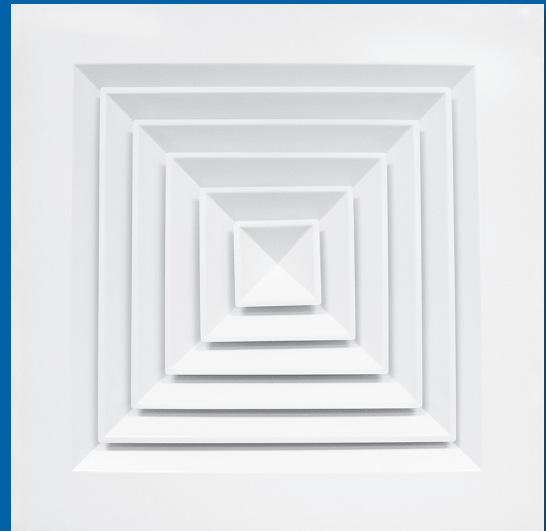
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



SCORED BACKPAN

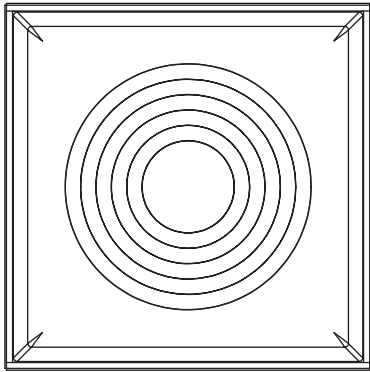


SHFB / 5SHFB

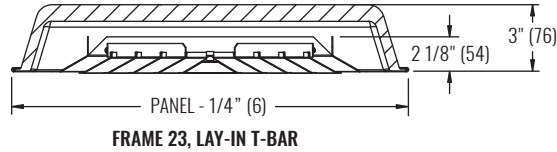
Louvered Face Diffuser, Flush Face, Pre-scored Fiberglass Backpan



DIMENSIONAL DATA



SCORING OF THE BACKPAN IDENTIFIES ROUND DUCT SIZES FROM 6" (152) TO 16" (406) TO FACILITATE FIELD CUTTING



DIFFUSERS | LOUVERED FACE

SHFB / 5SHFB

NOTES: Dimensions in parentheses are millimeters (mm). Scoring of the backpan identifies round duct sizes from 6" (152) to 16" (406) to facilitate field cutting. After field cutting inlet, remove shipping pins located on the back side of the core to make core removable.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"	78 - 190	6 - 14	196 - 314	14 - 23	235	20	0.40
	8"	140 - 326	8 - 18	349 - 558	19 - 30	400	26	0.40
	10"	218 - 491	9 - 22	527 - 872	23 - 38	600	32	0.40
	12"	314 - 680	11 - 25	733 - 1256	26 - 45	800	37	0.40
	14"	427 - 926	13 - 28	997 - 1602	31 - 50	1100	43	0.40
	16"	558 - 1163	15 - 31	1255 - 2046	34 - 55	1450	49	0.40

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- SHV - Steel, louvered ceiling diffuser with square or rectangular inlet, core deflectors, and mixing vanes
- 5SHV - Aluminum, louvered ceiling diffuser with square or rectangular inlet, core deflectors, and mixing vanes ¹

FEATURES

- Core is removable from face of diffuser
- Horizontal lip (1/4") on all sides of the louvered core to provide a horizontal discharge air pattern tight to the ceiling
- Square or rectangular duct connections available
- Maintains horizontal discharge air pattern from maximum to minimum CFM
- Various discharge air patterns available
- Excellent choice for VAV applications with high mixing rate requirements
- Mixing vanes

INLET SIZES

- Square: 6"x6" - 48"x48" (3" increments) ²

FRAME STYLES

- F21 - Surface mount, beveled
- F22 - Surface mount, flat
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F27 - Spline
- F98 - 5/16" step down

PANEL SIZES

- 12"x12", 24"x24", or 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBDSHV - Duct mounted damper
- OBDSHV - Steel, square or rectangular face operated damper for sh series (duct mount)
- SRNA - Steel, square to round adapter for SH Series
- SRNA2 - Steel, square to round adapter for SH Series
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

¹ Maximum inlet size for Model 5SHV is 36"x36".



MIXING VANES ON BACK OF CORE

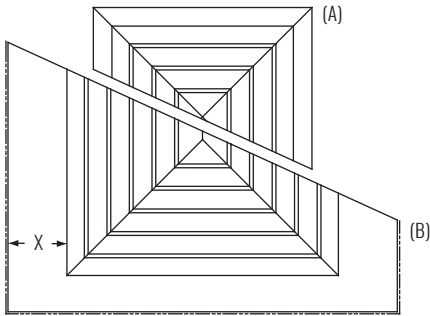


SHV / 5SHV

Louvered Face Diffuser, Flush Face, Mixing Vanes

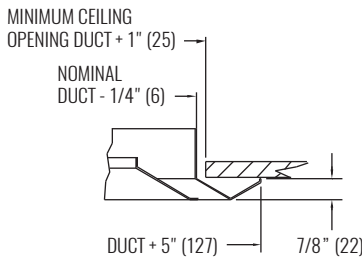


DIMENSIONAL DATA

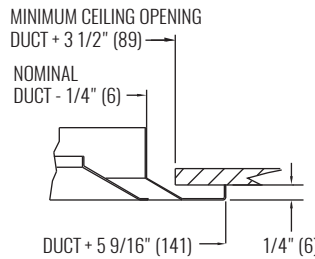


FRAME STYLE DIFFERENCES
A = SURFACE MOUNT, B = LAY-IN T-BAR

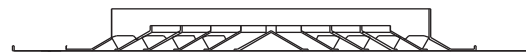
DIMENSIONS			
PANEL	FRAME STYLE	MIN INLET (DIM1 x DIM2)	MAX INLET (DIM1 x DIM2)
NO PANEL	21, 22	6"x6" (152x152)	48"x48" (1219x1219) SHV ¹ 36"x36" (914x914) 5SHV ²
12"x12"	23, 24, 27	6"x6" (152x152)	6"x6" (152x152)
24"x24"	23, 24, 27, 98	6"x6" (152x152)	18"x18" (457x457)
48"x24"	23	12"x12" (305x305)	42"x18" (1067x457)



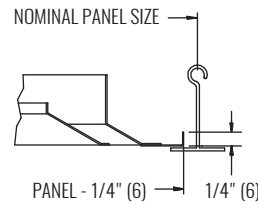
FRAME 21, SURFACE MOUNT, BEVELED



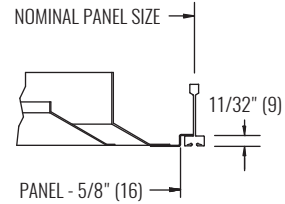
FRAME 22, SURFACE MOUNT, FLAT



CROSS SECTION, FRAME 23



FRAME 23, LAY-IN T-BAR



FRAME 98, NARROW-T

NOTE: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. Dimension 'X' will vary with inlet sizes for Frames 23, 24, 27, and 98. Core removal is the same as the SH series of diffusers.

- ¹ Available in 4-way discharge air pattern only.
- ² Available to model SHV only.

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE - HORIZONTAL THROW				DESIGN		
	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
NOMINAL INLET	CFM	THROW (ft)	CFM	THROW (ft)			
6"x6"	50 - 120	7 - 10	130 - 220	11 - 14	175	17	0.30
9"x9"	85 - 245	8 - 15	265 - 450	15 - 20	330	23	0.30
12"x12"	150 - 415	10 - 19	440 - 740	19 - 25	500	29	0.30
15"x15"	220 - 615	12 - 23	625 - 1095	23 - 31	800	37	0.30
18"x18"	305 - 850	14 - 27	900 - 1510	28 - 36	1200	45	0.31
21"x21"	440 - 1110	17 - 31	1225 - 1838	32 - 46	1500	50	0.32
24"x24"	590 - 1405	20 - 35	1465 - 2495	36 - 46	1850	56	0.33

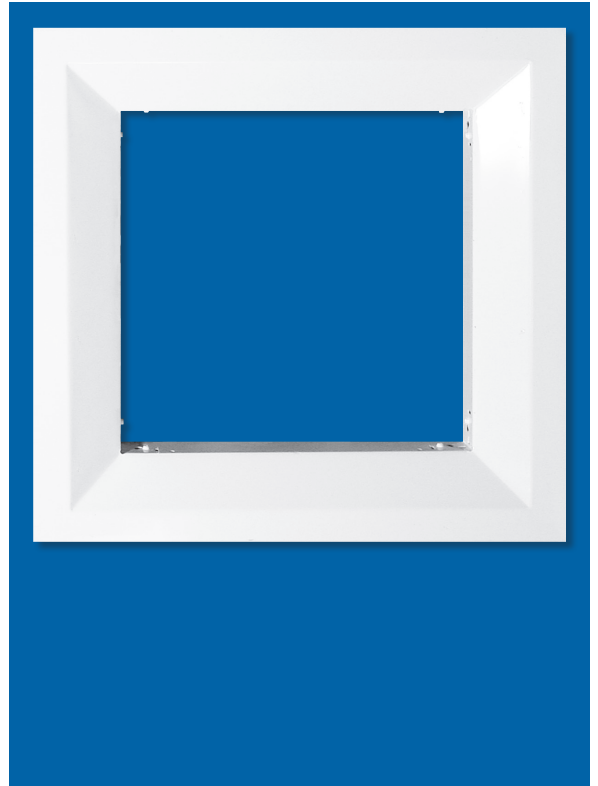
NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- SHF - Steel frame
- 5SHF - Aluminum frame

FEATURES

- Allows for frame replacements on the SH/5SH and SHR/5SHR series diffusers
- Excellent choice for office layouts that have changing tenant requirements

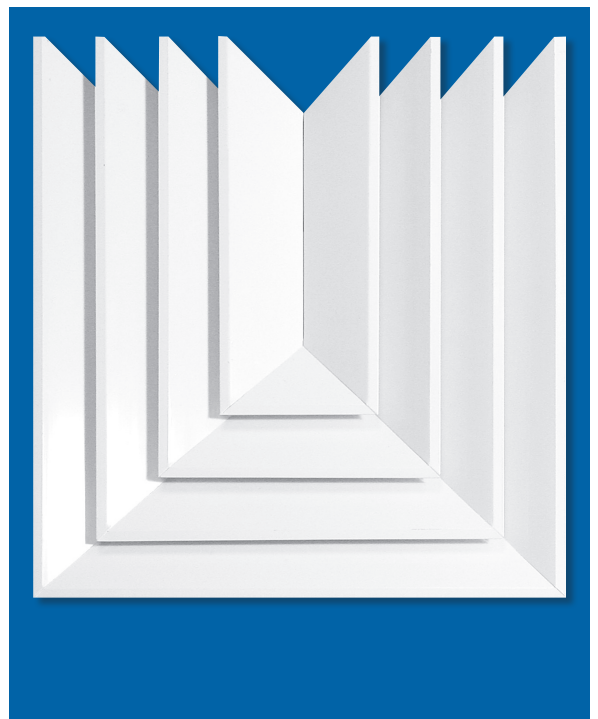
**WEB SEARCH: SHF or 5SHF****MODELS**

- SHC - Steel core
- 5SHC - Aluminum core

FEATURES

- Allows for core replacements on the SH/5SH, SHV/5SHV, SHR/5SHR, SHPC/5SHPC, and SHPCR/5SHPCR series diffusers
- Excellent choice for office layouts that have changing tenant requirements

NOTE: For (5)SHV core, contact Krueger.

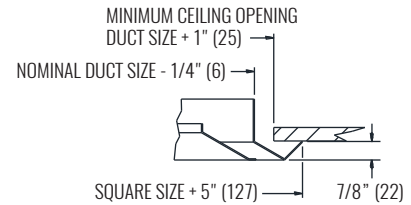
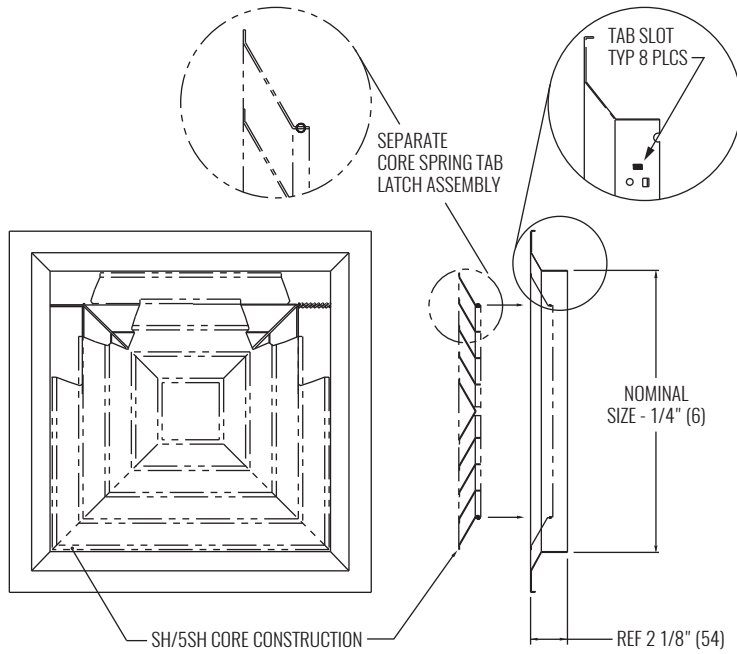
**WEB SEARCH: SHC or 5SHC**

SHF / SHC SERIES

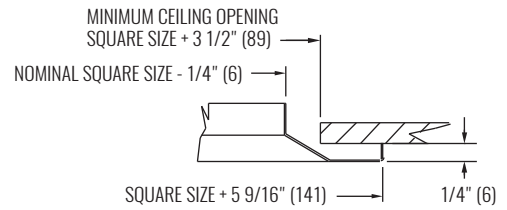
Frames and Cores



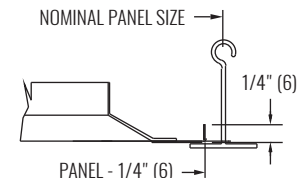
DIMENSIONAL DATA



FRAME 22, SURFACE MOUNT, BEVELED



FRAME 22, SURFACE MOUNT, FLAT



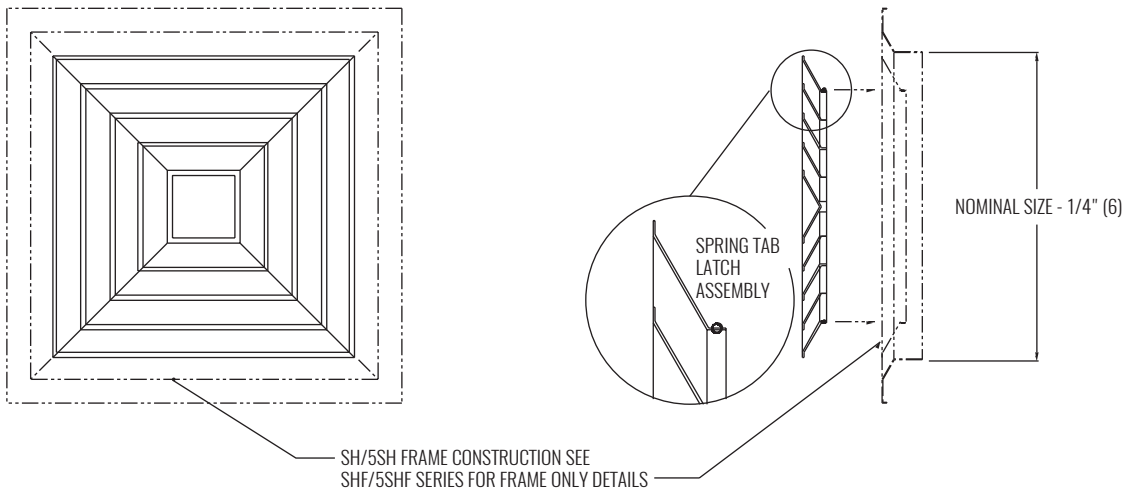
FRAME 23, LAY-IN T-BAR

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. Replacements are limited by existing core size.

DIFFUSERS | LOUVERED FACE

SHF / SHC

DIMENSIONAL DATA (MODEL SHC)



NOTES: Dimensions in parentheses are millimeters (mm). Replacements are limited by existing core size.

MODELS

- SHPC - Steel, louvered ceiling diffuser with square or rectangular inlet and pattern controllers
- 5SHPC - Aluminum, louvered ceiling diffuser with square or rectangular inlet and pattern controllers

FEATURES

- Square duct connections
- Adjustable pattern controllers for vertical throw
- Core is removable from face of diffuser
- Maintains a horizontal discharge air pattern from maximum to minimum CFM
- Excellent choice for VAV applications with high loads
- Excellent choice for high ceiling applications

INLET SIZES

- Square: 6"x6" - 21"x21" (3" increments)

FRAME STYLES

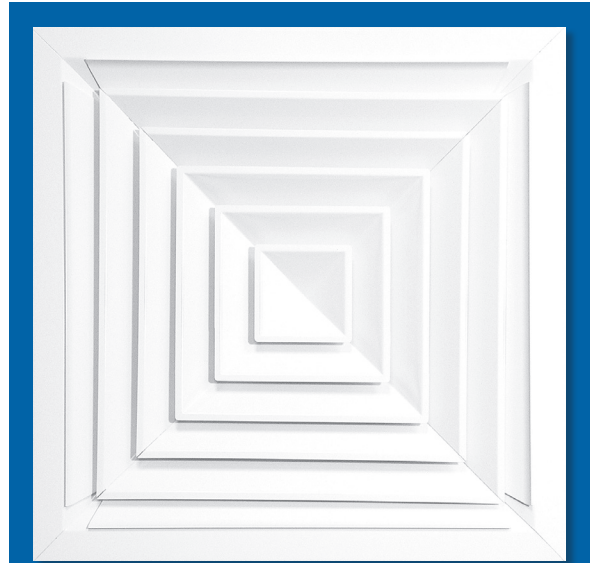
- F21 - Surface mount, beveled
- F22 - Surface mount, flat
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F27 - Spline
- F98 - 5/16" step down

PANEL SIZES

- 12"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

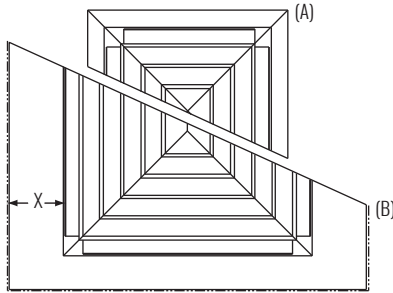
- OBDFDA - Steel, square or rectangular face operated damper for SH Series
- 5OBDFDA - Aluminum, square or rectangular face operated damper for SH Series
- SRNA - Steel, square to round adapter for SH Series
- SRNA2 - Steel, square to round adapter for SH Series
- SSG - Steel, square or rectangular straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



ZOOMED VIEW OF PATTERN CONTROLLERS

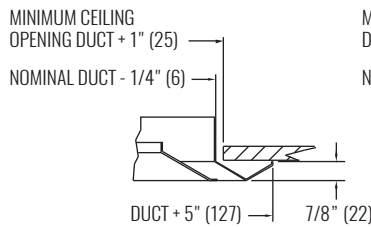


DIMENSIONAL DATA

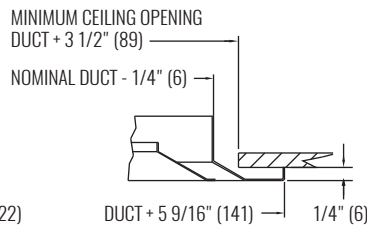


FRAME STYLE DIFFERENCES
A = SURFACE MOUNT, B = LAY-IN T-BAR

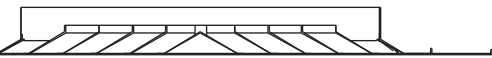
DIMENSIONS			
PANEL	FRAME STYLE	MIN INLET (DIM1 x DIM2)	MAX INLET (DIM1 x DIM2)
NO PANEL	21, 22	06"x06" (152x152)	21"x21" (533x533)
12"x12"	23, 24, 27	06"x06" (152x152)	06"x06" (152x152)
24"x24"	23, 24, 27, 98	06"x06" (152x152)	18"x18" (457x457)
48"x24"	23, 24, 27	12"x12" (305x305)	18"x18" (457x457)



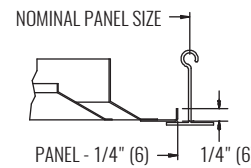
FRAME 21, SURFACE MOUNT, BEVELED



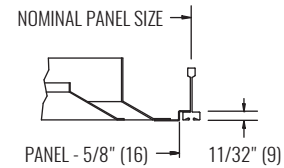
FRAME 22, SURFACE MOUNT, FLAT



CROSS SECTION, FRAME 23



FRAME 23, LAY-IN T-BAR



FRAME 98, NARROW-T

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. Dimension 'X' will vary with inlet sizes for Frames 23, 24, 27, and 98. Core removal is the same as the SH series of diffusers.

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE				DESIGN		
	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
NOMINAL INLET	CFM	THROW (ft)	CFM	THROW (ft)			
HORIZONTAL THROW							
6"x6"	100 - 138	9 - 12	150 - 250	12 - 15	200	18	0.42
9"x9"	225 - 325	14 - 17	350 - 580	17 - 22	420	25	0.41
12"x12"	400 - 540	19 - 22	575 - 1000	22 - 29	680	30	0.40
15"x15"	469 - 781	20 - 26	850 - 1400	27 - 35	1000	38	0.39
18"x18"	675 - 1100	24 - 31	1125 - 2025	31 - 42	1350	44	0.38
21"x21"	919 - 1430	28 - 35	1531 - 2580	36 - 47	1780	50	0.35
VERTICAL THROW							
6"x6"	100 - 125	9 - 12	150 - 250	12 - 15	N/A	N/A	N/A
9"x9"	225 - 281	14 - 16	304 - 495	16 - 21	N/A	N/A	N/A
12"x12"	400 - 467	19 - 20	500 - 800	21 - 27	N/A	N/A	N/A
15"x15"	469 - 677	20 - 25	729 - 1250	25 - 33	N/A	N/A	N/A
18"x18"	675 - 938	24 - 29	1013 - 1575	30 - 37	N/A	N/A	N/A
21"x21"	919 - 1225	29 - 33	1327 - 2144	34 - 44	N/A	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- SHPCR - Steel, louvered ceiling diffuser with round inlet and pattern controllers
- 5SHPCR - Aluminum, louvered ceiling diffuser with round inlet and pattern controllers

FEATURES

- Round duct connections
- Adjustable pattern controllers for vertical throw
- Core is removable from face of diffuser
- Maintains a horizontal discharge air pattern from maximum to minimum CFM
- Excellent choice for VAV applications with high loads
- Excellent choice for high ceiling applications

INLET SIZES

- Round: 6" - 16" (2" increments)
- Square: 6"x6" - 18"x18" (3" increments)

FRAME STYLES

- F21 - Surface mount, beveled
- F22 - Surface mount, flat
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F27 - Spline
- F98 - 5/16" step down

PANEL SIZES

- 12"x12"
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

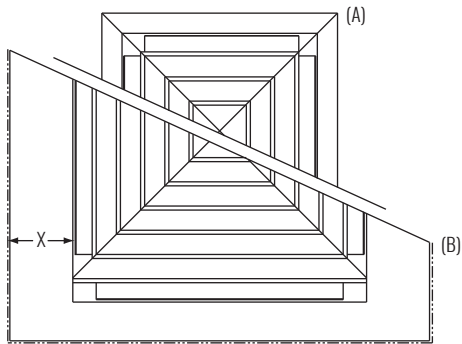
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



ZOOMED VIEW OF PATTERN CONTROLLERS

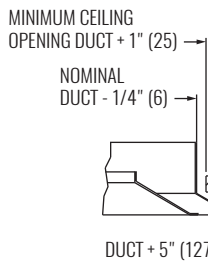


DIMENSIONAL DATA

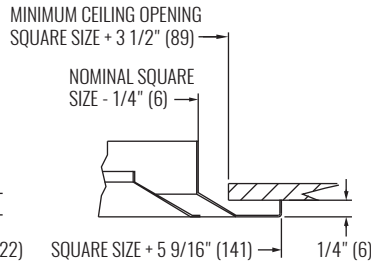


FRAME STYLE DIFFERENCES
A = SURFACE MOUNT, B = LAY-IN T-BAR

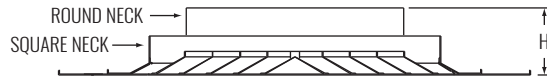
DIMENSIONS - AVAILABLE INLET SIZES			
PANEL	ROUND INLET	NOMINAL SQUARE	HEIGHT (H)
12" x 12"	6"	6"	3 1/8" (79)
24" x 24"	6"	6", 9", 12", 15", 18"	3 1/8" (79)
	8"	9", 12", 15", 18"	3 3/8" (86)
	10"	12", 15", 18"	3 3/8" (86)
	12"	12", 15", 18"	3 3/8" (86)
	14"	15", 18"	3 3/8" (86)
	16"	18"	3 3/8" (86)



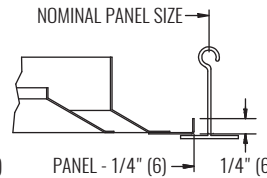
FRAME 21, SURFACE MOUNT, BEVELED



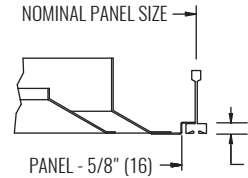
FRAME 22, SURFACE MOUNT, FLAT



CROSS SECTION, FRAME 23



FRAME 23, LAY-IN T-BAR



FRAME 98, NARROW-T

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. Dimension 'X' will vary with inlet sizes for Frames 23, 24, 27, and 98.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN		
NOMINAL ROUND INLET	NOMINAL SQUARE INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HORIZONTAL THROW								
6"	6"x6"	78 - 170	6 - 12	183 - 295	13 - 22	210	16	0.35
8"	9"x9"	140 - 291	8 - 16	314 - 488	17 - 26	370	20	0.36
12"	12"x12"	314 - 696	11 - 26	706 - 1099	26 - 40	750	26	0.38
8"	18"x18"	140 - 291	8 - 16	314 - 523	17 - 28	320	20	0.35
12"	18"x18"	314 - 608	11 - 22	628 - 1099	23 - 40	770	28	0.40
16"	18"x18"	558 - 1046	15 - 28	1116 - 1814	30 - 49	1300	34	0.40
VERTICAL THROW								
6"	6"x6"	78 - 147	7 - 14	157 - 255	15 - 24	N/A	N/A	N/A
8"	9"x9"	140 - 253	10 - 18	279 - 453	20 - 32	N/A	N/A	N/A
12"	12"x12"	314 - 530	15 - 25	569 - 942	26 - 44	N/A	N/A	N/A
8"	18"x18"	140 - 253	10 - 18	270 - 453	19 - 32	N/A	N/A	N/A
12"	18"x18"	314 - 530	15 - 25	569 - 942	26 - 44	N/A	N/A	N/A
16"	18"x18"	558 - 907	20 - 32	977 - 1535	34 - 54	N/A	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- SHR - Steel, louvered ceiling diffuser
- 5SHR - Aluminum, louvered ceiling diffuser

FEATURES

- Core is removable from face of diffuser
- Maintains a horizontal discharge air pattern from maximum to minimum CFM
- Excellent choice for VAV applications with high loads

INLET SIZES

- Round: 6" - 16" (2" increments)
- Square: 6"x6" - 18"x18" (3" increments)

FRAME STYLES

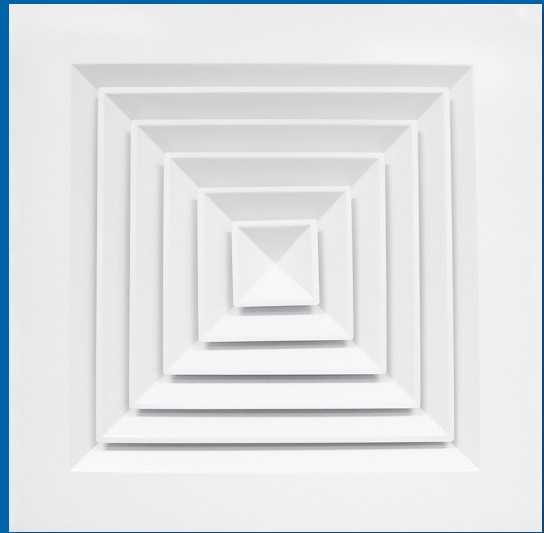
- F21 - Surface mount, beveled
- F22 - Surface mount, flat
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F27 - Spline
- F98 - 5/16" step down

PANEL SIZES

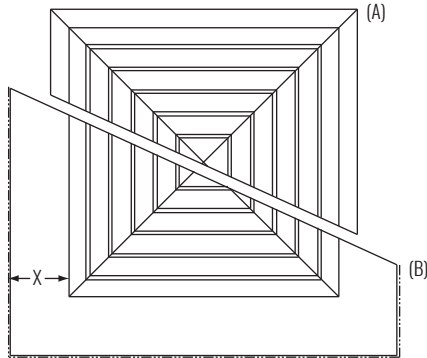
- 12"x12"
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



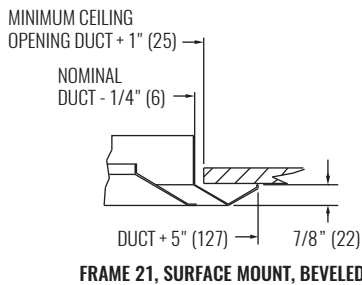
DIMENSIONAL DATA



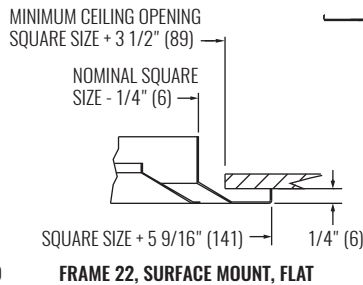
FRAME STYLE DIFFERENCES
A = SURFACE MOUNT, B = LAY-IN T-BAR

DIMENSIONS - AVAILABLE INLET SIZES			
PANEL SIZE	NOMINAL SQUARE	NOMINAL ROUND	HEIGHT (H)
12"x12"	6", (9" ¹)	6"	3 1/8" (79)
	9" ¹	8"	3 3/8" (86)
24"x24"	6", 9", 12", 15", 18"	6"	3 1/8" (79)
	9", 12", 15", 18"	8"	3 3/8" (86)
	12", 15", 18"	10"	3 3/8" (86)
	12", 15", 18"	12"	3 3/8" (86)
	15", 18"	14"	3 3/8" (86)
	18"	16"	3 3/8" (86)

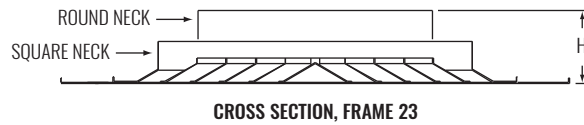
NOTE: ¹ Available in 4-way discharge air pattern only.



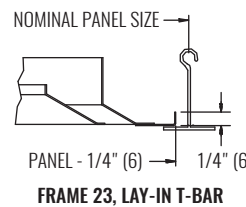
FRAME 21, SURFACE MOUNT, BEVELED



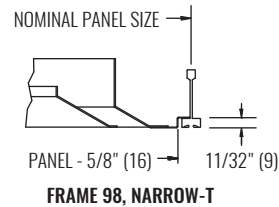
FRAME 22, SURFACE MOUNT, FLAT



CROSS SECTION, FRAME 23



FRAME 23, LAY-IN T-BAR



FRAME 98, NARROW-T

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. Dimension 'X' will vary with inlet sizes for Frames 23, 24, 27, and 98.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
NOMINAL SQUARE INLET	NOMINAL ROUND INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
6"x6"	6"	78 - 190	6 - 14	196 - 314	14 - 23	235	20	0.21
9"x9"	8"	140 - 326	8 - 18	349 - 558	19 - 30	380	24	0.22
12"x12"	10"	218 - 491	9 - 21	527 - 763	23 - 33	600	28	0.24
12"x12"	12"	314 - 680	11 - 25	706 - 1099	26 - 40	750	34	0.25
15"x15"	14"	427 - 926	13 - 29	961 - 1495	30 - 46	1100	38	0.28
18"x18"	6"	78 - 190	6 - 14	196 - 275	14 - 20	235	18	0.30
18"x18"	8"	140 - 326	8 - 18	349 - 523	19 - 28	400	22	0.36
18"x18"	10"	218 - 491	9 - 21	545 - 763	24 - 33	600	26	0.40
18"x18"	12"	314 - 680	11 - 25	706 - 1099	26 - 40	900	30	0.42
18"x18"	14"	427 - 925	13 - 29	961 - 1495	30 - 46	1100	36	0.45
18"x18"	16"	558 - 1116	15 - 30	1256 - 1953	34 - 53	1500	40	0.50

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- SHRV - Steel, louvered ceiling diffuser with round inlet, core deflectors, and mixing vanes
- 5SHRV - Aluminum, louvered ceiling diffuser with round inlet, core deflectors, and mixing vanes

FEATURES

- Core is removable from face of diffuser
- Horizontal lip (1/4") on all sides of the louvered core to provide a horizontal discharge air pattern tight to the ceiling
- Various discharge air patterns available
- Maintains horizontal discharge air pattern from maximum to minimum CFM
- Excellent choice for VAV applications with high mixing rate requirements
- Mixing vanes

INLET SIZES

- Round: 6" - 16" (2" increments)
- Square: 6"x6" - 18"x18" (3" increments)

FRAME STYLES

- F21 - Surface mount, beveled
- F22 - Surface mount, flat
- F23 - Lay-in T-bar
- F24 - Snap-in T-bar
- F27 - Spline
- F98 - 5/16" step down

PANEL SIZES

- 12"x12"
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



MIXING VANES ON BACK OF CORE

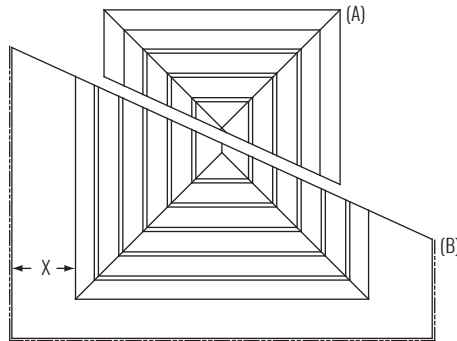


SHRV / 5SHRV



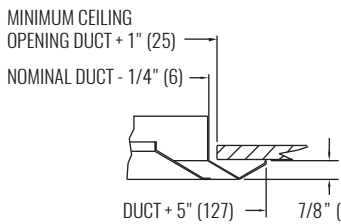
Louvered Face Diffuser, Flush Face, Core Deflectors, Mixing Vanes, Round Inlet

DIMENSIONAL DATA

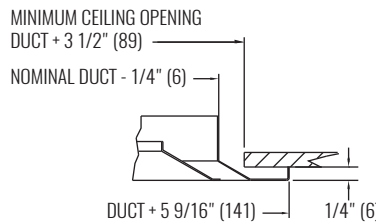


FRAME STYLE DIFFERENCES
A = SURFACE MOUNT, B = LAY-IN T-BAR

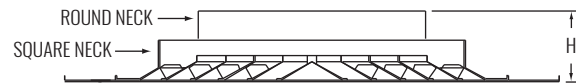
DIMENSIONS - AVAILABLE INLET SIZES			
PANEL SIZE	NOMINAL SQUARE	ROUND INLET	HEIGHT (H)
12"x12"	6"	6"	3 1/8" (79)
24"x24"	6", 9", 12", 15", 18"	6"	3 1/8" (79)
	9", 12", 15", 18"	8"	3 3/8" (86)
	12", 15", 18"	10"	3 3/8" (86)
	12", 15", 18"	12"	3 3/8" (86)
	15", 18"	14"	3 3/8" (86)
	18"	16"	3 3/8" (86)



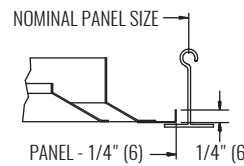
FRAME 21, SURFACE MOUNT, BEVELED



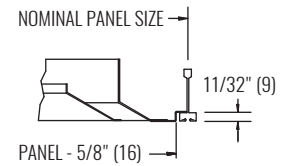
FRAME 22, SURFACE MOUNT, FLAT



CROSS SECTION, FRAME 23



FRAME 23, LAY-IN T-BAR



FRAME 98, NARROW-T

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for a 24"x24" panel. Core removal is the same as the SH series of diffusers. Dimension 'X' will vary with inlet sizes for Frames 23, 24, 27, and 98.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
NOMINAL SQUARE INLET	NOMINAL ROUND INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
6"x6"	6"	78 - 138	4 - 8	147 - 235	8 - 13	175	18	0.40
9"x9"	8"	140 - 235	6 - 10	253 - 419	10 - 17	290	22	0.45
12"x12"	10"	218 - 354	7 - 12	382 - 610	13 - 20	430	25	0.50
12"x12"	12"	314 - 490	9 - 14	530 - 863	15 - 24	600	30	0.52
15"x15"	14"	427 - 668	10 - 16	721 - 1154	17 - 27	850	36	0.55
18"x18"	6"	78 - 138	4 - 8	147 - 235	8 - 13	180	18	0.40
18"x18"	8"	140 - 235	6 - 10	253 - 419	10 - 17	280	22	0.45
18"x18"	10"	218 - 354	7 - 12	382 - 610	13 - 20	440	26	0.50
18"x18"	12"	314 - 491	9 - 14	530 - 864	15 - 24	600	30	0.52
18"x18"	14"	427 - 668	10 - 16	721 - 1154	17 - 27	820	36	0.55
18"x18"	16"	558 - 837	11 - 17	907 - 1450	19 - 29	1000	38	0.60

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI > 80% and are therefore not recommended.

MODELS

- 5SHCAD - Aluminum, cold-aisle ceiling diffuser with square inlet

FEATURES

- Center volume controlled downblow section
- Adjustable pattern controllers for additional vertical throw
- Square duct connections
- Core is removable from face of diffuser
- Maintains a horizontal discharge air pattern from maximum to minimum CFM
- Excellent choice for cold-aisle applications (ex: supermarkets)

INLET SIZES

- Square: 15"x15", 18"x18"

FRAME STYLES

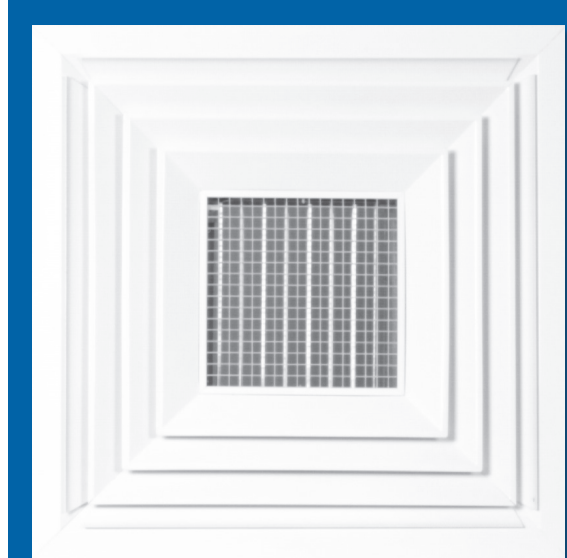
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBDFDA - Steel, square or rectangular face operated damper
- 5OBDFDA - Aluminum, square or rectangular face operated damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

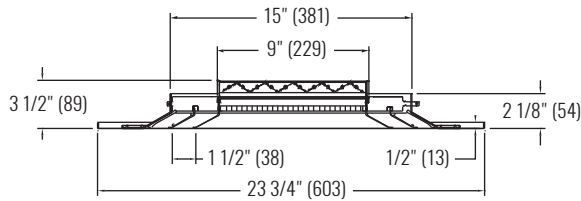


5SHCAD

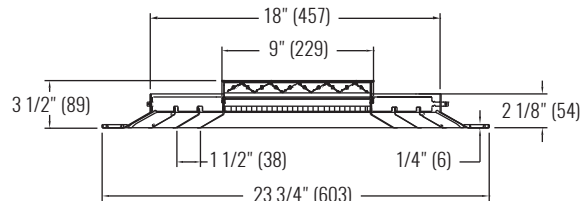
Louvered Face Diffuser, Flush Face, Center Downblow



DIMENSIONAL DATA



FRAME 23, LAY-IN T-BAR, 15"x15" NECK



FRAME 23, LAY-IN T-BAR, 18"x18" NECK

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE		PERFORMANCE			
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)	
		CFM	THROW (ft)	CFM	THROW (ft)
HORIZONTAL THROW					
24"x24"	15"x15"	313 - 1250	7 - 17	1285 - 1563	18 - 19
	18"x18"	450 - 1760	8 - 21	1800 - 2250	21 - 23
VERTICAL THROW					
24"x24"	15"x15"	313 - 1025	15 - 28	1094 - 1250	28 - 30
	18"x18"	450 - 1450	18 - 33	1475 - 1765	33 - 36

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5SHRCAD - Aluminum, cold-aisle ceiling diffuser with round inlet

FEATURES

- Lay-in T-bar panel only
- Center volume controlled downblow section
- Adjustable pattern controllers for additional vertical throw
- Round duct connections
- Core is removable from face of diffuser
- Maintains a horizontal discharge air pattern from maximum to minimum CFM
- Excellent choice for cold-aisle applications (ex: supermarkets)

INLET SIZES

- Round: 14", 16", 18"
- Square: 15"x15", 18"x18"

FRAME STYLES

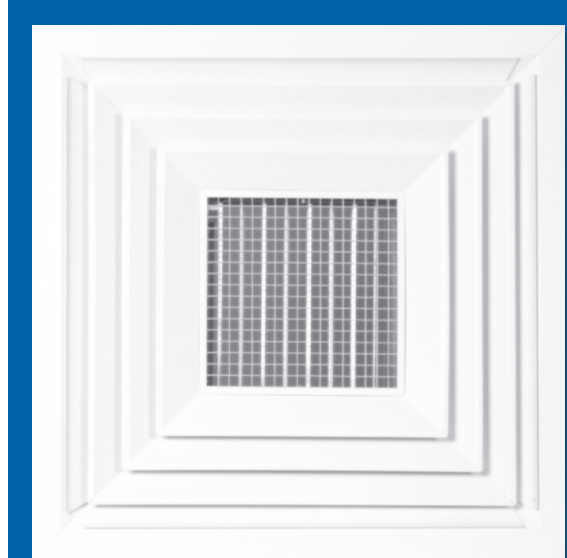
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

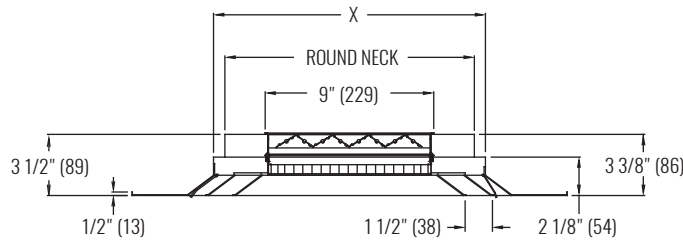


5SHRCAD

Louvered Face Diffuser, Flush Face, Center Downblow, Round Inlet



DIMENSIONAL DATA



FRAME 23, LAY-IN T-BAR

NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DIMENSIONS
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		X
		CFM	THROW (ft)	CFM	THROW (ft)	
DAMPER OPEN						
24"x24"	14"	214 - 940	4 - 16	980 - 1220	16 - 18	15" (381), 18" (457)
	16"	279 - 1196	5 - 18	1236 - 1535	18 - 20	18" (457)
	18"	353 - 1488	5 - 20	1538 - 1942	20 - 23	18" (457)
DAMPER CLOSED						
24"x24"	14"	214 - 780	13 - 24	801 - 940	25 - 27	15" (381), 18" (457)
	16"	279 - 977	14 - 27	1015 - 1194	28 - 30	18" (457)
	18"	353 - 1221	16 - 30	1236 - 1483	30 - 33	18" (457)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- SHRPLQ - Steel, plaque ceiling diffuser with slots

FEATURES

- Available in 1, 2, or 3 slots
- Core is removable from face of diffuser
- Round duct connections
- Excellent choice for variable air volume systems

INLET SIZES

- Round: 6" - 14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar
- F98 - 5/16" step down

PANEL SIZES

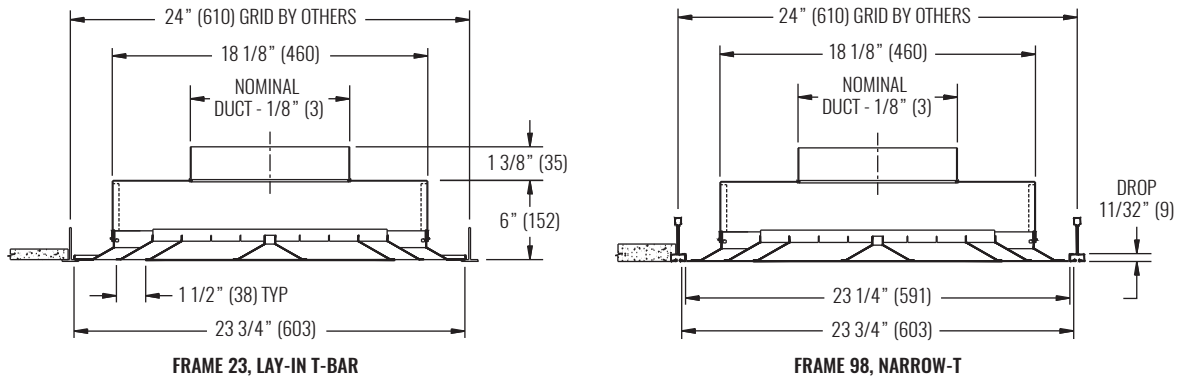
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
1-SLOT								
24"x24"	6"	39 - 147	3 - 10	160 - 255	11 - 15	190	18	0.40
	8"	70 - 200	5 - 13	209 - 349	13 - 17	250	20	0.40
	10"	55 - 250	4 - 15	259 - 464	15 - 20	310	23	0.45
2-SLOT								
24"x24"	6"	78 - 205	4 - 10	220 - 365	11 - 18	250	20	0.40
	8"	140 - 280	7 - 13	300 - 489	14 - 20	350	24	0.42
	10"	164 - 350	8 - 17	380 - 610	18 - 23	440	27	0.44
	12"	157 - 420	8 - 19	471 - 785	20 - 26	520	29	0.46
3-SLOT								
24"x24"	8"	175 - 340	7 - 13	366 - 600	14 - 23	420	26	0.45
	10"	218 - 418	9 - 16	450 - 718	18 - 25	530	30	0.48
	12"	236 - 500	9 - 20	550 - 942	22 - 28	670	33	0.55
	14"	214 - 605	8 - 23	650 - 1065	23 - 30	750	35	0.55

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 7000 - Aluminum, combination supply/return ceiling diffuser

FEATURES

- Provides quick single point air distribution for rooftop air conditioning packages
- Egg crate frame is removable for ease of cleaning
- Anti-sweat gasket
- Supply slots are constructed of aluminum extrusions with staked corner chevrons
- Center return air section is 1/2" square aluminum egg crate, clipped in place
- Factory mounted insulated plenum with mounting supports and turning vane

INLET SIZES¹

- Round: 16", 18"
- Square: 18"x28", 18"x36", 48"x24", 24"x54"

FRAME STYLES

- F23 - Lay-in T-bar
- F98 - 5/16" step down

PANEL SIZES

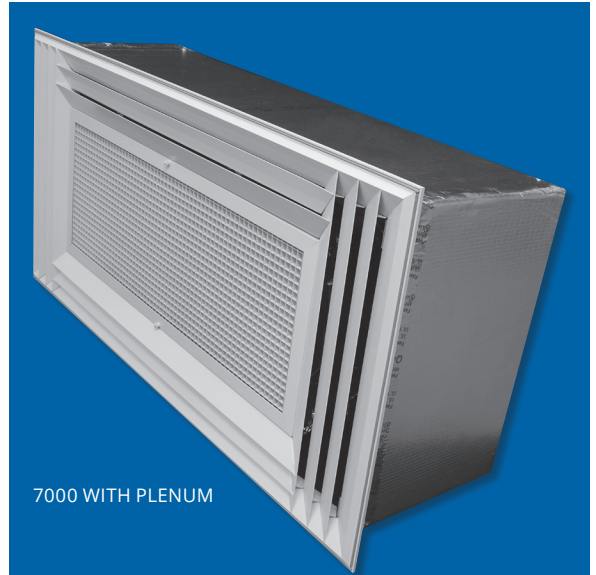
- 48"x24"
- 48"x36"
- 48"x48"
- 60"x60"

COMPATIBLE OPTIONS AND ACCESSORIES

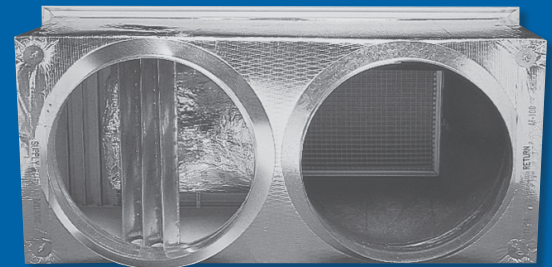
- OBDDM - Steel, square or rectangular damper (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

- ¹ Inlet option depends on panel size.



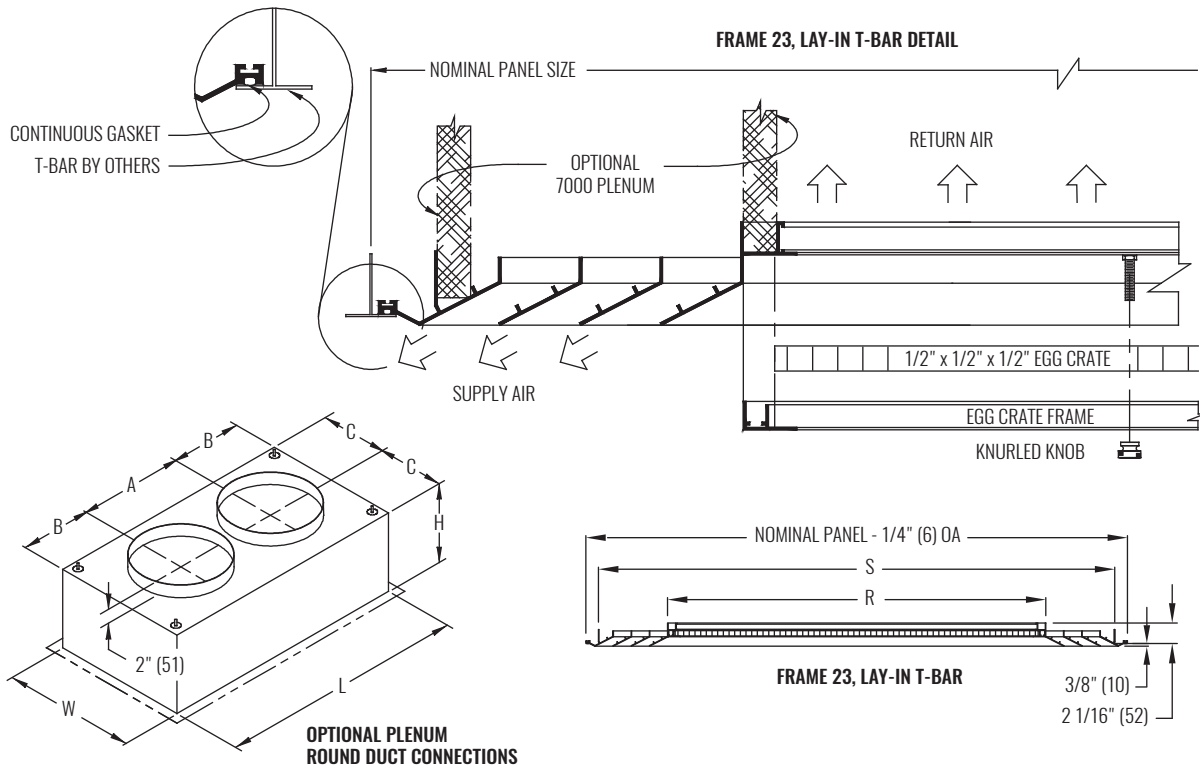
7000 WITH PLENUM



OPTIONAL ROUND PLENUM



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). 'OA' is overall length. See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DIMENSIONS							
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		L	W	H	A	B	C	S	R
		CFM	THROW (ft)	CFM	THROW (ft)								
48"x24"	16" ROUND	279 - 977	5 - 18	1070 - 1953	19 - 25	45" (1143)	21" (533)	13 1/2" (343)	22 1/2" (572)	11 1/4" (286)	10 1/2" (522)	21"x45" (533x1143)	11 5/8"x33" (295x838)
	18" ROUND	353 - 1130	6 - 19	1271 - 2472	20 - 28	45" (1143)	21" (533)	13 1/2" (343)	22 1/2" (572)	11 1/4" (286)	10 1/2" (522)	21"x45" (533x1143)	11 5/8"x33" (295x838)
36"x48"	18"x28"	700 - 1700	8 - 22	1850 - 3570	23 - 33							33"x45" (838x1143)	19"x33" (483x838)
48"x48"	18"x36"	900 - 1993	9 - 24	2186 - 4050	25 - 35							45"x45" (1143x1143)	33"x33" (838x838)
60"x60"	48"x24"	800 - 2960	3 - 27	3120 - 5920	28 - 43							57"x57" (1448x1448)	45"x45" (1143x1143)
	24"x54"	938 - 3239	3 - 27	3410 - 6563	28 - 45							57"x57" (1448x1448)	45"x45" (1143x1143)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODELS

- 1100 - Steel backpan and perforated face with aluminum frame supply diffuser
- 51100 - Aluminum backpan, perforated face, and frame supply diffuser

FEATURES

- Square or rectangular inlet
- Architectural extruded aluminum borders
- Individually adjustable blade pattern deflectors for horizontal to vertical throw
- Variety of discharge air patterns available
- Removable perforated face and core for ease of cleaning

INLET SIZES

- Width: 6", 8", 9", 10", 12", 15", 18"
- Height: 6", 8", 9", 10", 12", 15", 18"

FRAME STYLES

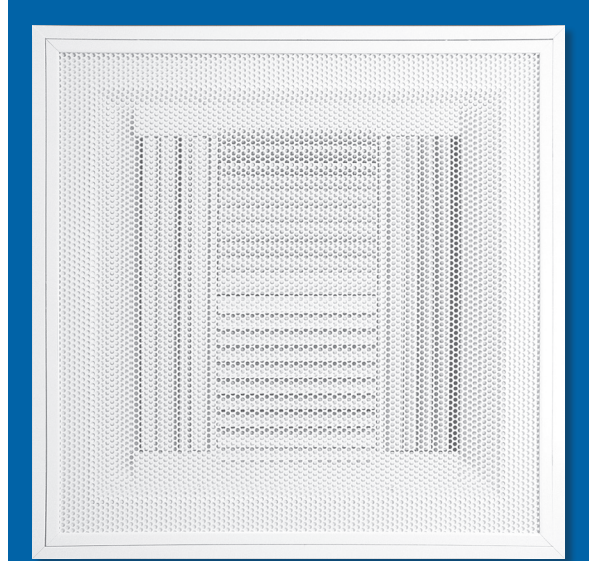
- F22 - Surface mount
- F23 - Lay-in T-bar
- F27 - Spline
- F98 - Narrow-T

PANEL SIZES

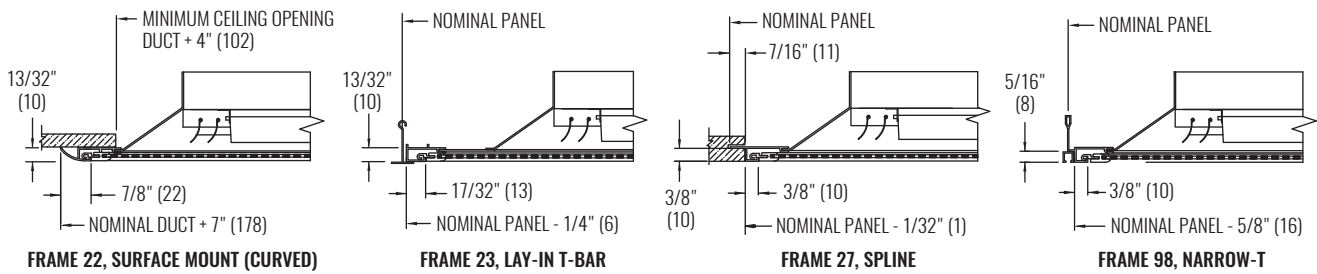
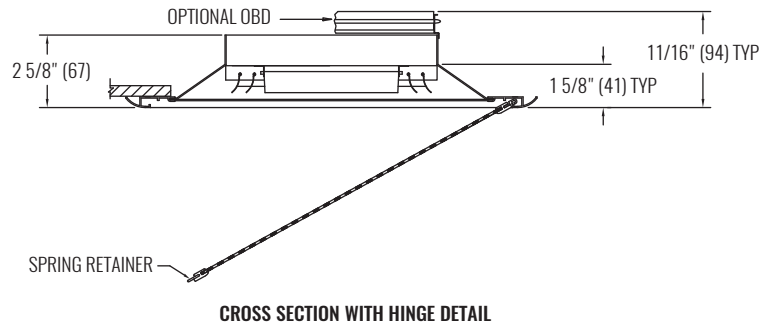
- 12"x12"
- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.
 A 12"x12" panel with F23, F27, or F98 is only available with a 6"x6" inlet size.
 A 24"x12" panel with F23, F27, or F98 is only available with a 6"x18" inlet size or smaller.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
12"x12"	6"x6"	75 - 95	5 - 6	100 - 250	7 - 11	140	15	0.50
	8"x8"	89 - 150	5 - 8	178 - 400	9 - 14	220	19	0.50
24"x24"	10"x10"	139 - 208	6 - 9	250 - 625	10 - 18	300	22	0.55
	12"x12"	165 - 300	6 - 10	330 - 800	11 - 20	460	28	0.55
	15"x15"	205 - 440	6 - 12	469 - 1250	13 - 25	625	32	0.60
	18"x18"	270 - 575	6 - 13	675 - 1688	15 - 29	800	37	0.60

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- 6100 - Steel, perforated face ceiling diffuser with round inlet
- 56100 - Aluminum, perforated face ceiling diffuser with round inlet (steel backpan)

FEATURES

- Unique self-centering stamped core; rotates 45° for easy adjustment from standard to corner discharge air patterns
- Circle-in-square design enhances decor and blends with most ceiling tiles
- Removable perforated face and core for ease of cleaning
- Individually adjustable blades to maintain optimal performance positions

INLET SIZES

- Round: 6" - 14" (2" increments), 15"

FRAME STYLES

- F20 - Surface mount
- F23 - Lay-in T-bar
- F27 - Spline
- F30 - Drop face
- F98 - Narrow-T

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

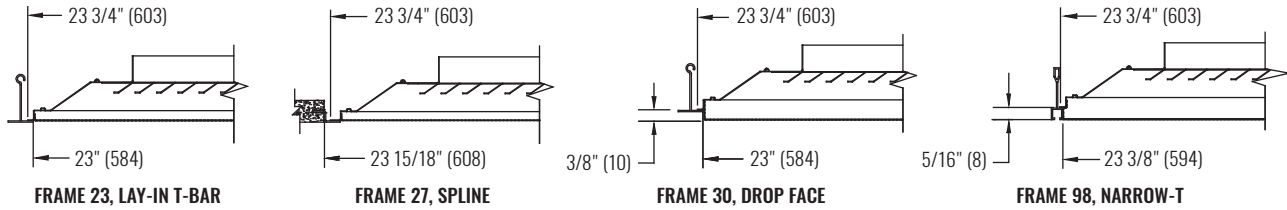
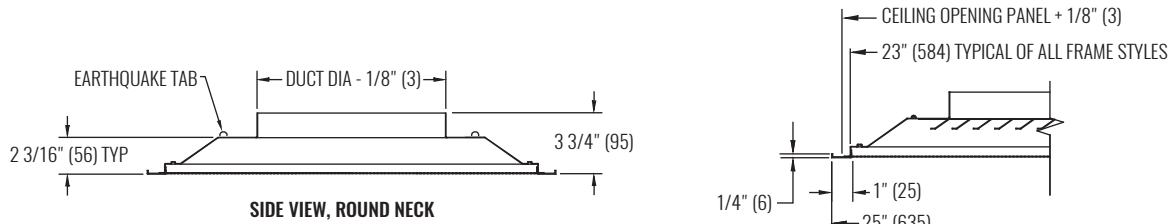


6100 / 56100

Perforated Face Diffuser, Stamped Core



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"	39 - 118	2 - 7	124 - 177	8 - 10	140	15	0.50
	8"	70 - 180	3 - 10	190 - 279	10 - 12	210	19	0.53
	10"	109 - 250	4 - 10	273 - 382	10 - 14	300	22	0.54
	12"	157 - 330	5 - 10	345 - 510	11 - 16	400	26	0.55
	14"	214 - 416	7 - 13	427 - 641	13 - 18	500	29	0.55
	15"	245 - 460	7 - 13	491 - 705	14 - 19	550	30	0.57

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- 6150 - Steel, perforated face ceiling diffuser with square inlet
- 56150 - Aluminum, perforated face ceiling diffuser with square inlet (steel backpan)

FEATURES

- Unique self-centering stamped core; rotates 45° for easy adjustment from standard to corner discharge air patterns
- Circle-in-square design enhances decor and blends with most ceiling tiles
- Removable perforated face and core for ease of cleaning
- Individually adjustable blades to maintain optimal performance positions

INLET SIZES

- Square: 6"x6", 8"x8", 10"x10

FRAME STYLES

- F20 - Surface mount
- F23 - Lay-in T-bar
- F27 - Spline
- F30 - Drop face
- F98 - Narrow-T

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

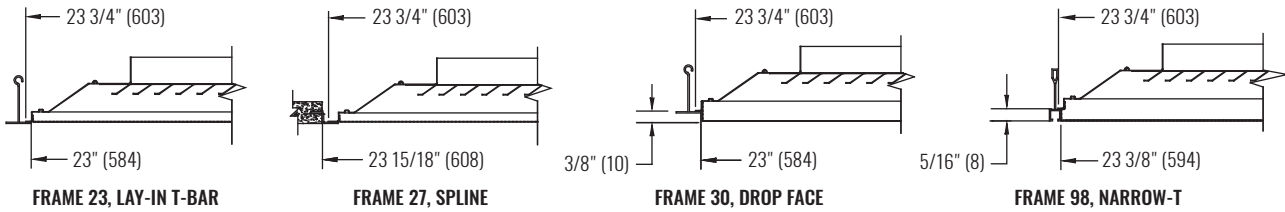
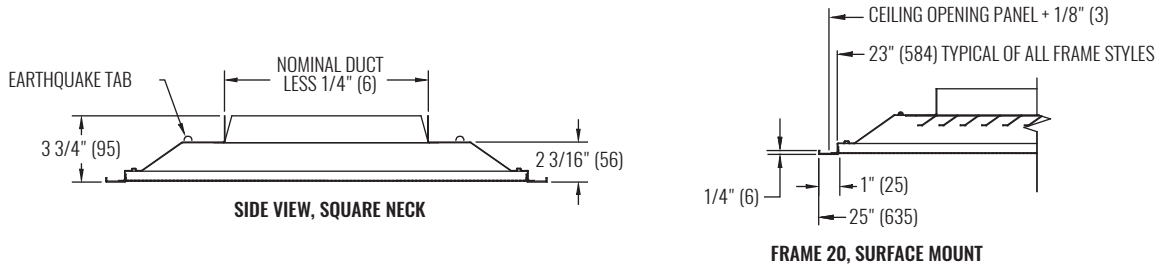


6150 / 56150

Perforated Face Diffuser, Stamped Core



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"x6"	25 - 127	1 - 11	135 - 200	11 - 14	160	16	0.38
	8"x8"	44 - 185	2 - 13	200 - 289	14 - 17	220	19	0.40
	10"x10"	69 - 250	2 - 14	265 - 382	14 - 19	300	22	0.40

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- 6200 - Steel, perforated face ceiling diffuser with square inlet
- 56200 - Aluminum, perforated face ceiling diffuser with square inlet (steel backpan)

FEATURES

- Individually adjustable curved blade pattern deflectors for horizontal to vertical throw
- Variety of air discharge patterns available
- Removable perforated face and core for easy cleaning

INLET SIZES

- 6"x6" (available for all panel sizes)
- 8"x8" (not available in 12"x12" or 24"x12" panel sizes)
- 10"x10" (not available in 12"x12" or 24"x12" panel sizes)
- 12"x12" (not available in 12"x12", 16"x16" or 24"x12" panel sizes)
- 14"x14" (only available in 24"x24" or 48"x24" panel sizes)
- 16"x16" (only available in 24"x24" or 48"x24" panel sizes)
- 18"x18" (only available in 24"x24" or 48"x24" panel sizes)

FRAME STYLES

- F20 - Surface mount
- F23 - Lay-in T-bar
- F27 - Spline
- F30 - Drop face
- F98 - Narrow-T

PANEL SIZES

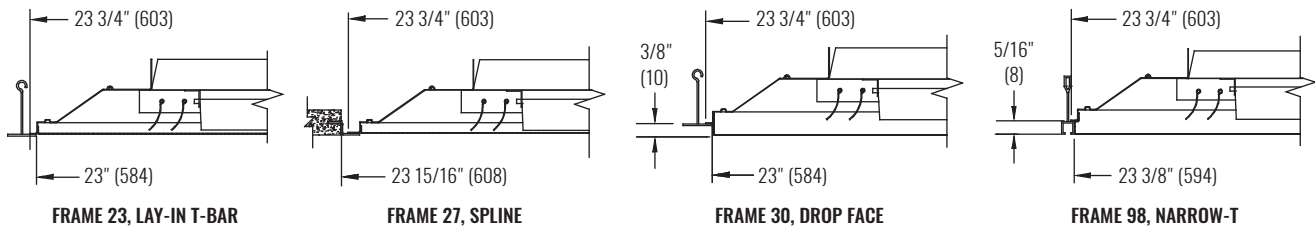
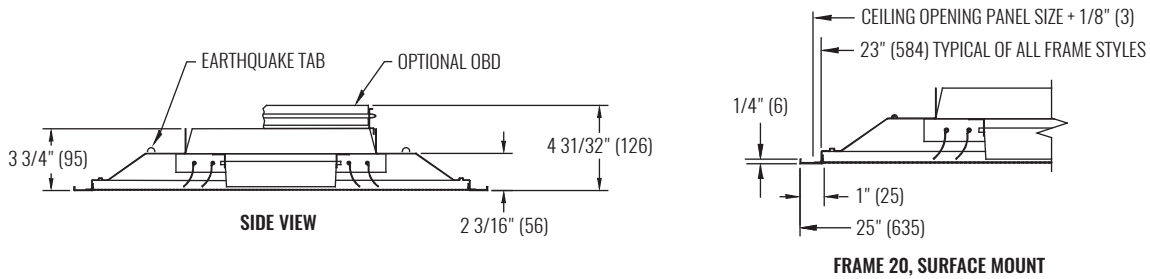
- 12"x12"
- 16"x16"
- 20"x20"
- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZES		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
12"x12"	6"x6"	75 - 170	6 - 12	175 - 250	12 - 15	210	19	0.35
16"x16"	10"x10"	69 - 320	3 - 13	347 - 500	13 - 16	350	24	0.38
20"x20"	8"x8"	89 - 250	5 - 14	267 - 370	14 - 17	280	22	0.40
	12"x12"	100 - 360	2 - 14	380 - 550	15 - 20	425	27	0.42
24"x24"	6"x6"	75 - 150	6 - 11	175 - 320	11 - 14	210	19	0.38
	8"x8"	133 - 267	8 - 14	300 - 530	15 - 20	360	24	0.40
	10"x10"	208 - 390	10 - 17	417 - 764	18 - 24	500	29	0.40
	12"x12"	300 - 550	12 - 20	600 - 1100	21 - 29	750	35	0.40
	14"x14"	408 - 720	14 - 23	770 - 1497	25 - 34	950	40	0.40
	16"x16"	533 - 889	16 - 26	970 - 1956	27 - 38	1150	44	0.40
	18"x18"	675 - 1125	18 - 29	1200 - 2250	30 - 41	1500	50	0.42

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 6200FR - Steel, fire rated, perforated ceiling diffuser with square inlet

FEATURES

- UL 263 classified assembly which incorporates a 3-hour rated fire damper and a 1/2" thick ceramic fiber blanket
- Individually adjustable curved blade pattern deflectors for horizontal to vertical throw
- Variety of air discharge patterns available
- Removable perforated face and core for easy cleaning

INLET SIZES

- Square: 6"x6" - 14"x14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES ¹

- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame

NOTE:

¹ Check allowance of options and accessories with local fire codes.

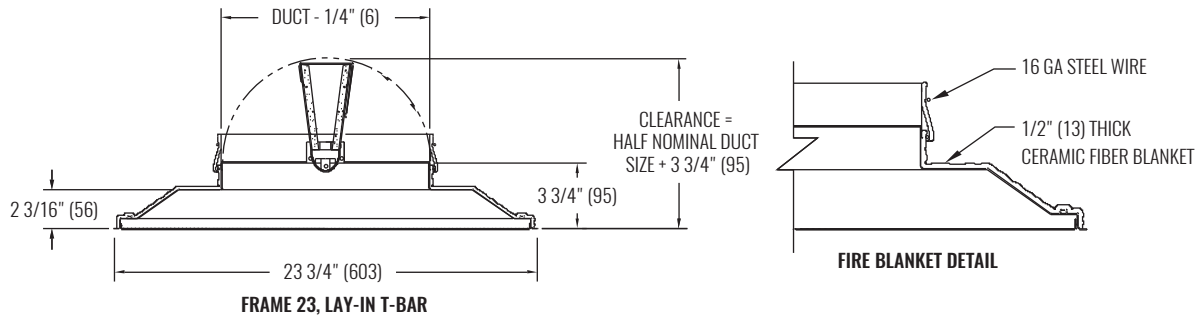


6200FR

Perforated Face Diffuser, Curved Blade Pattern Deflectors, Fire Rated



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"x6"	75 - 150	6 - 11	175 - 275	11 - 14	210	19	0.38
	8"x8"	133 - 267	8 - 14	289 - 489	15 - 19	360	24	0.40
	10"x10"	208 - 394	10 - 17	417 - 764	18 - 24	500	29	0.40
	12"x12"	300 - 550	12 - 20	600 - 1100	21 - 29	750	35	0.40
	14"x14"	408 - 681	14 - 23	817 - 1361	25 - 32	950	40	0.40

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 6300 - Steel, perforated face ceiling diffuser with mounted deflectors and a fiberglass backpan, pre-scored for round spin in duct

FEATURES

- Pre-scored fiberglass backpan for round spin-in collars (6" to 16", provided by others)
- Great choice for ducted return air systems

INLET SIZES

- Round: Pre-scored 6" - 16" (2" increments), field cut

FRAME STYLES

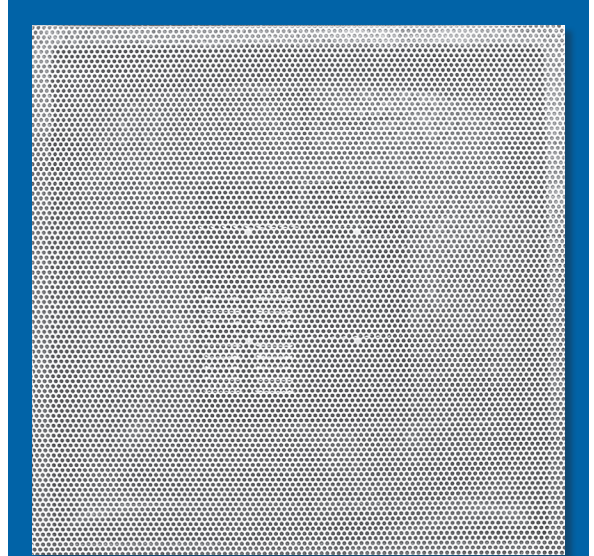
- F23 - Lay-in T-bar

PANEL SIZES

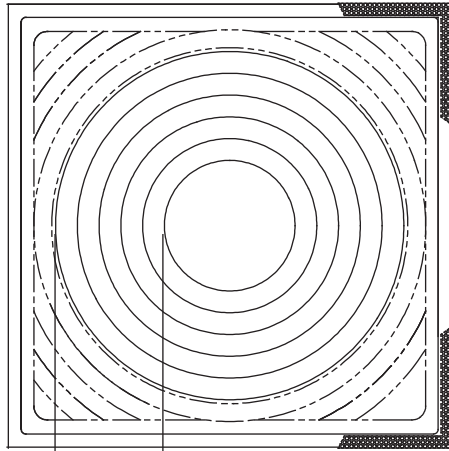
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- HCF23 - Steel, hard ceiling frame
- 5HCF23 - Aluminum, hard ceiling frame

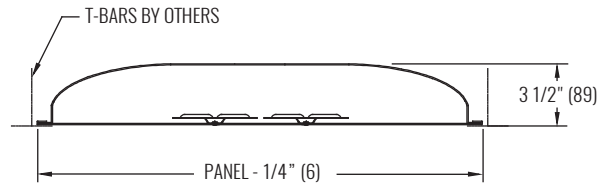


DIMENSIONAL DATA



SCORING OF THE BACKPAN IDENTIFIES ROUND DUCT SIZES FROM 6" (152) TO 16" (406) TO FACILITATE FIELD CUTTING

BACKPAN SCORING DETAIL



FRAME 23, LAY-IN T-BAR

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"	59 - 216	1 - 7	230 - 375	7 - 11	275	21	N/A
	8"	105 - 314	1 - 7	349 - 550	7 - 13	380	25	N/A
	10"	164 - 420	2 - 8	436 - 730	8 - 13	500	29	N/A
	12"	235 - 515	2 - 8	549 - 863	9 - 13	675	34	N/A
	14"	320 - 641	3 - 10	675 - 1068	11 - 16	800	37	N/A
	16"	419 - 770	4 - 10	837 - 1256	11 - 17	900	39	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- 6400 - Steel, perforated ceiling diffuser with square inlet
- 56400 - Aluminum, perforated ceiling diffuser with square inlet (steel backpan)

FEATURES

- Field adjustable 1, 2, 3, or 4-way blow patterns
- Great choice for installations with changing air pattern requirements
- Removable perforated face for easy cleaning

INLET SIZES

- 6"x6" (available for all panel sizes)
- 8"x8" (not available in 12"x12" or 24"x12" panel sizes)
- 10"x10" (only available in 20"x20", 24"x24", or 48"x24" panel sizes)
- 12"x12" (only available in 24"x24" or 48"x24" panel sizes)
- 15"x15" (only available in 24"x24" panel sizes)
- 18"x18" (only available in 24"x24" panel sizes)

FRAME STYLES

- F20 - Surface mount
- F23 - Lay-in T-bar
- F30 - Drop face
- F98 - Narrow-T ²

PANEL SIZES

- 12"x12"
- 16"x16" ¹
- 20"x20" ¹
- 24"x12"
- 24"x24"
- 48"x24"

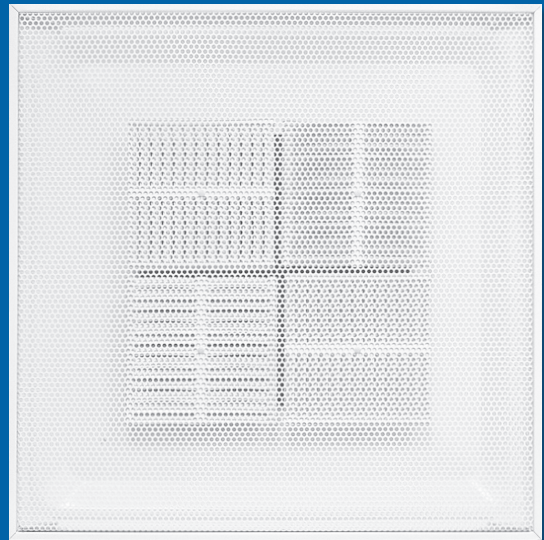
COMPATIBLE OPTIONS AND ACCESSORIES

- Optional insulated backpan
- OBDF A - Steel, square or rectangular face operated damper
- 5OBDF A - Aluminum, square or rectangular face operated damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

¹ Model 56400 not available in 16"x16" and 20"x20" panel sizes.

² F98 only available with 24"x24" panel.

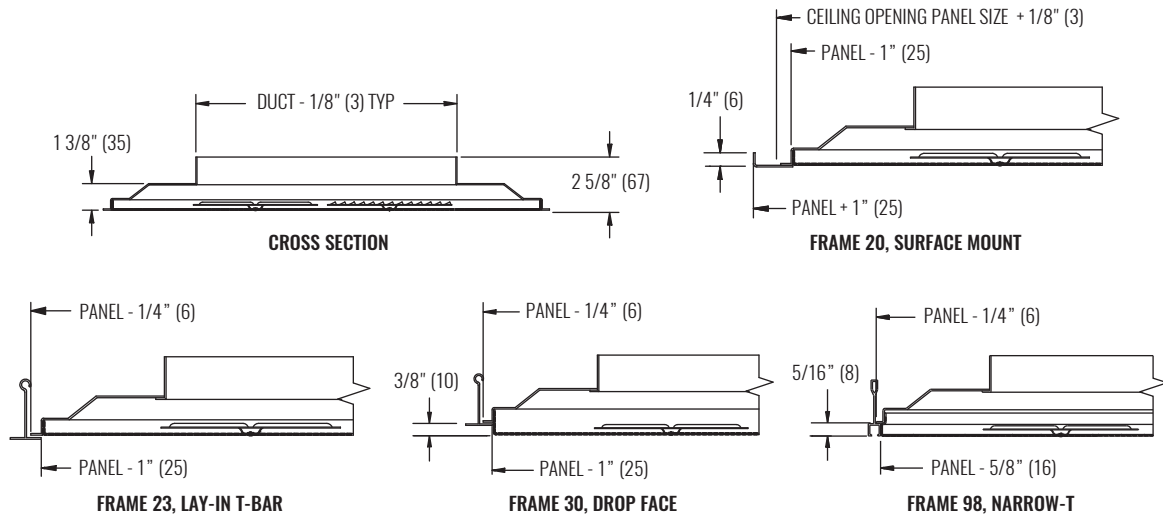


DIFFUSERS | PERFORATED FACE

6400 / 56400

WEB SEARCH: 6400 or 56400

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
12"x12"	6"x6"	75 - 175	4 - 9	200 - 275	10 - 13	220	19	0.50
24"x24"	6"x6"	75 - 175	4 - 9	200 - 275	10 - 13	220	19	0.50
	8"x8"	89 - 222	3 - 9	267 - 400	10 - 16	320	23	0.55
	10"x10"	139 - 347	4 - 11	380 - 556	12 - 17	425	27	0.58
	12"x12"	200 - 450	5 - 12	500 - 750	13 - 20	550	30	0.60
	15"x15"	313 - 610	7 - 13	625 - 1016	13 - 21	750	35	N/A
	18"x18"	450 - 788	8 - 14	840 - 1238	15 - 21	1000	41	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- 6400FR - Steel, fire rated, perforated ceiling diffuser with square inlet

FEATURES

- UL 263 classified assembly which incorporates a 3-hour rated fire damper and a 1/2" thick ceramic fiber blanket
- Field adjustable 1, 2, 3, or 4-way blow patterns
- Great choice for installations with changing air pattern requirements
- Removable perforated face for easy cleaning

INLET SIZES

- Square: 6"x6" - 14"x14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

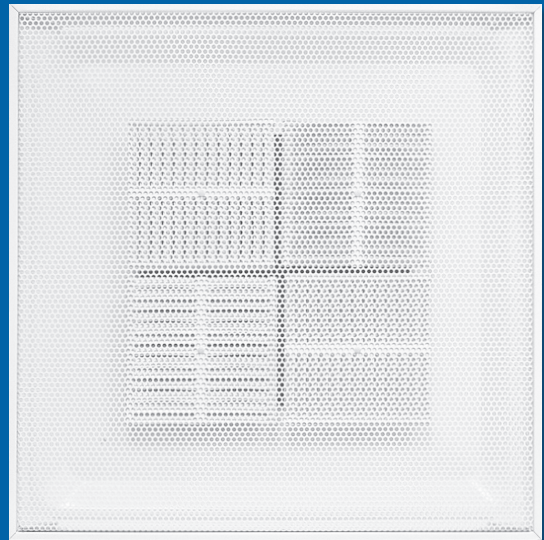
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame

NOTE:

- ¹ Check allowance of options and accessories with local fire codes.

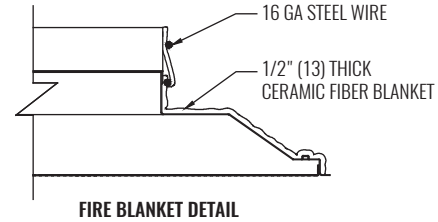
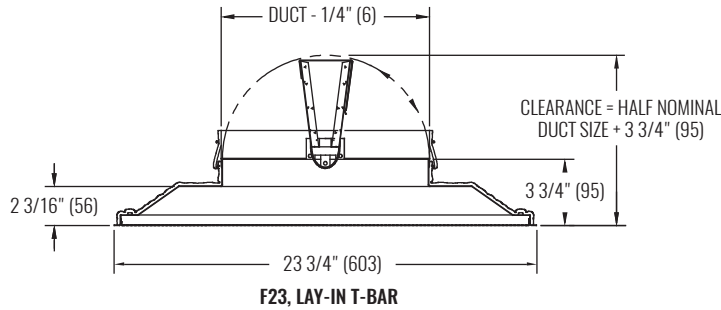


6400FR

Perforated Face Diffuser, Adjustable Pattern Deflectors, Fire Rated



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"x6"	75 - 175	4 - 9	200 - 275	10 - 13	220	19	0.50
	8"x8"	89 - 222	3 - 9	267 - 400	10 - 16	320	23	0.55
	10"x10"	139 - 347	4 - 11	380 - 556	12 - 17	425	27	0.58
	12"x12"	200 - 450	5 - 12	500 - 750	13 - 20	550	30	0.60

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- 6500 - Steel, perforated ceiling diffuser with round inlet
- 56500 - Aluminum, perforated ceiling diffuser with round inlet (steel backpan)

FEATURES

- Individually adjustable curved blade pattern deflectors for horizontal to vertical throw
- Variety of air discharge patterns available
- Removable perforated face and core for easy cleaning

INLET SIZES

- Round: 6" - 16" (2" increments)

FRAME STYLES

- F20 - Surface mount
- F23 - Lay-in T-bar
- F27 - Spline
- F30 - Drop face
- F98 - Narrow-T

PANEL SIZES

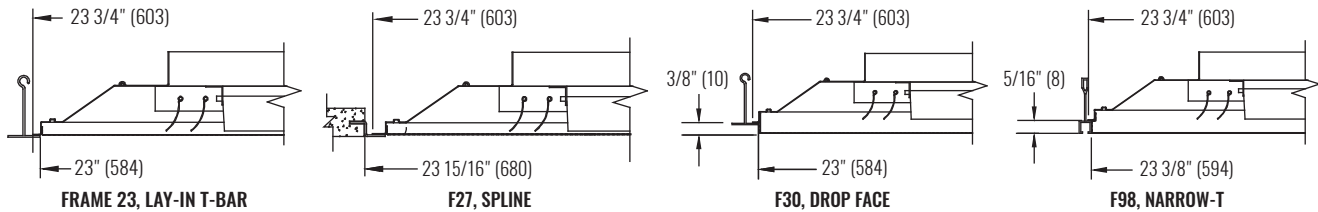
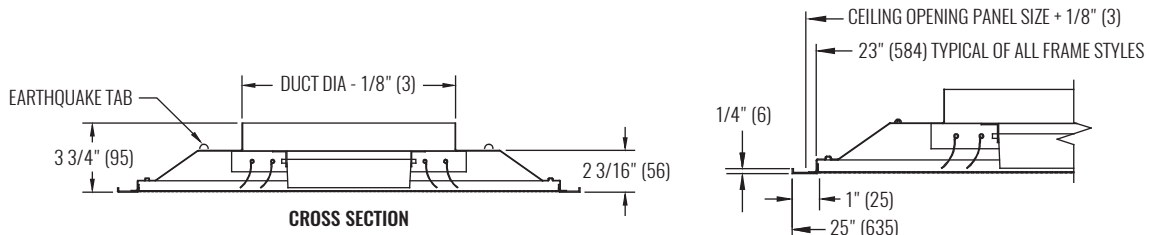
- 12"x12"
- 16"x16"
- 20"x20"
- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.
 A 12"x12" panel is only available with a 6" inlet size.
 A 16"x16" panel is only available with 10" and smaller inlet sizes.
 A 20"x20" panel is only available with 12" and smaller inlet sizes.
 A 24"x12" panel is only available with a 6" inlet size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
12"x12"	6"	59 - 157	6 - 12	176 - 255	13 - 15	200	18	0.30
16"x16"	8"	70 - 200	5 - 13	209 - 314	13 - 16	250	20	0.30
24"x24"	8"	105 - 244	12 - 18	279 - 450	19 - 24	320	23	0.30
	10"	164 - 340	14 - 21	370 - 600	22 - 28	440	27	0.30
	12"	235 - 320	17 - 23	471 - 785	24 - 32	550	30	0.30
	14"	214 - 550	15 - 26	590 - 961	27 - 35	700	34	0.30
	16"	279 - 670	17 - 29	698 - 1186	30 - 39	840	37	0.30

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 6500FR - Steel, fire rated, perforated ceiling diffuser with round inlet

FEATURES

- UL 263 classified assembly which incorporates a 3-hour rated fire damper and a 1/2" thick ceramic fiber blanket
- Individually adjustable curved blade pattern deflectors for horizontal to vertical throw
- Variety of air discharge patterns available
- Removable perforated face and core for easy cleaning

INLET SIZES

- Round: 6" - 14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

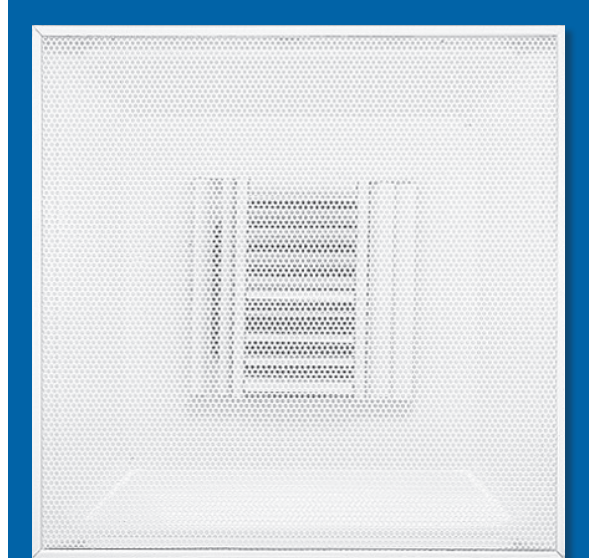
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame

NOTE:

- ¹ Check allowance of options and accessories with local fire codes.

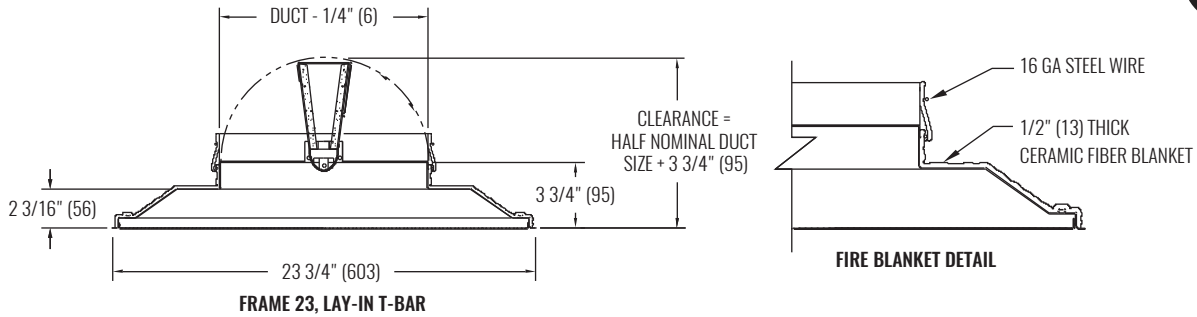


6500FR

Perforated Face Diffuser, Curved Blade Deflectors, Fire Rated



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"	59 - 165	9 - 14	176 - 300	15 - 20	210	19	0.30
	8"	105 - 244	12 - 18	279 - 450	19 - 24	320	23	0.30
	10"	164 - 340	14 - 21	370 - 600	22 - 28	440	27	0.30
	12"	235 - 320	17 - 23	471 - 785	24 - 32	550	30	0.30
	14"	214 - 550	15 - 26	590 - 961	27 - 35	700	34	0.30

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 6600 - Steel, perforated ceiling diffuser with round inlet
- 56600 - Aluminum, perforated ceiling diffuser with round inlet (steel backpan)

FEATURES

- Field adjustable 1, 2, 3, or 4-way blow patterns
- Great choice for installations with changing air pattern requirements
- Removable perforated face for easy cleaning

INLET SIZES ¹

- Round: 6" - 16" (2" increments)

FRAME STYLES

- F20 - Surface mount
- F23 - Lay-in T-bar
- F30 - Drop face
- F98 - Narrow-T ²

PANEL SIZES ¹

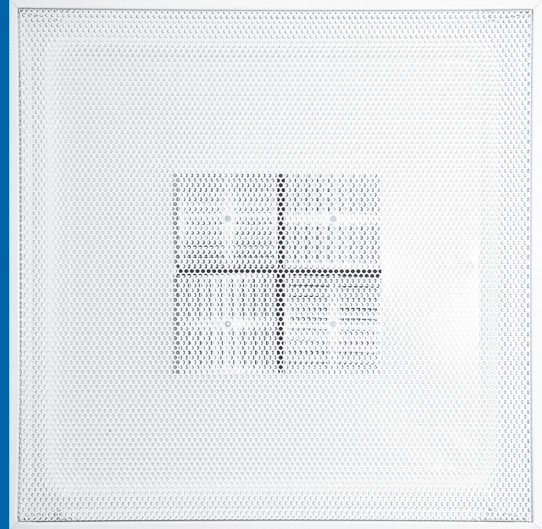
- 12"x12"
- 16"x16" ³
- 20"x20" ³
- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Optional Insulated Backpan
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

- ¹ See catalog for available inlet and panel size combinations.
- ² Frame 98 only available with 24"x24" panel size.
- ³ Models 56600 not available in 16"x16" and 20"x20" panel sizes.



WEB SEARCH: 6600 or 56600

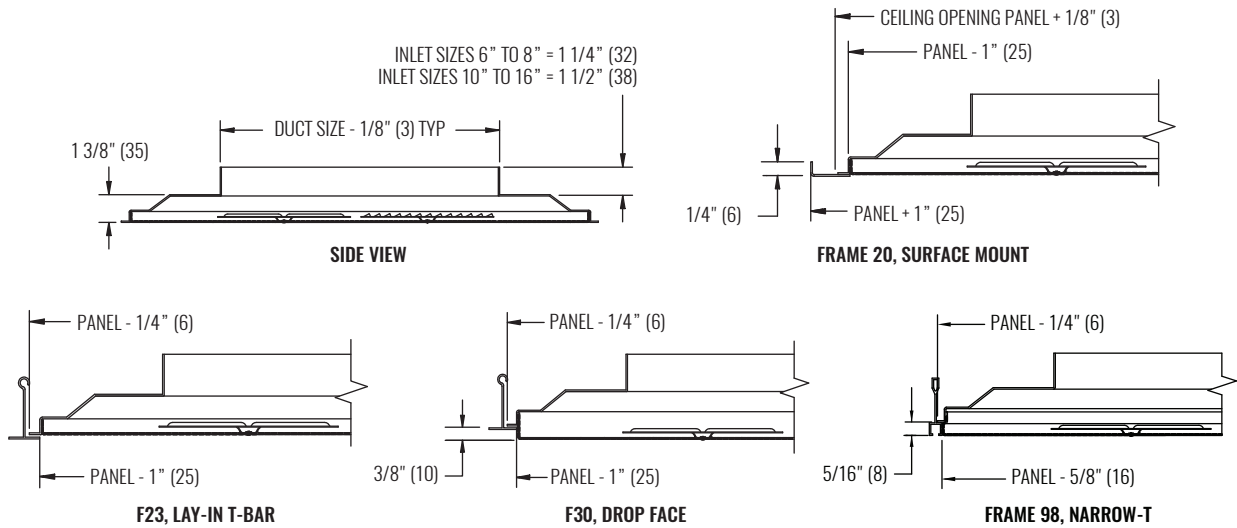


6600 / 56600

Perforated Face Diffuser, Adjustable Pattern Deflectors



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
12"x12"	6"	59 - 137	3 - 7	157 - 245	8 - 11	180	17	0.45
16"x16"	8"	105 - 220	5 - 10	244 - 349	11 - 15	270	21	0.50
24"x24"	6"	59 - 150	3 - 9	157 - 240	9 - 12	190	18	0.49
	8"	105 - 220	5 - 10	244 - 349	11 - 15	250	20	0.50
	10"	164 - 300	6 - 11	327 - 491	12 - 17	350	24	0.53
	12"	235 - 375	7 - 11	392 - 628	12 - 18	470	28	0.58
	14"	320 - 481	8 - 12	510 - 748	13 - 19	600	32	0.60

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 6600FR - Steel, fire rated, perforated ceiling diffuser with round inlet

FEATURES

- UL 263 classified assembly which incorporates a 3-hour rated fire damper and a 1/2" thick ceramic fiber blanket
- Field adjustable 1, 2, 3, or 4-way blow patterns
- Great choice for installations with changing air pattern requirements
- Removable perforated face for easy cleaning

INLET SIZES

- Round: 6" - 14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

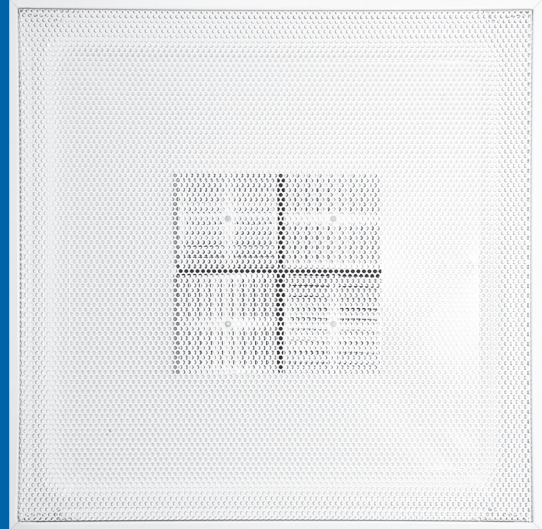
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame

NOTE:

- ¹ Check allowance of options and accessories with local fire codes.

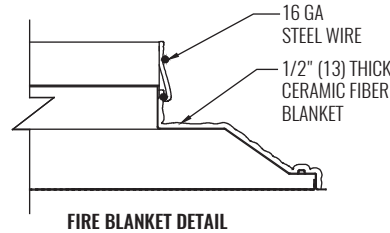
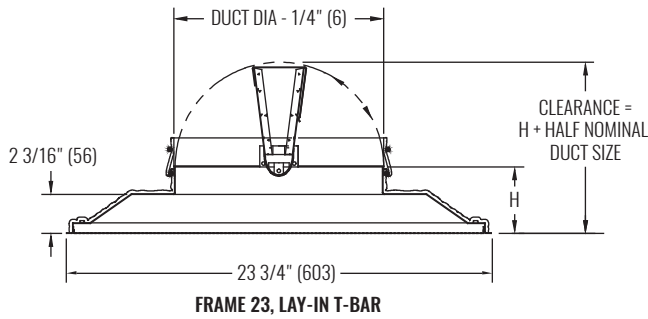


6600FR

Perforated Face Diffuser, Adjustable Pattern Deflectors, Fire Rated



DIMENSIONAL DATA



DIMENSIONS	
INLET SIZE	H
6" - 8"	3 1/4"(83)
10" - 14"	3 3/4"(95)

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"	59 - 150	3 - 9	157 - 240	9 - 12	190	18	0.49
	8"	105 - 220	5 - 10	244 - 349	11 - 15	250	20	0.50
	10"	164 - 300	6 - 11	327 - 491	12 - 17	350	24	0.53
	12"	235 - 375	7 - 11	392 - 628	12 - 18	470	28	0.58
	14"	320 - 481	8 - 12	510 - 748	13 - 19	600	32	0.60

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODELS

- 1190 - Steel backpan and perforated face with aluminum frames, return
- 51190 - Aluminum backpan, perforated face, and frames, return

FEATURES

- Square or rectangular inlet
- Architectural extruded aluminum borders
- Individually adjustable blade pattern deflectors for horizontal to vertical throw
- Variety of discharge air patterns available
- Removable perforated face and core for ease of cleaning

INLET SIZES

- Width: 6", 8", 9", 10", 12", 15", 18"
- Height: 6", 8", 9", 10", 12", 15", 18"

FRAME STYLES

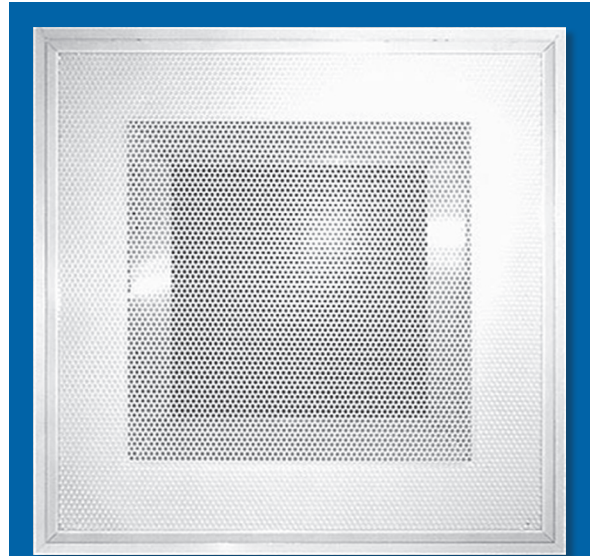
- F22 - Surface mount
- F23 - Lay-in T-bar
- F27 - Spline
- F98 - Narrow-T

PANEL SIZES

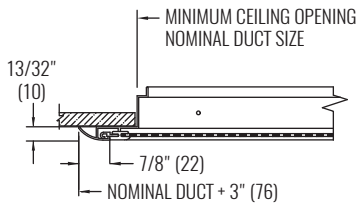
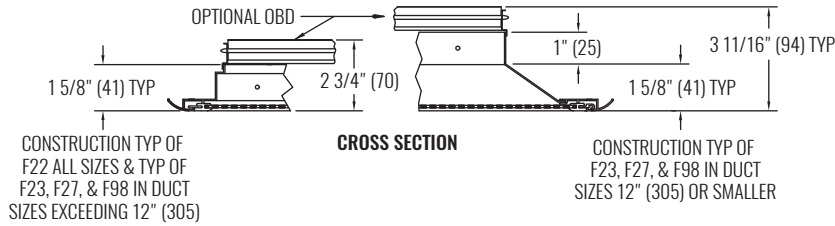
- 12"x12"
- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

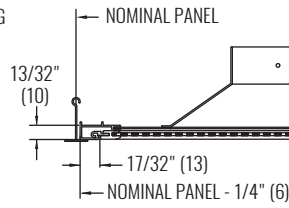
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



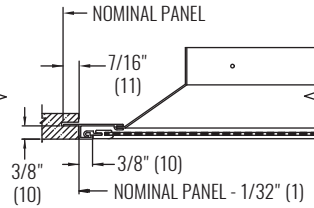
DIMENSIONAL DATA



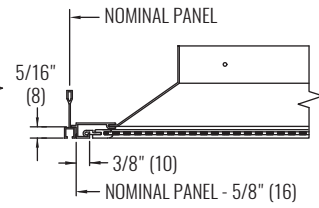
FRAME 22, SURFACE MOUNT (CURVED)



FRAME 23, LAY-IN T-BAR



FRAME 27, SPLINE



FRAME 98, NARROW-T

NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.
 A 12"x12" panel with F23, F27, or F98 is only available with 6"x6" and 10"x10 inlet sizes.
 A 24"x12" panel with F23 is only available with 6"x6" and 22"x10" inlet sizes.
 A 24"x12" panel with F27 or F98 is only available with a 6"x6" inlet size.
 A 24"x24" panel with F23, F27, or F98 is only available with inlet sizes 22"x22" and smaller.
 A 48"x24" panel with F23, F27, or F98 is only available with a 46"x22" inlet size.

PERFORMANCE DATA

SIZE NOMINAL INLET	PERFORMANCE	
	NC (< 25) CFM	NC (25 - 40) CFM
10"x10"	208 - 556	600 - 1000
12"x12"	300 - 750	800 - 1300
14"x14"	408 - 953	1000 - 1635
10"x22"	458 - 1025	1069 - 1800
18"x18"	675 - 1400	1500 - 2475
20"x20"	833 - 1600	1667 - 2850
22"x22"	1008 - 1900	2017 - 3361
22"x46"	1406 - 3350	3514 - 5622

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 6290F - Steel, perforated face filter return with square inlet, designed for standard 20"x20"x1" filter (by others)

FEATURES

- Hinged, removable face with 51% perforated open area
- Uses standard 20"x20"x1" filter (by others)
- Various frame styles available

INLET SIZES

- Square: 20"x20"

FRAME STYLES

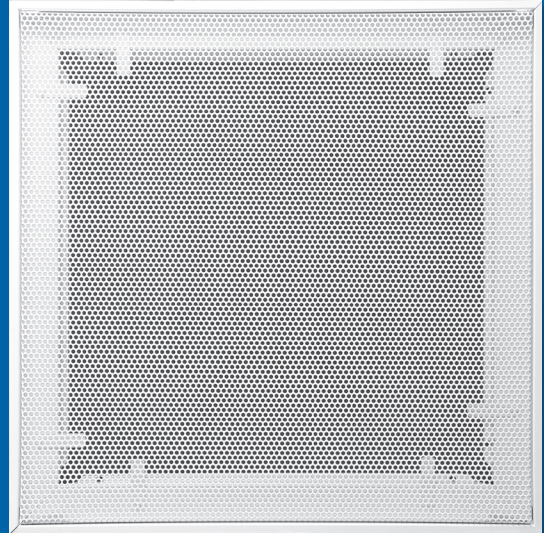
- F20 - Surface mount
- F23 - Lay-in T-bar
- F30 - Drop face

PANEL SIZES

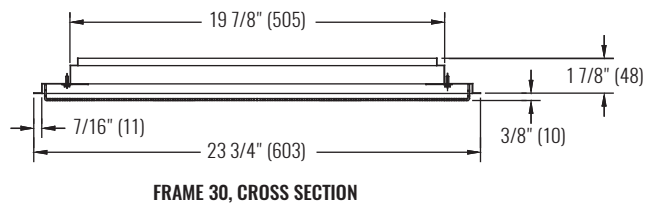
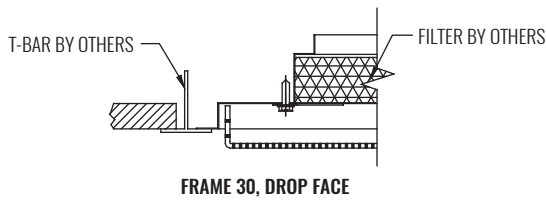
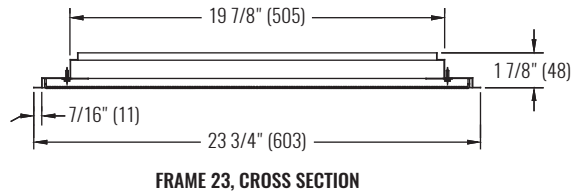
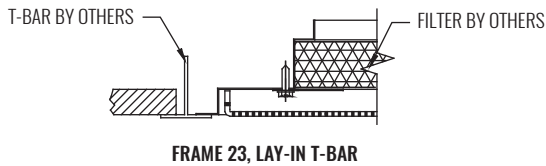
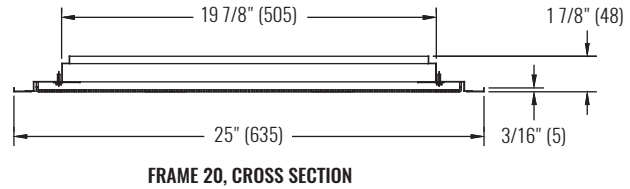
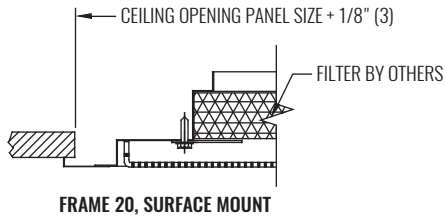
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE DATA

SIZE		PERFORMANCE	
PANEL	NOMINAL INLET	NC (< 25)	NC (25 - 40)
		CFM	CFM
24"x24"	20"x20"	833 - 1389	1667 - 2778

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 6290FR - Steel, fire rated, perforated return with square inlet

FEATURES

- UL 263 classified assembly which incorporates a 3-hour rated fire damper and a 1/2" thick ceramic fiber blanket
- Removable perforated face and core for easy cleaning

INLET SIZES

- Square: 6"x6" - 14"x14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

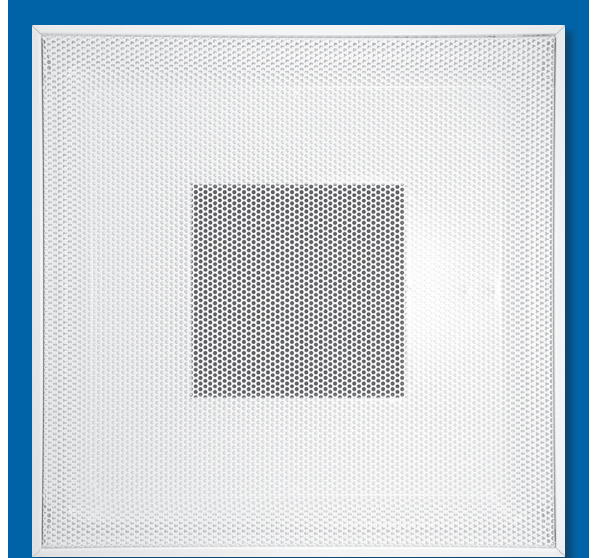
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES ¹

- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame

NOTE:

¹ Check allowance of options and accessories with local fire codes.

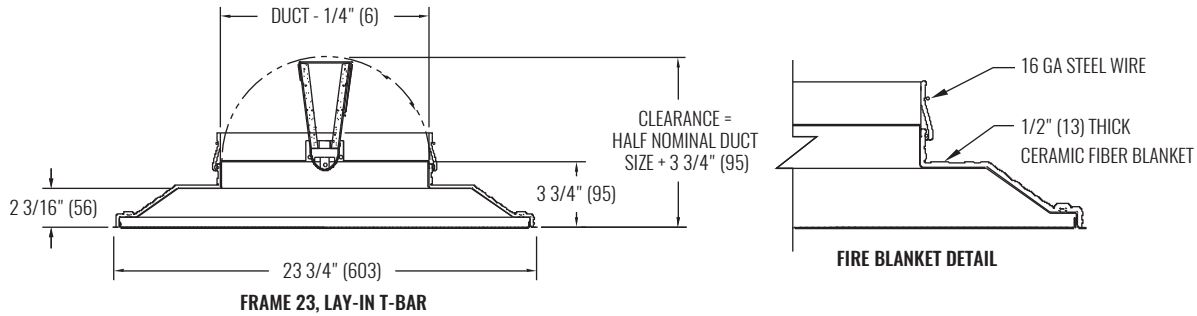


6290FR

Perforated Face Return, Fire Rated



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE DATA

SIZE		PERFORMANCE	
PANEL SIZE	NOMINAL INLET	NC (< 25)	NC (25 - 40)
		CFM	CFM
24"x24"	6"x6"	75 - 400	430 - 800
	8"x8"	133 - 530	580 - 1075
	10"x10"	208 - 670	694 - 1350
	12"x12"	300 - 825	900 - 1675
	14"x14"	408 - 953	1050 - 1900

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 6390 - Steel, perforated face return with fiberglass backpan, pre-scored for round spin in duct

FEATURES

- Pre-scored fiberglass backpan for round spin-in collars (6" to 16", provided by others)
- Great choice for ducted return air systems

INLET SIZES

- Round: Pre-scored 6" - 16" (2" increments), field cut

FRAME STYLES

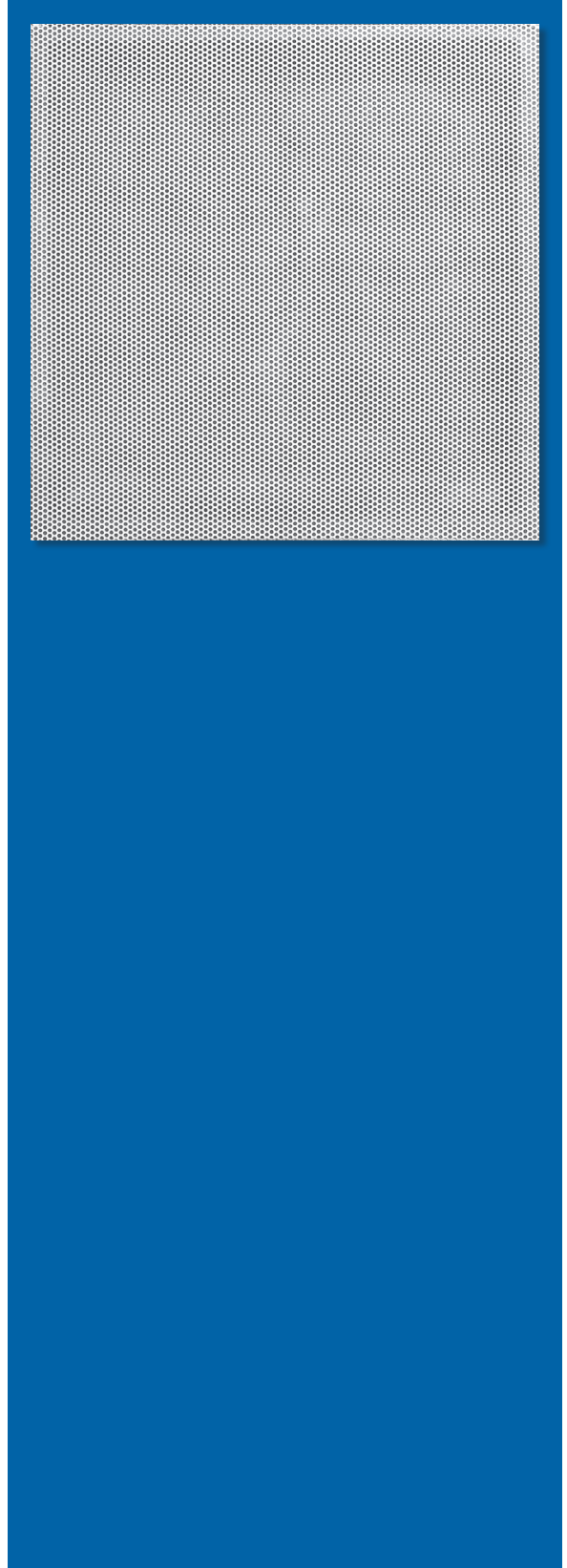
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- HCF23 - Steel, hard ceiling frame
- 5HCF23 - Aluminum, hard ceiling frame

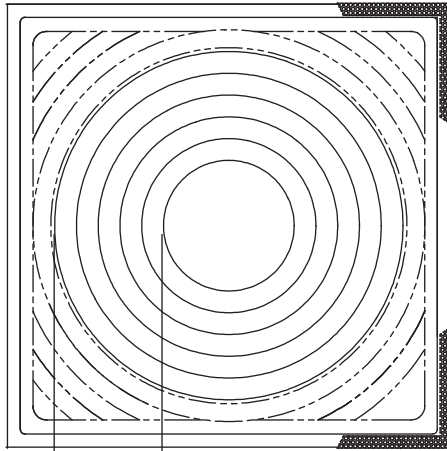


DIFFUSERS | PERFORATED FACE

6390

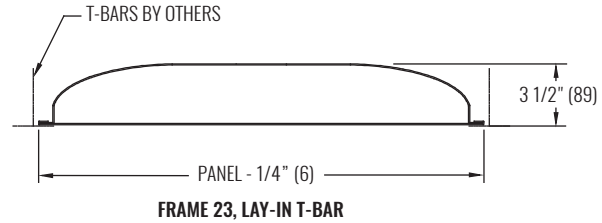


DIMENSIONAL DATA



SCORING OF THE BACKPAN IDENTIFIES ROUND DUCT SIZES FROM 6" (152) TO 16" (406) TO FACILITATE FIELD CUTTING

BACKPAN SCORING DETAIL



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE DATA

SIZE		PERFORMANCE	
PANEL	NOMINAL INLET	NC (< 25)	NC (25 - 40)
		GFM	GFM
24"x24"	6"	59 - 360	380 - 610
	8"	105 - 650	680 - 1095
	10"	164 - 1025	1065 - 1720
	12"	235 - 1410	1465 - 2370
	14"	320 - 2025	2100 - 3400
	16"	419 - 2655	2755 - 4460

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODELS

- 6490 - Steel, perforated return with square inlet
- 56490 - Aluminum, perforated return with square inlet (steel backpan)

FEATURES

- Removable perforated face for easy cleaning

INLET SIZES ¹

- 6"x6"
- 8"x8"
- 10"x10"
- 12"x12"
- 14"x14"
- 15"x15"
- 16"x16"
- 18"x6"
- 18"x18"
- 22"x10"
- 22"x22"
- 46"x22"

FRAME STYLES

- F20 - Surface mount
- F23 - Lay-in T-bar
- F30 - Drop face
- F98 - Narrow-T ²

PANEL SIZES ¹

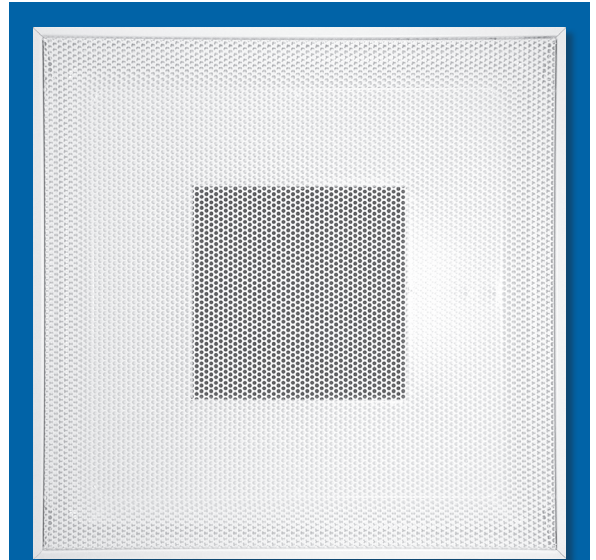
- 12"x12"
- 16"x16" ³
- 20"x20" ³
- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Optional insulated backpan
- OBDFA - Steel, square or rectangular face operated damper
- 5OBDFA - Aluminum, square or rectangular face operated damper
- HCF23 - Steel, hard ceiling frame (Frame 23 only)
- 5HCF23 - Aluminum, hard ceiling frame (Frame 23 only)

NOTES:

- ¹ See catalog for available inlet and panel size combinations.
- ² Frame 98 only available with 24"x24" panel size.
- ³ Model 56490 not available in 16"x16" and 20"x20" panel sizes.

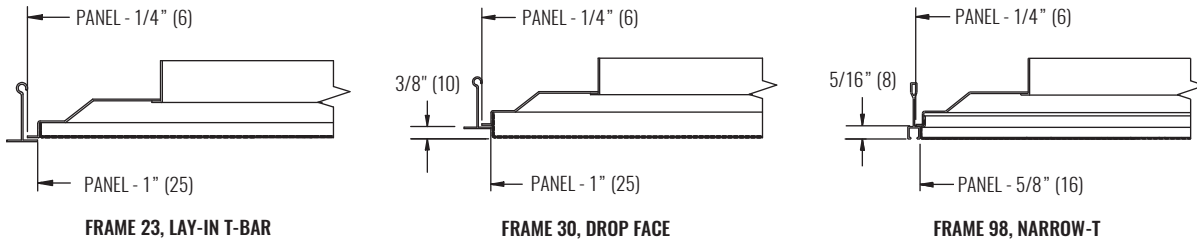
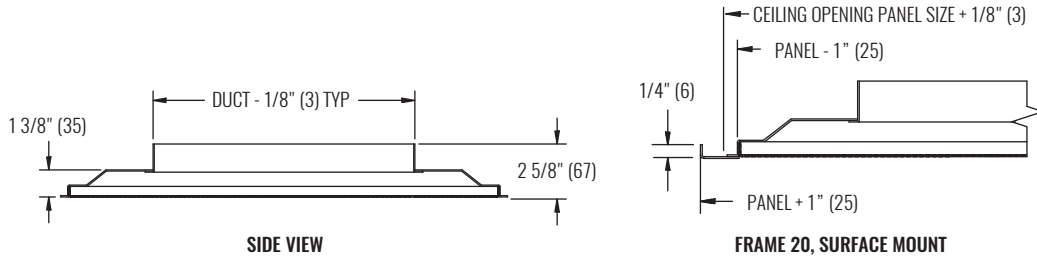


6490 / 56490

Perforated Face Return



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE DATA

SIZE		PERFORMANCE	
PANEL	NOMINAL INLET	NC (< 25)	NC (25 - 40)
		CFM	CFM
12"x12"	6"x6"	75 - 285	305 - 520
24"x12"	22"x10"	458 - 1000	1069 - 1875
24"x24"	6"x6"	75 - 285	305 - 520
	8"x8"	133 - 430	444 - 785
	10"x10"	208 - 575	625 - 1075
	12"x12"	300 - 765	800 - 1390
	16"x16"	533 - 1150	1244 - 1956
	18"x18"	675 - 1350	1450 - 2250
	22"x22"	1008 - 1775	1900 - 3025
48"x24"	46"x22"	703 - 3000	3200 - 4919

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 6590FR - Steel, fire rated return with round inlet

FEATURES

- UL 263 classified assembly which incorporates a 3-hour rated fire damper and a 1/2" thick ceramic fiber blanket
- Removable perforated face and core for easy cleaning

INLET SIZES

- Round: 6" - 14" (2" increments)

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

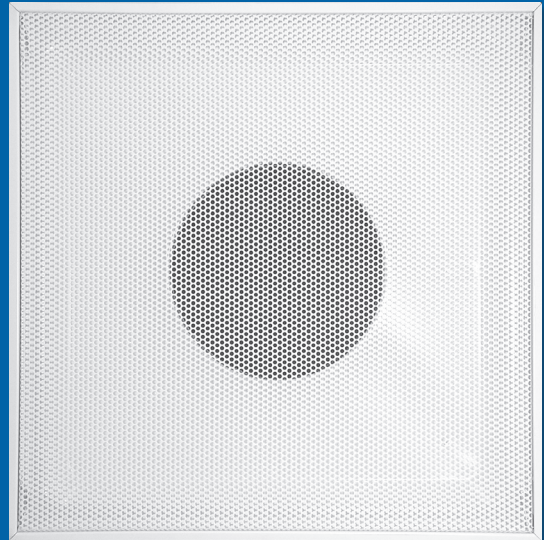
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES ¹

- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)

NOTE:

- ¹ Check allowance of options and accessories with local fire codes.

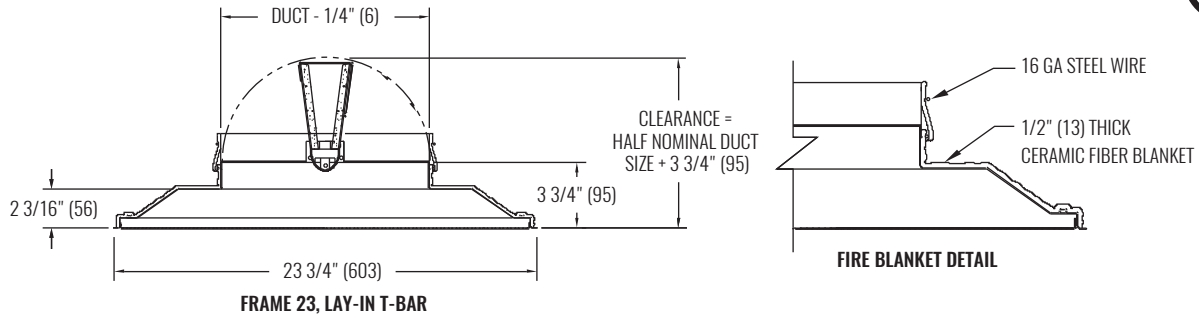


6590FR

Perforated Face Return, Fire Rated



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE DATA

SIZE		PERFORMANCE	
PANEL	NOMINAL INLET	NC (< 25)	NC (25 - 40)
		CFM	CFM
24"x24"	6"	59 - 350	370 - 705
	8"	105 - 475	510 - 960
	10"	164 - 600	650 - 1220
	12"	235 - 706	785 - 1445
	14"	320 - 865	915 - 1750

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

DIFFUSERS | PERFORATED FACE

6590FR

MODEL

- 6690 - Steel, perforated return with round inlet
- 56690 - Aluminum, perforated return with round inlet (steel backpan)

FEATURES

- Removable perforated face for easy cleaning

INLET SIZES ¹

- Round: 6" - 16" (2" increments)

FRAME STYLES

- F20 - Surface mount
- F23 - Lay-in T-bar
- F30 - Drop face
- F98 - Narrow-T ²

PANEL SIZES ¹

- 12"x12"
- 16"x16" ³
- 20"x20" ³
- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

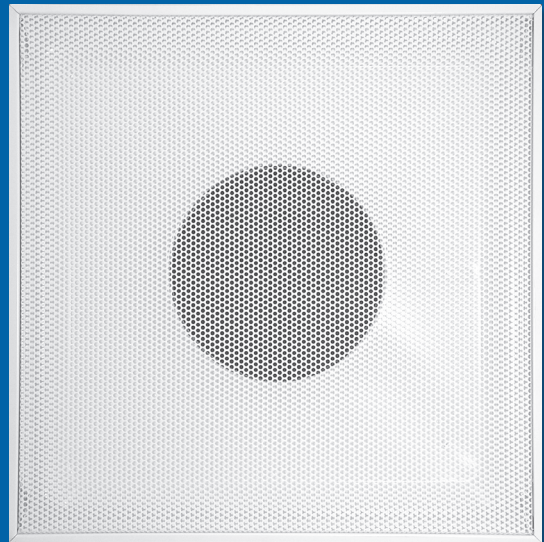
- Insulated backpan
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

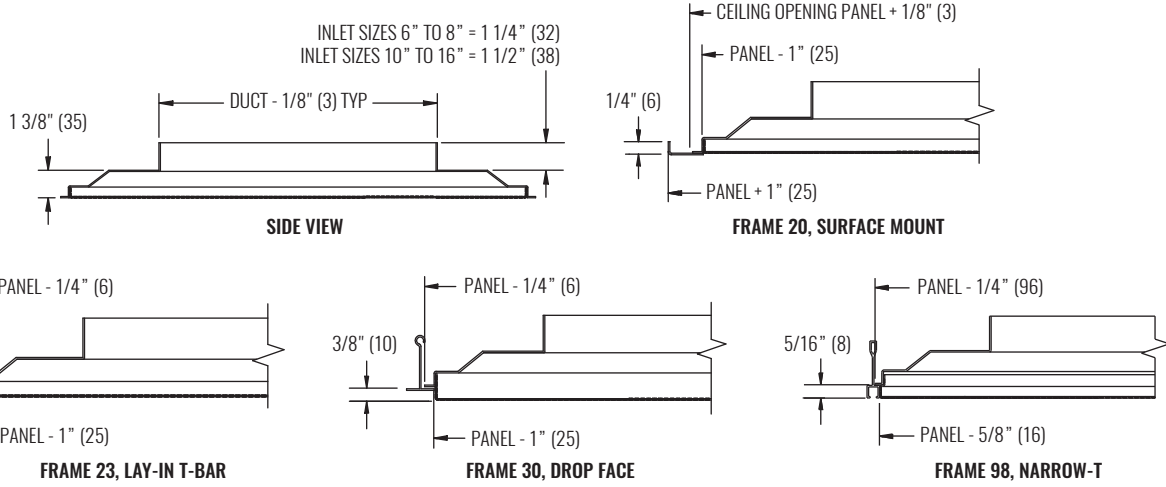
¹ See catalog for available inlet and panel size combinations.

² Frame 98 only available with 24"x24" panel size.

³ Models 56690 not available in 16"x16" and 20"x20" panel sizes.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE DATA

SIZE		PERFORMANCE	
PANEL	NOMINAL INLET	NC (< 25)	NC (25 - 40)
		CFM	CFM
12"x12"	6"	59 - 240	260 - 430
16"x16"	8"	105 - 360	384 - 660
20"x20"	14"	320 - 748	855 - 1250
24"x12"	6"	59 - 240	260 - 430
24"x24"	6"	59 - 240	260 - 430
	8"	105 - 360	384 - 660
	10"	164 - 491	545 - 905
	12"	235 - 628	706 - 1130
	14"	320 - 748	855 - 1455
48"x24"	16"	419 - 970	977 - 1760
	14"	320 - 748	855 - 1455

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 6790 - Steel perforated return panel
- 56790 - Aluminum perforated return panel

FEATURES

- Matches 6000 series supply diffusers in appearance room side
- Great choice for non-ducted return air systems

FRAME STYLES

- F23 - Lay-in T-bar
- F30 - Drop face
- F98 - Narrow-T ²

PANEL SIZES

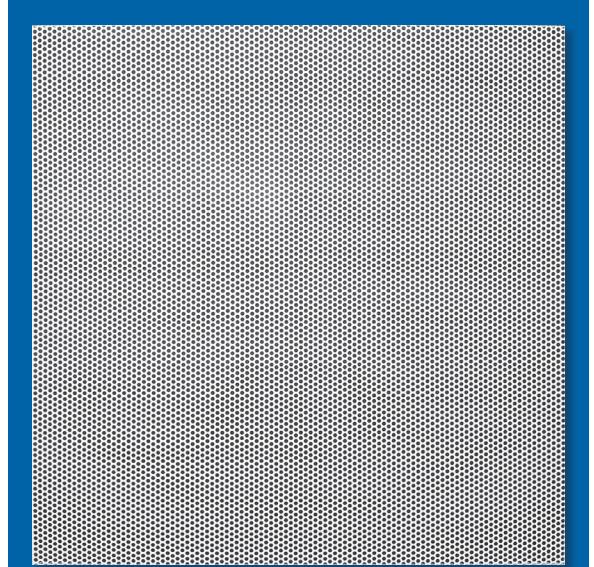
- 12"x12"
- 16"x16" ¹
- 20"x20" ¹
- 24"x12"
- 24"x24"
- 48"x12"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

NOTES:

- ¹ Size only available for model 6790.
- ² Frame 98 (F98) only available with 24"x24" panel.



DIFFUSERS | PERFORATED FACE

6790 / 56790

WEB SEARCH: 6790 or 56790

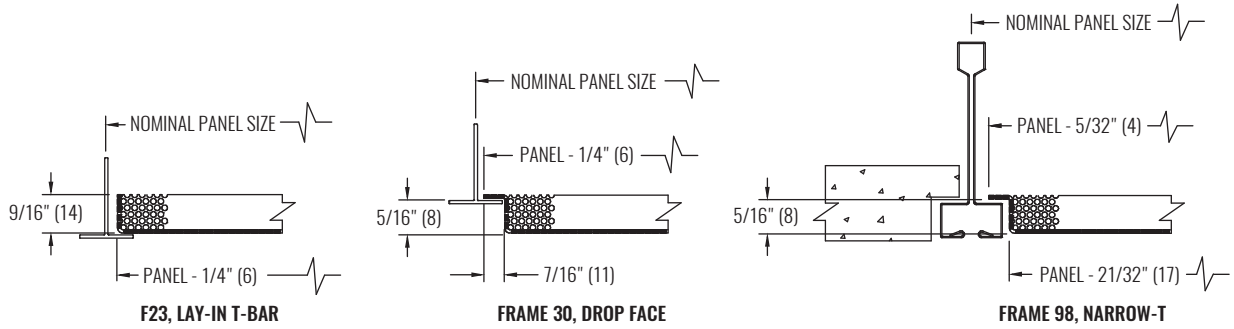


6790 / 56790

Perforated Face Return, Panel



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown are for 24"x24" panel size.

PERFORMANCE DATA

SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)
PANEL	CFM	CFM
12"x12"	200 - 750	800 - 1335
16"x16" ¹	356 - 1150	1244 - 1956
24"x12"	400 - 1285	1340 - 2200
20"x20" ¹	556 - 1650	1667 - 2778
24"x24"	800 - 2185	2275 - 4000
48"x24"	800 - 3710	4000 - 6400

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

¹ Size only available for model 6790.

MODEL

- 1240 - Steel, modular core ceiling diffuser, square inlet
- 51240 - Aluminum, modular core ceiling diffuser, square inlet

FEATURES

- Hand-removable modular cores
- Variety of discharge air patterns
- Air diffused through fixed vanes

INLET SIZES¹

- Square: 6"x6" - 24"x24" (2" increments)

FRAME STYLES

- F21 - Surface mount, beveled
- F22 - Surface mount, flat
- F23 - Lay-in T-bar
- F29 - Camlock
- F30 - Drop face
- F98 - Narrow-T

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

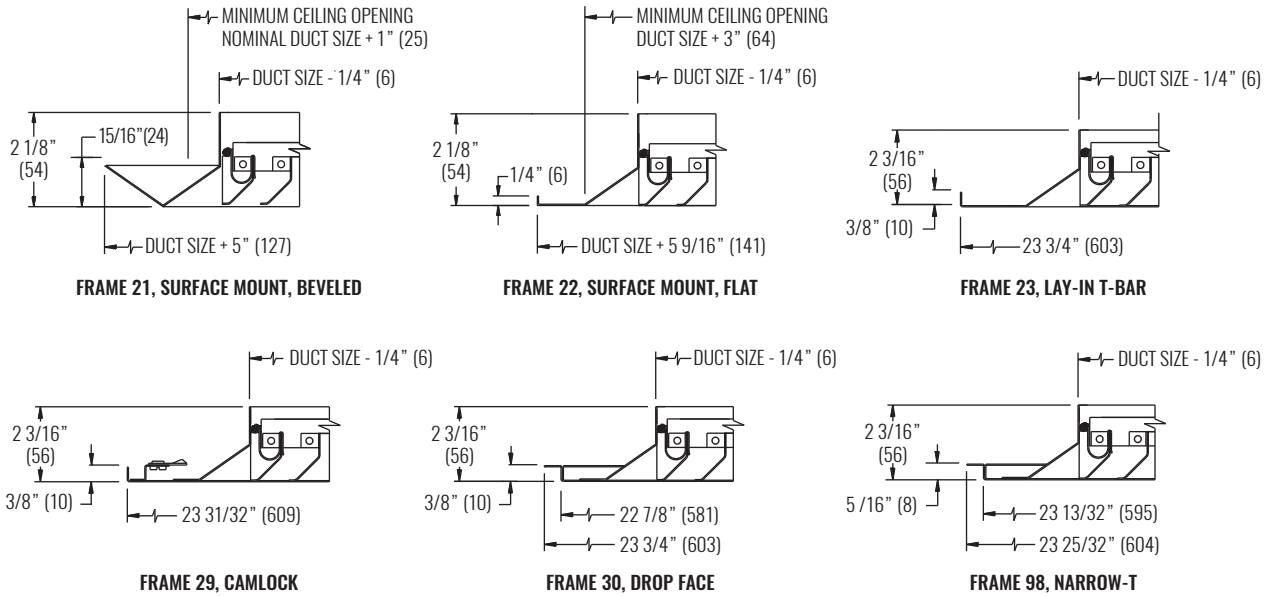
- OBD1240 - Steel, square or rectangular damper
- 5OBD1240 - Aluminum, square or rectangular damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Damper not included in configuration code.

¹ Inlet sizes 22"x22" and 24"x24" are only available for F21 and F22.

**WEB SEARCH:** 1240 or 51240

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).
 A 24"x24" panel with F23 is not available with 22"x22" or 24"x24" inlet sizes.
 A 24"x24" panel with F29, F30, or F98 is not available with 20"x20", 22"x22", or 24"x24" inlet sizes.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"x6"	75 - 225	8 - 14	250 - 400	14 - 18	300	22	0.30
	8"x8"	133 - 340	10 - 17	356 - 590	17 - 22	420	26	0.30
	10"x10"	208 - 470	13 - 20	486 - 764	20 - 25	560	30	0.32
	12"x12"	300 - 600	16 - 22	650 - 1000	23 - 29	750	35	0.34
	14"x14"	408 - 750	18 - 25	800 - 1225	26 - 32	900	39	0.35
	16"x16"	533 - 889	21 - 27	970 - 1600	28 - 36	1100	43	0.37
	18"x18"	675 - 1050	23 - 29	1125 - 1800	30 - 38	1280	46	0.38
	20"x20"	556 - 1210	21 - 31	1290 - 2100	32 - 41	1400	48	0.39
	22"x22"	336 - 1344	12 - 33	1500 - 2353	35 - 44	1700	53	0.40
24"x24"	400 - 1550	18 - 36	1600 - 2680	36 - 47	1900	56	0.41	

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 1240P - Steel, modular core ceiling diffuser with perforated face and architectural frame, square inlet

FEATURES

- Hand-removable modular cores
- Variety of discharge air patterns

INLET SIZES

- Square: 6"x6" - 20"x20" (2" increments)

FRAME STYLES

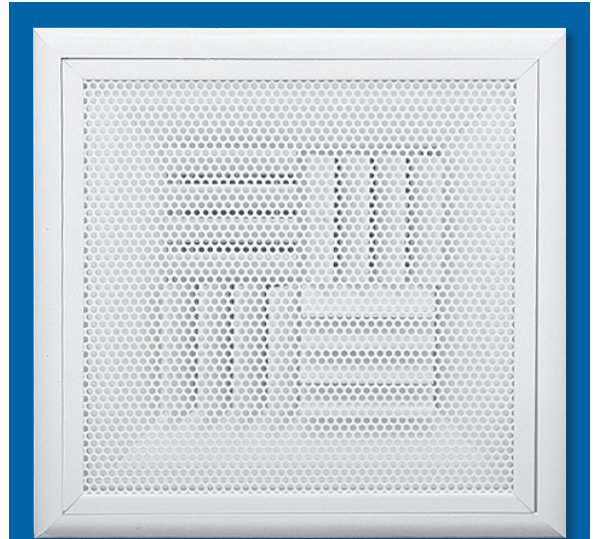
- F22 - Surface mount
- F23 - Lay-in T-bar
- F29 - Camlock
- F30 - Drop face
- F98 - Narrow-T

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBD1240 - Steel, square or rectangular damper
- 5OBD1240 - Aluminum, square or rectangular damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

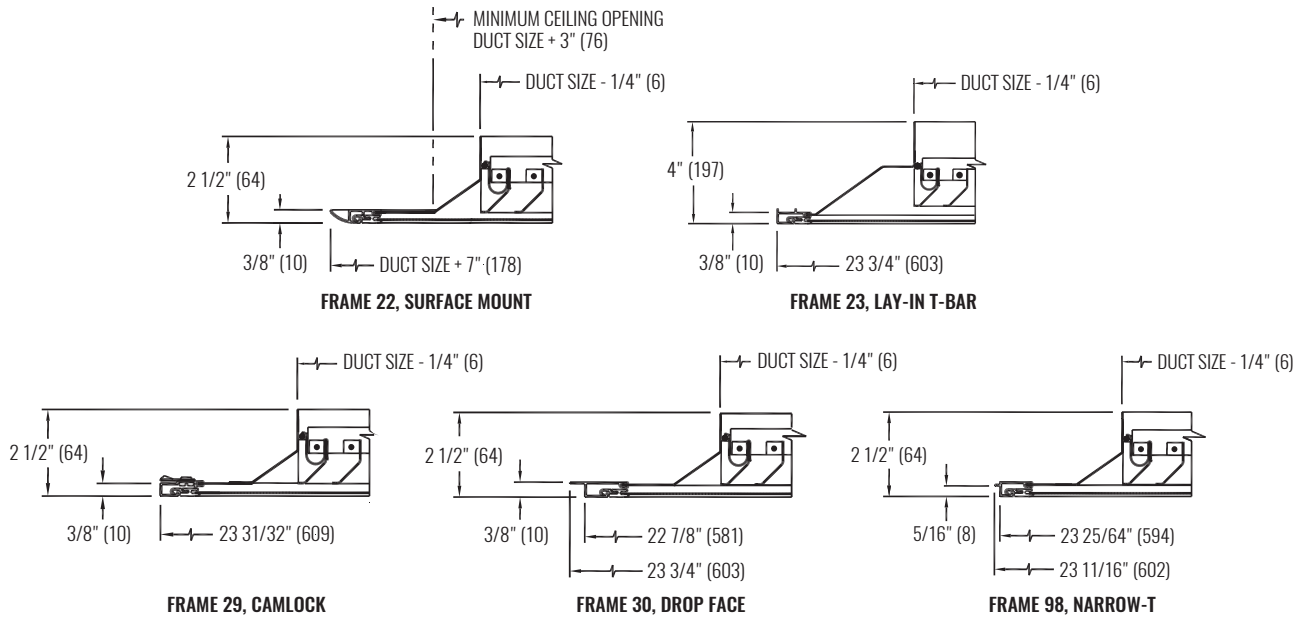


1240P

Modular Core Diffuser, Perforated Face, Architectural Frame



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). A 24"x24" panel with F23, F29, F30, or F98 is not available with a 20"x20" inlet size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"x6"	75 - 185	3 - 7	200 - 300	8 - 10	225	19	N/A
	8"x8"	133 - 267	4 - 8	311 - 444	9 - 12	325	23	N/A
	10"x10"	208 - 390	5 - 9	417 - 625	10 - 14	475	28	N/A
	12"x12"	250 - 530	5 - 11	600 - 800	12 - 16	600	32	N/A
	14"x14"	272 - 625	5 - 11	681 - 1030	12 - 18	800	37	N/A
	16"x16"	356 - 770	5 - 12	810 - 1244	12 - 19	920	39	N/A
	18"x18"	415 - 900	6 - 12	970 - 1450	13 - 19	1150	44	N/A
	20"x20"	556 - 1050	7 - 13	1111 - 1667	13 - 20	1200	45	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 51240P - Aluminum, modular core diffuser with perforated face and architectural frame, square inlet

FEATURES

- Hand-removable modular cores
- Variety of discharge air patterns

INLET SIZES

- Square: 6"x6" - 20"x20" (2" increments)

FRAME STYLES

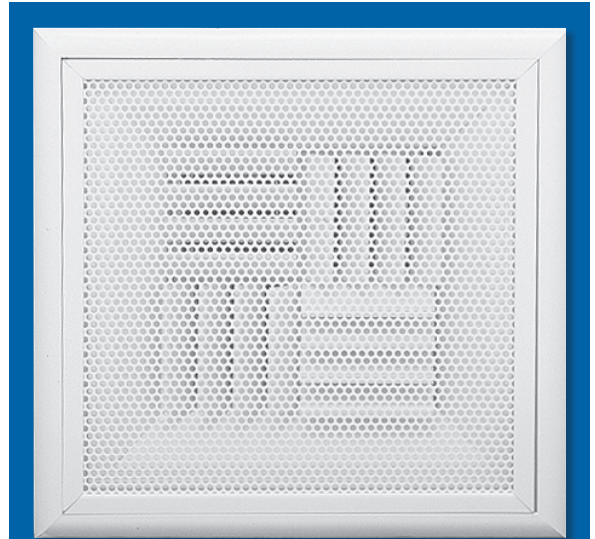
- F22 - Surface mount
- F23 - Lay-in T-bar
- F29 - Camlock
- F30 - Drop face
- F98 - Narrow-T

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBD1240 - Steel, square or rectangular damper
- 5OBD1240 - Aluminum, square or rectangular damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter



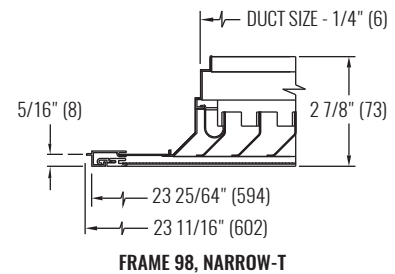
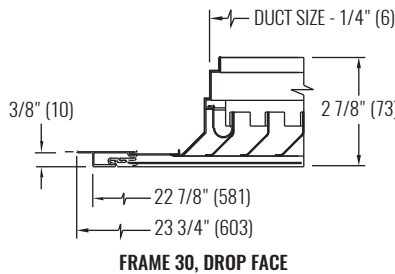
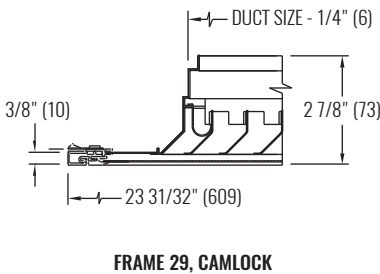
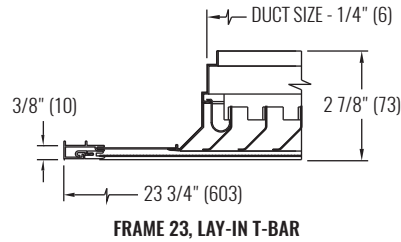
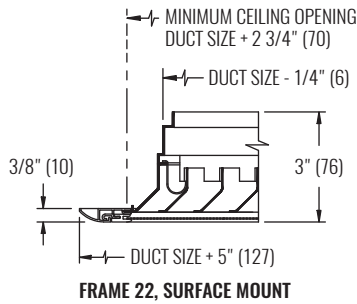
51240P

Modular Core Diffuser, Perforated Face, Architectural Frame



DIFFUSERS | MODULAR CORE

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). A 24"x24" panel with F23, F29, F30, or F98 is not available with a 20"x20" inlet size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"x6"	75 - 185	3 - 7	200 - 300	8 - 10	225	19	N/A
	8"x8"	133 - 267	4 - 8	311 - 444	9 - 12	325	23	N/A
	10"x10"	208 - 390	5 - 9	417 - 625	10 - 14	475	28	N/A
	12"x12"	250 - 530	5 - 11	600 - 800	12 - 16	600	32	N/A
	14"x14"	272 - 625	5 - 11	681 - 1030	12 - 18	800	37	N/A
	16"x16"	356 - 770	5 - 12	810 - 1244	12 - 19	920	39	N/A
	18"x18"	415 - 900	6 - 12	970 - 1450	13 - 19	1150	44	N/A
	20"x20"	556 - 1050	7 - 13	1111 - 1667	13 - 20	1200	45	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

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MODEL

- 1240PE - Steel, modular core diffuser with perforated face and single border, square inlet

FEATURES

- Hand-removable modular cores
- Variety of discharge air patterns

INLET SIZES

- Square: 6"x6" - 18"x18" (2" increments)

FRAME STYLES

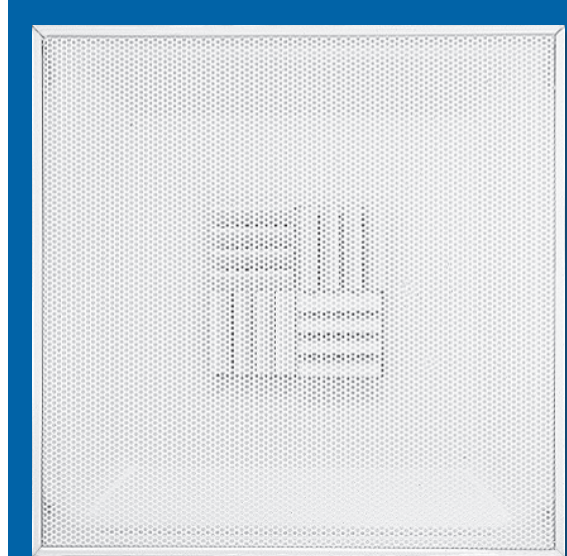
- F23 - Lay-in T-bar
- F98 - Narrow-T

PANEL SIZES

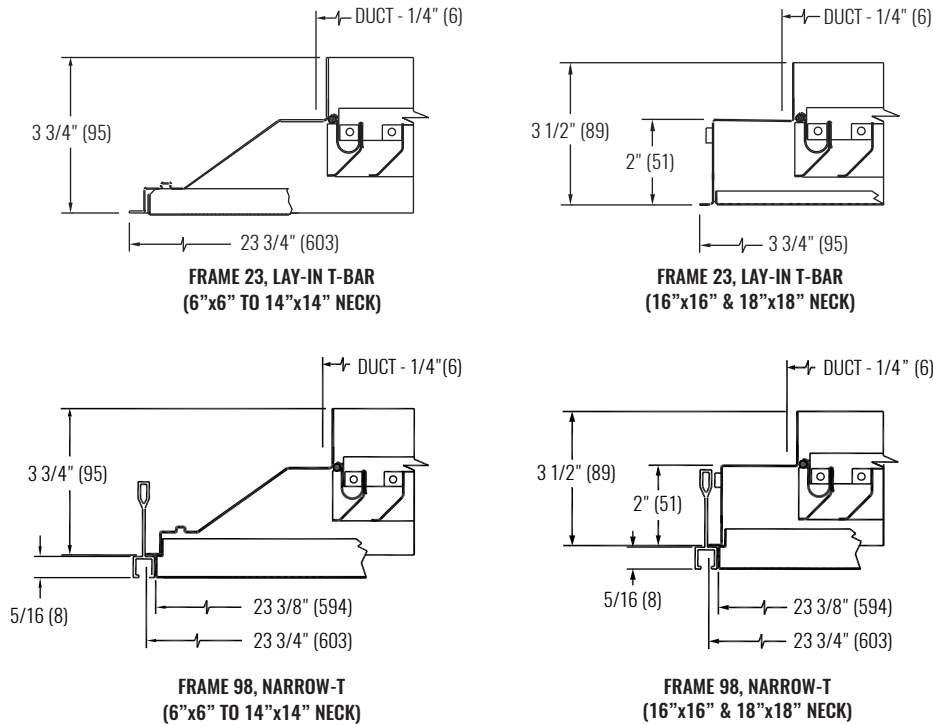
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- OBD1240 - Steel, square or rectangular damper
- 5OBD1240 - Aluminum, square or rectangular damper
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - HORIZONTAL THROW				DESIGN		
PANEL	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
24"x24"	6"x6"	75 - 185	3 - 7	200 - 300	8 - 10	225	19	N/A
	8"x8"	133 - 267	4 - 8	311 - 444	9 - 12	325	23	N/A
	10"x10"	208 - 390	5 - 9	417 - 625	10 - 14	475	28	N/A
	12"x12"	250 - 530	5 - 11	600 - 800	12 - 16	600	32	N/A
	14"x14"	272 - 625	5 - 11	681 - 1030	12 - 18	800	37	N/A
	16"x16"	356 - 770	5 - 12	810 - 1244	12 - 19	920	39	N/A
	18"x18"	415 - 900	6 - 12	970 - 1450	13 - 19	1150	44	N/A
	20"x20"	556 - 1050	7 - 13	1111 - 1667	13 - 20	1200	45	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- DFL - Aluminum, architectural linear slot diffuser

FEATURES

- Slot widths of 1" (DFL10), 1 1/2" (DFL15), 2" (DFL20), 2 1/2" (DFL25), and 3" (DFL30)
- Maximum single section length of 12 ft; able to be joined to create long, continuous runs
- Integral pattern controllers constructed on 24" centers
- Pattern controllers adjustable through face of diffuser

SLOTS

- Slot Quantity: 1 or 2 ¹
- Slot Width: 1" to 3" ¹
- Slot Length: 12" - 999" (1/8" increments)

FRAME STYLES

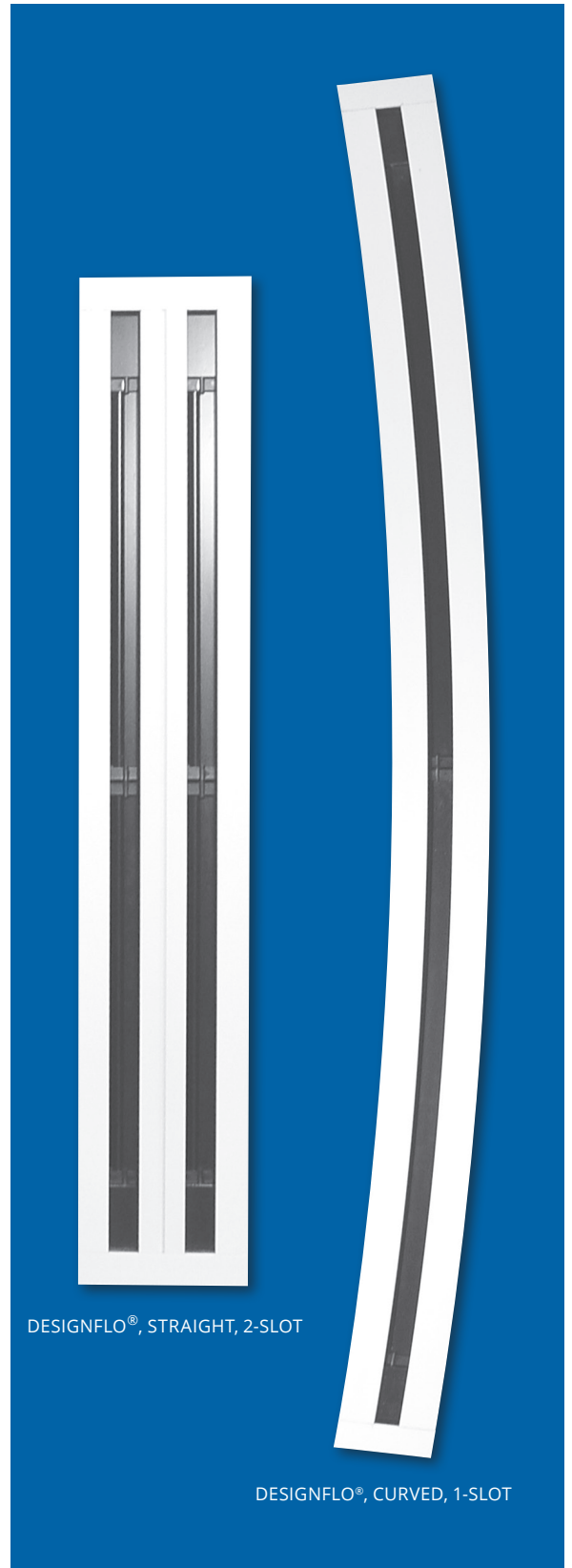
- AA - No flange, both sides
- CC - 3/16" flange, both sides
- AC - No flange left, 3/16" flange right
- CA - 3/16" flange left, no flange right
- AD - No flange left, 5/8" step-down flange right
- DA - 5/8" step-down flange left, no flange right
- BB - Flanges that accept a finishing compound on both sides
- EE - Beveled frame for mud-in
- FF - 1/2" flange, both sides

COMPATIBLE OPTIONS AND ACCESSORIES

- Custom curving, available on request
- Mounting brackets
- Spline support
- Upper support hanger
- DFMC - Mitered corner for DFL
- DFC - 4-leg junction
- DFT - 3-leg junction
- DFBO - Blankoff strip
- DFRH - Steel return hood
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES:

- ¹ See website for availability.



DESIGNFLO®, STRAIGHT, 2-SLOT

DESIGNFLO®, CURVED, 1-SLOT

DIFFUSERS | LINEAR SLOT

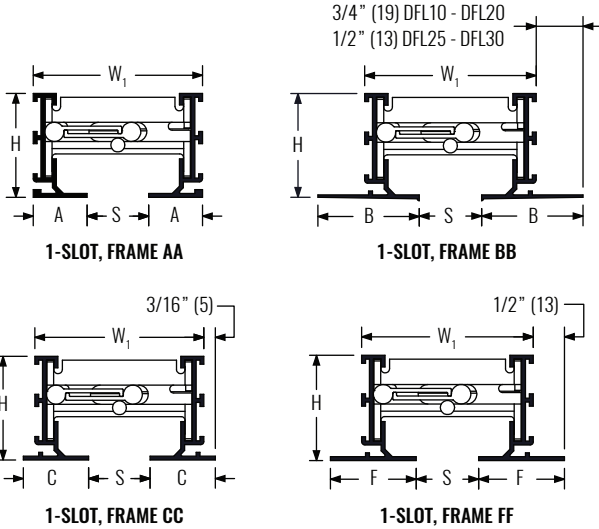
DESIGNFLO (DFL)

WEB SEARCH: DESIGNFLO or DFL

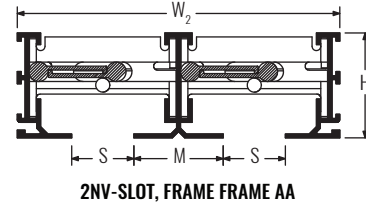


DIMENSIONAL DATA - FRAME STYLES

1-SLOT CROSS FRAME STYLES

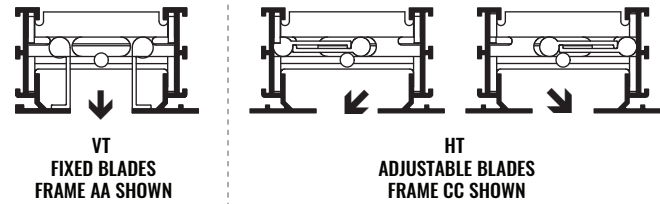


2-SLOT CROSS FRAME STYLES



2NV-SLOT, FRAME FRAME AA

PATTERN CONTROLLERS



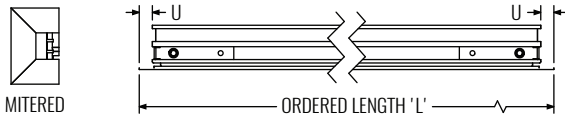
VT
FIXED BLADES
FRAME AA SHOWN

HT
ADJUSTABLE BLADES
FRAME CC SHOWN

DIMENSIONS

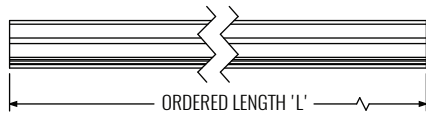
SLOT WIDTH	LEG DIMENSIONS				HEIGHT	1-SLOT	2-SLOT		
	S	A	B	C			F	STACK W ₁	M
1"		7/8" (22)	1 5/8" (41)	1 1/16" (27)	1 3/8" (35)	1 11/16" (43)	2 3/4" (70)	1 7/16" (37)	5 3/16" (132)
1.5"		1 1/8" (29)	1 7/8" (48)	1 5/16" (33)	1 5/8" (41)	1 11/16" (43)	3 3/4" (95)	1 15/16" (49)	7 3/16" (183)
2"		1 3/8" (35)	2 1/8" (54)	1 9/16" (40)	1 7/8" (48)	1 11/16" (43)	4 3/4" (121)	2 7/16" (62)	9 3/16" (233)

END BORDERS

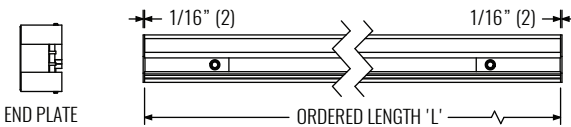


END BORDER 01
MITERED / MITERED
UNIT LENGTH = ORDERED LENGTH (L)
USED WITH FRAMES AA, BB, CC, AND FF
1-SLOT ONLY

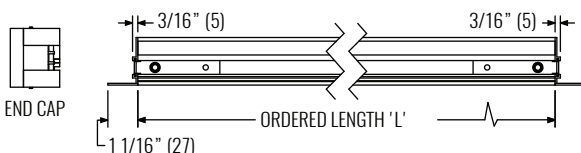
FRAME (U)	STACK SIZE
AA	L
CC	L - 3/8" (10)
FF	L - 1" (25)



END BORDER 03
BUTT CUT / BUTT CUT
UNIT LENGTH = ORDERED LENGTH (L)
USED WITH ALL FRAMES AND SLOTS



END BORDER 04
END PLATE / END PLATE
UNIT LENGTH = ORDERED LENGTH (L) + 1/8" (3)
USED WITH ALL FRAMES AND SLOTS



END BORDER 06
END CAP / END CAP
UNIT LENGTH = ORDERED LENGTH (L) + 2 1/8" (54)
USED WITH ALL FRAMES AND SLOTS, EXCEPT AD, DA, BB AND EE
NOTE: VERTICAL LEG OF END CAP ADDS 3/16" (5) TO EACH END OF THE STACK HEAD IN THE "L" DIMENSION.

NOTES: Dimensions in parentheses are millimeters (mm).

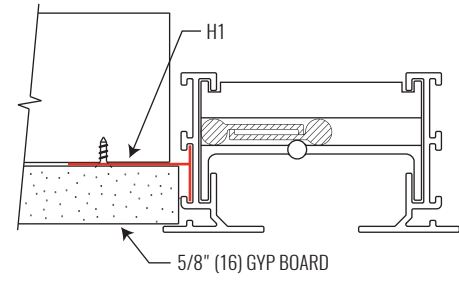
MOUNTING OPTIONS

BRACKETS AND SUPPORTS

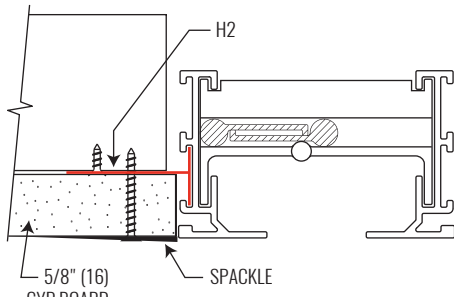
THERE ARE FOUR CEILING CLIPS (H1 - H4), THREE WALL CLIPS (W2 - W4), ONE SUSPENSION CLIP (US), AND ONE T-BAR ATTACHMENT CLIP (SS). SS AND US CLIPS CAN BE USED WITH ALL FRAMES, EXCEPT FOR FRAME BB.

USE THE CLIP WITH FRAMES AS FOLLOWS:

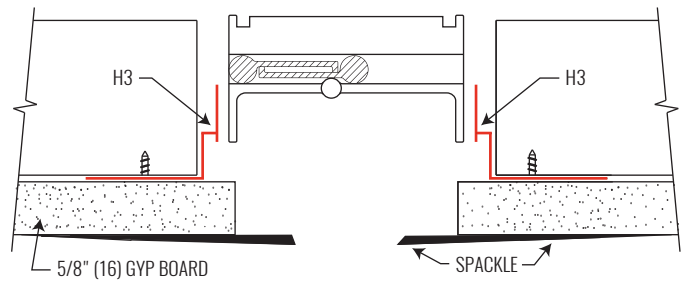
- H1:** USED WITH FRAME TYPE C, F, OR B.
- H2:** USED WITH FRAME TYPE A OR C.
- H3:** USED WITH FRAME BB OR THE A SIDE OF FRAME AD.
YOU MAY HAVE AN H3 CLIP WITH A FRAME AA IF THE PATTERN IS 'VT'.
- H4:** USED WITH FRAME TYPE D ONLY.
- W2:** USED WITH FRAME TYPE A, C, D, OR F.
- W3:** USED WITH FRAME TYPE A OR D AND CANNOT BE USED WITH THE OPTIONAL PLENUM.
- CF:** USED WITH FRAME TYPE F OR B ONLY AND MUST BE USED WITH CONCEALED MOUNT DFP (TYPE F DFP).



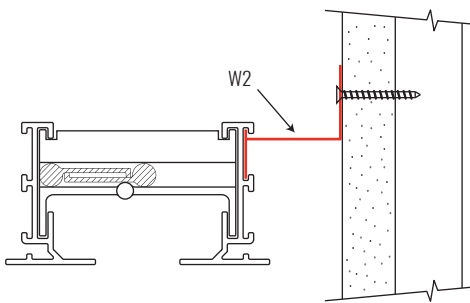
H1 - HARD CEILING BRACKET



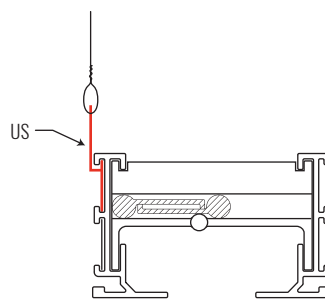
H2 - HARD CEILING BRACKET



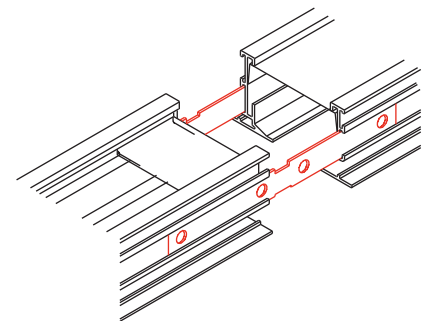
H3 - HARD CEILING BRACKET



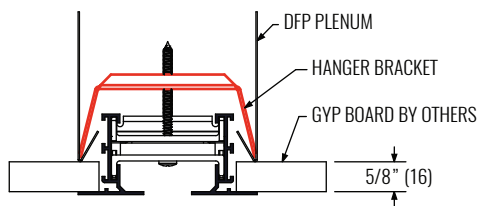
W2 - WALL MOUNT



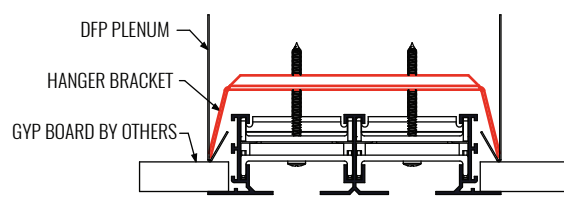
US - UPPER SUPPORT HANGER



SS - SPLINE SUPPORT BRACKET



**1-SLOT, CONCEALED MOUNT
FRAME FF SHOWN**

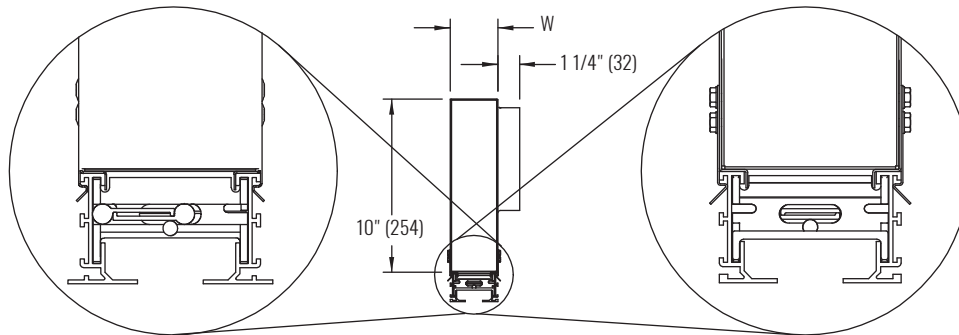
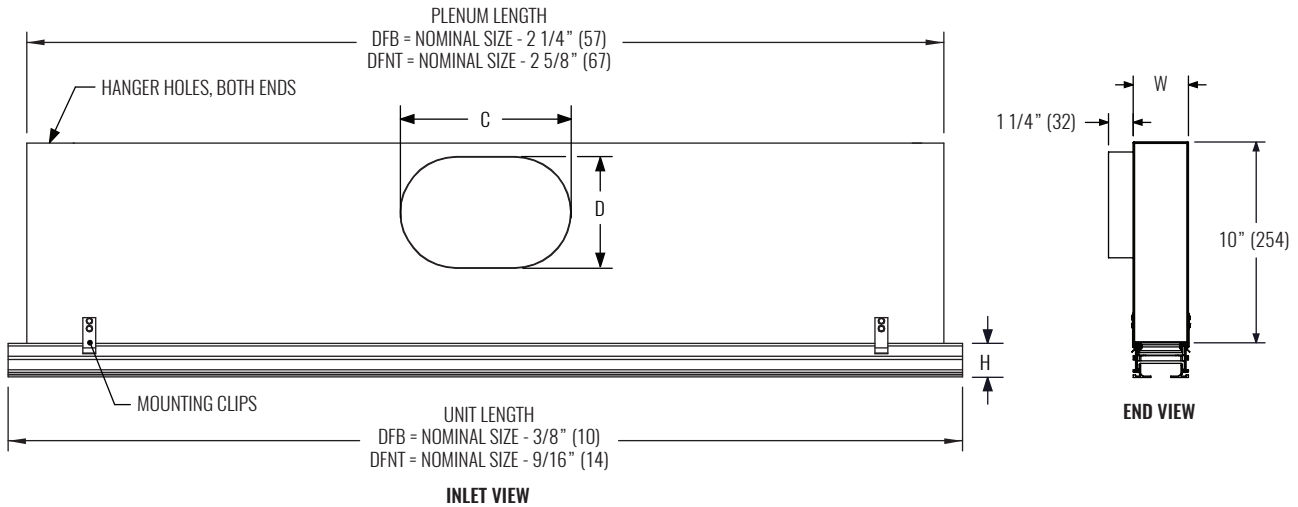


**2NV-SLOT, CONCEALED MOUNT
FRAME FF SHOWN**

NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONAL DATA - DFNT / DFB

COMBINATION DFL AND PLENUM



DIMENSIONS		
INLET	C	D
6" OVAL	6 1/4" (159)	5 1/4" (133)
8" OVAL	9 3/8" (238)	5 1/4" (133)
10" OVAL	12 1/2" (318)	5 1/4" (133)
12" OVAL	14 1/8" (359)	7 7/8" (200)

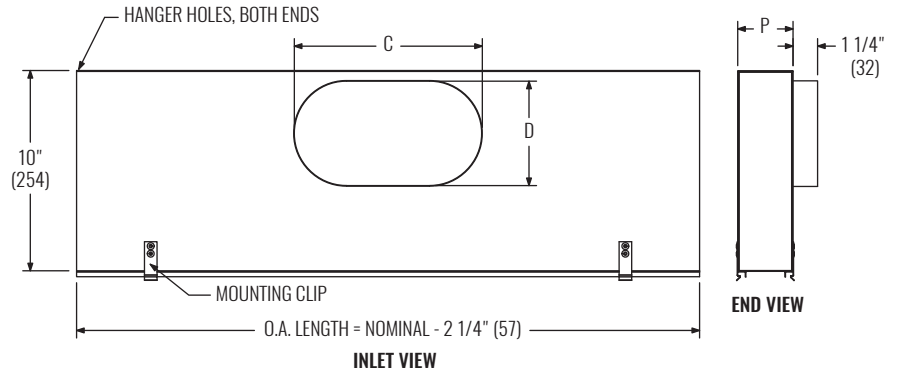
NOTES: Dimensions in parentheses are millimeters (mm). DFB length sized to lay into standard 15/16" tee bar ceiling grid. DFNT length sized to suspend between narrow 9/16" tee bar ceiling grid. Frame AC is also available with DFB.

DIMENSIONS											
MODEL	SLOT WIDTH	H	WIDTH			LENGTH					
			1-SLOT	2-SLOTS		DFB			DFNT		
				1 W	2NV W (DFB ONLY)	2AB W	NOMINAL SIZE	UNIT LENGTH	PLENUM LENGTH	NOMINAL SIZE	UNIT LENGTH
DFB10	1" (25)	1 11/16" (43)	2 3/4" (70)	5 3/16" (132)	6 1/16" (154)	24" (610)	23 5/8" (600)	21 3/4" (552)	24" (610)	23 7/16" (595)	21 3/8" (543)
	1 1/2" (38)	1 11/16" (43)	3 3/4" (95)	7 3/16" (183)	8 1/16" (205)	36" (914)	35 5/8" (905)	33 3/4" (857)			
	2" (51)	1 11/16" (43)	4 3/4" (121)	9 3/16" (233)	10 1/16" (256)	48" (1219)	47 5/8" (1210)	45 3/4" (1162)			
DFNT10	2 1/2" (64)	2 5/16" (59)	5 3/4" (146)	11 3/16" (284)	12 1/16" (306)	60" (1524)	59 5/8" (1514)	57 3/4" (1467)	60" (1524)	59 7/16" (1510)	57 3/8" (1457)
	3" (76)	2 5/16" (59)	6 3/4" (171)	13 3/16" (335)	14 1/16" (357)						

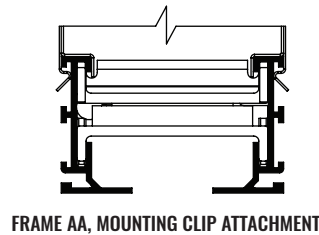
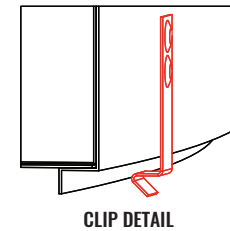
NOTES: Dimensions in parentheses are millimeters (mm). End caps are not insulated. Quadrant damper adds 6" to inlet depth. Plenum is galvanized steel, mill finish. Insulation is 1/4" (6) 2 lb. single density.

DIMENSIONAL DATA - DFP
MOUNTING TYPE S - CLIPS

DIMENSIONS		
INLET	C	D
6" OVAL	6 1/4" (159)	5 1/4" (133)
8" OVAL	9 3/8" (238)	5 1/4" (133)
10" OVAL	12 1/2" (318)	5 1/4" (133)
12" OVAL	14 1/8" (359)	7 7/8" (200)



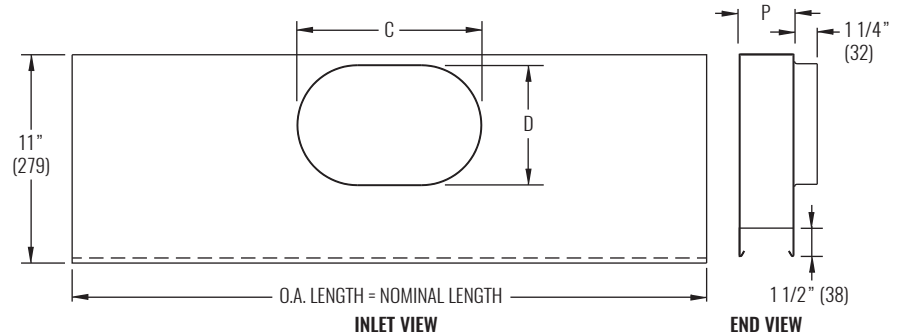
MODEL	DFP TYPE S	
	ONE SLOT	2 NV
	PLENUM WIDTH P	PLENUM WIDTH P
DFP 10	2 3/4" (70)	5 3/16" (132)
DFP 15	3 3/4" (95)	7 3/16" (183)
DFP 20	4 3/4" (121)	9 3/16" (233)


FRAME AA, MOUNTING CLIP ATTACHMENT

CLIP DETAIL

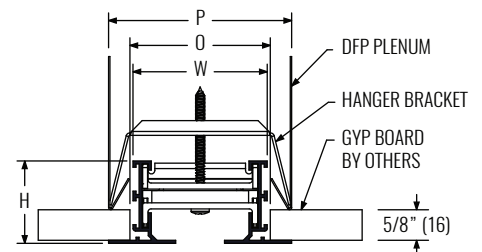
NOTES: Dimensions in parentheses are millimeters (mm). Type S plenum compatible with DFL with H clips, W clips, US, or SS fastening; not compatible with DFL with concealed fastening.

MOUNTING TYPE F - CONCEALED

DIMENSIONS		
INLET	C	D
6" OVAL	6 1/4" (159)	5 1/4" (133)
8" OVAL	9 3/8" (238)	5 1/4" (133)
10" OVAL	12 1/2" (318)	5 1/4" (133)
12" OVAL	14 1/8" (359)	7 7/8" (200)



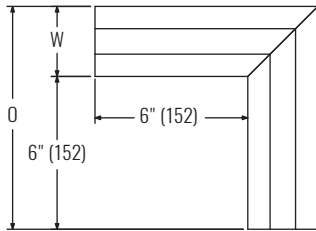
MODEL	HEIGHT H	DFP TYPE F					
		1-SLOT			2 NV-SLOT		
		PLENUM WIDTH P	STACK WIDTH	CEILING OPENING	PLENUM WIDTH P	STACK WIDTH	CEILING OPENING
DFP 10	1 11/16" (43)	3 3/4" (95)	2 3/4" (70)	3" (76)	6 3/16" (157)	5 3/16" (132)	5 1/2" (140)
DFP 15	1 11/16" (43)	4 3/4" (121)	3 3/4" (95)	4" (102)	8 3/16" (208)	7 3/16" (183)	7 1/2" (191)
DFP 20	1 11/16" (43)	5 3/4" (146)	4 3/4" (121)	5" (127)	10 3/16" (258)	9 3/16" (233)	9 1/2" (241)


FRAME FF, 1-SLOT, END VIEW

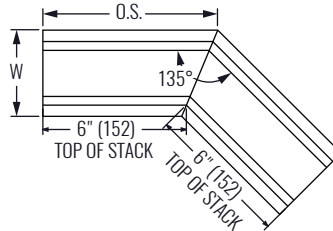
NOTES: Dimensions in parentheses are millimeters (mm). Type F plenum compatible with DFL with concealed fastening; not compatible with DFL with H clips, W clips, US, or SS fastening.

DIMENSIONAL DATA - DFMC

MITERED CORNERS



DFMC - 90°



DFMC - 135°

NOTES: Miters are inactive and come standard with butt cut ends, no blades, and with blank offs installed at factory. 2 slot miter available in "NV" only. Custom angles are available upon request. Dimensions in parentheses are millimeters (mm).

DFMC DIMENSIONS

SLOT QTY	SLOT WIDTH	FRAME AA			FRAME BB			FRAME CC		
		W	O.S. (135°)	O (90°)	W	O.S. (135°)	O (90°)	W	O.S. (135°)	O (90°)
1 SLOT	1" (25)	2 3/4" (70)	7 1/8" (181)	8 3/4" (222)	4 1/4" (108)	7 3/4" (197)	10 1/4" (260)	3 1/8" (79)	7 5/16" (186)	9 1/8" (232)
	1 1/2" (38)	3 3/4" (95)	7 9/16" (192)	9 3/4" (248)	5 1/4" (133)	8 3/16" (208)	11 1/4" (286)	4 1/8" (105)	7 11/16" (195)	10 1/8" (257)
	2" (51)	4 3/4" (121)	8" (203)	10 3/4" (273)	6 1/4" (159)	8 9/16" (217)	12 1/4" (311)	5 1/8" (130)	8 1/8" (206)	11 1/8" (283)
2 SLOTS	1" (25)	5 3/16" (132)	8 1/8" (206)	11 3/16" (284)	6 11/16" (170)	8 3/4" (222)	12 11/16" (322)	5 9/16" (141)	8 5/16" (211)	11 9/16" (294)
	1 1/2" (38)	7 3/16" (183)	9" (229)	13 3/16" (335)	8 11/16" (221)	9 9/16" (243)	14 11/16" (373)	7 9/16" (116)	9 1/8" (232)	13 9/16" (344)
	2" (51)	9 3/16" (233)	9 13/16" (249)	15 3/16" (386)	10 11/16" (271)	10 7/16" (265)	16 11/16" (424)	9 9/16" (243)	10" (254)	15 9/16" (395)

PERFORMANCE DATA

SIZE			PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH						DESIGN		
SLOT WIDTH	SLOT QTY	INLET SIZE	NC (< 25)			NC (25 - 40)			CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
			CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)			
1"	1	6"	60 - 145	12 - 23	-	150 - 285	23 - 32	-	180	25	0.30
1"	1	8"	70 - 150	14 - 23	-	160 - 280	24 - 32	-	190	26	0.30
1"	1	10"	85 - 170	17 - 25	-	180 - 290	26 - 33	-	200	28	0.30
1"	2	8"	120 - 250	17 - 30	12 - 21	260 - 485	31 - 42	22 - 30	320	44	0.22
1"	2	10"	130 - 260	19 - 31	13 - 22	270 - 505	31 - 43	22 - 30	330	46	0.24
1"	2	12"	140 - 270	20 - 31	14 - 22	280 - 510	32 - 43	23 - 31	340	47	0.26
1.5"	1	8"	110 - 230	18 - 28	-	240 - 410	29 - 38	-	270	38	0.38
1.5"	1	10"	140 - 240	22 - 29	-	250 - 450	30 - 40	-	300	42	0.39
2"	1	8"	120 - 240	18 - 26	-	250 - 445	27 - 35	-	315	44	0.35
2"	1	10"	150 - 270	21 - 28	-	280 - 465	28 - 36	-	325	45	0.37
2"	1	12"	175 - 290	22 - 29	-	300 - 500	29 - 38	-	340	47	0.39
3"	1	10"	170 - 210	18 - 20	-	220 - 375	21 - 27	-	335	47	0.38

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 1900 - Aluminum, linear slot diffuser

FEATURES

- Extruded aluminum construction
- Numerous frame styles available for varying applications
- Slots reveal black adjustable, removable blades which snap into several positions for airflow volume and pattern control
- Linear appearance complements ceilings and walls with continuous architectural lines
- Matching plenum (1900BOOT) and mitered corner (1900MC) models
- Sections range from 12" to 72" long; units longer than 72" will consist of sections butted together for continuous runs
- Inactive sections may be blanked-off using optional blank-off strips, which ship separately in 72" lengths to be field cut

SLOTS

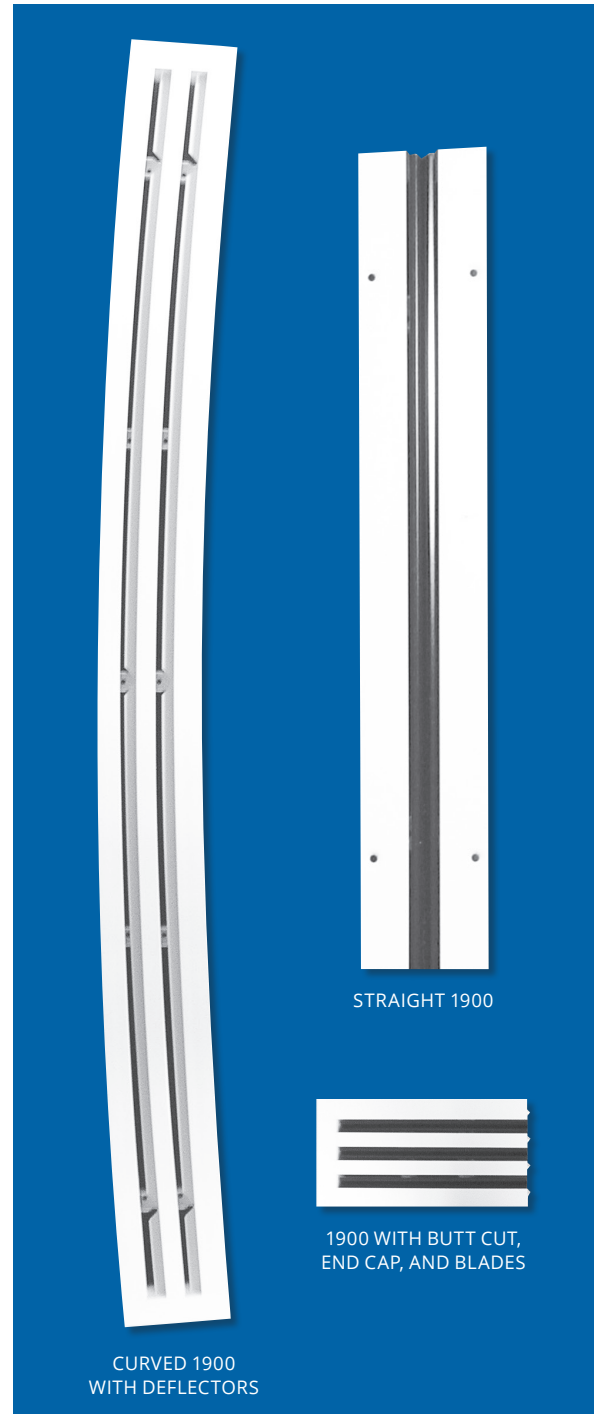
- Slot Quantity: 1 - 8 ¹
- Slot Width:
 - Model 1950 = 1/2"
 - Model 1910 = 1"
 - Model 1920 = 2" ¹
 - Model 1975 = 3/4"
 - Model 1915 = 1 1/2"
- Slot Length: 12" - 999" (1/8" increments)

FRAME STYLES

- A - T-bar ceiling mount ²
- B - Surface mount with screw fastening
- C - Surface mount with concealed fastening
- D - Plaster tile mount with concealed fastening
- E - Surface mount with sub-frame and concealed fastening
- F - Plaster and tile mount with concealed flush face
- I - Spline ceiling
- J - Surface mount with no screw holes
- K - Narrow-T ceiling mount
- L - Exposed spiral duct mount
- M - Mud-in mount with concealed flush face
- N - TechZone 9/16" Narrow-T tegular ceiling mount ³
- S - TechZone standard T-bar ceiling mount ³

COMPATIBLE OPTIONS AND ACCESSORIES

- Removable blades
- Matching plenum (1900BOOT)
- Matching mitered corner model (1900MC)
- End caps, end plate, or butt cut end borders
- Custom curving available upon request ⁴
- BOS - Blank-off strip



NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

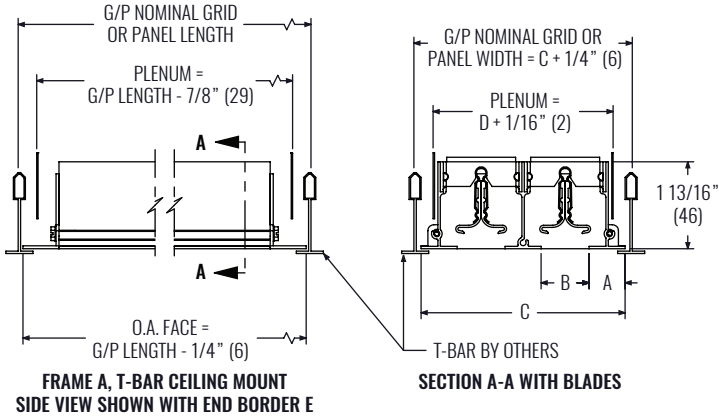
- ¹ Slot quantities 5, 6, 7, and 8 not available with 1 1/2" or 2" slot widths.
- ² Frame A automatically undersized, regardless of end border, to fit nominal grid size. Ordered length = nominal grid length.
- ³ TechZone™ is a registered trademark of Armstrong®.
- ⁴ Curved units do not have adjustable deflection.

WEB SEARCH: 1900



DIMENSIONAL DATA - FRAME STYLES

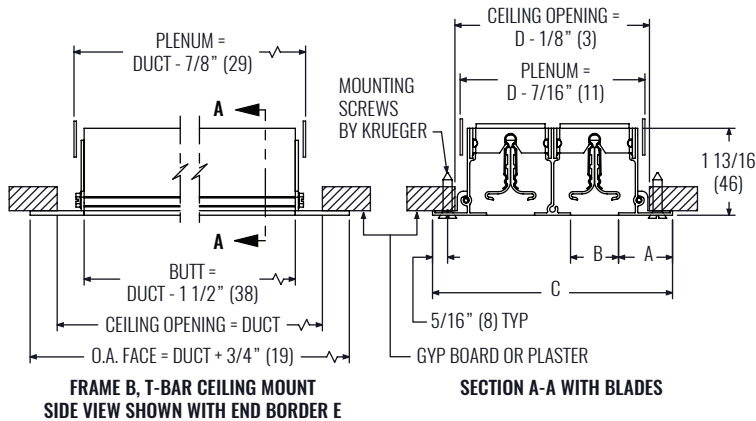
FRAME STYLE A



NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONS - FRAME A, T-BAR CEILING MOUNT				
SLOT	A	B	C	D
1975 (3/4" SLOT WIDTH)				
1	3/4" (19)	3/4" (19)	2 1/4" (57)	1 5/8" (41)
2	3/4" (19)	3/4" (19)	3 3/4" (95)	3 1/8" (79)
3	3/4" (19)	3/4" (19)	5 1/4" (133)	4 5/8" (117)
4	3/4" (19)	3/4" (19)	6 3/4" (171)	6 1/8" (156)
1910 (1" SLOT WIDTH)				
1	3/4" (19)	1" (25)	2 1/2" (64)	1 7/8" (48)
2	3/4" (19)	1" (25)	4 1/4" (108)	3 5/8" (92)
3	3/4" (19)	1" (25)	6" (152)	5 3/8" (137)
4	3/4" (19)	1" (25)	7 3/4" (197)	7 1/8" (181)

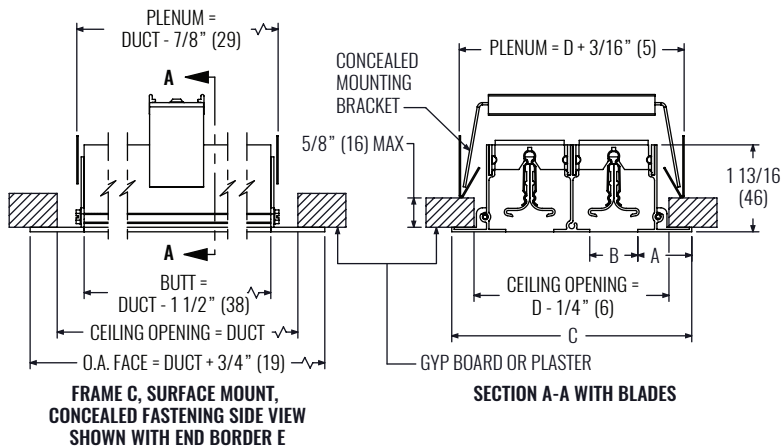
FRAME STYLE B



NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONS - FRAME B, T-BAR CEILING MOUNT				
SLOT	A	B	C	D
1975 (3/4" SLOT WIDTH)				
1	1 1/8" (29)	3/4" (19)	3" (76)	2 1/8" (54)
2	1 1/8" (29)	3/4" (19)	4 1/2" (114)	3 5/8" (92)
3	1 1/8" (29)	3/4" (19)	6" (152)	5 1/8" (130)
4	1 1/8" (29)	3/4" (19)	7 1/2" (191)	6 5/8" (168)
1910 (1" SLOT WIDTH)				
1	1 1/8" (29)	1" (25)	3 1/4" (83)	2 3/8" (60)
2	1 1/8" (29)	1" (25)	5" (127)	4 1/8" (105)
3	1 1/8" (29)	1" (25)	6 3/4" (171)	5 7/8" (149)
4	1 1/8" (29)	1" (25)	8 1/2" (216)	7 5/8" (194)

FRAME STYLE C

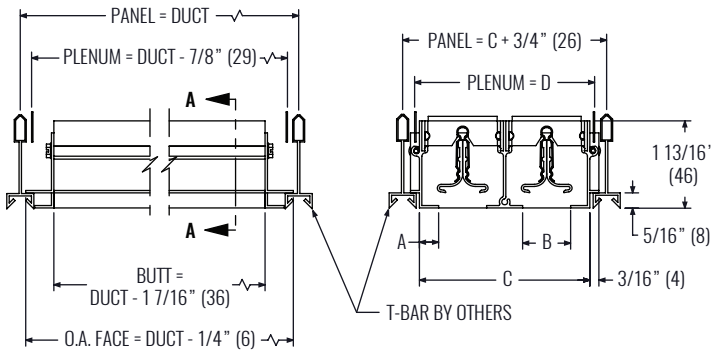


NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONS - FRAME C, SURFACE MOUNT, CONCEALED FASTENING				
SLOT	A	B	C	D
1975 (3/4" SLOT WIDTH)				
1	1 1/8" (29)	3/4" (19)	3" (76)	2 1/4" (57)
2	1 1/8" (29)	3/4" (19)	4 1/2" (114)	3 3/4" (95)
3	1 1/8" (29)	3/4" (19)	6" (152)	5 1/4" (133)
4	1 1/8" (29)	3/4" (19)	7 1/2" (191)	6 3/4" (171)
1910 (1" SLOT WIDTH)				
1	1 1/8" (29)	1" (25)	3 1/4" (83)	2 1/2" (64)
2	1 1/8" (29)	1" (25)	5" (127)	4 1/4" (108)
3	1 1/8" (29)	1" (25)	6 3/4" (171)	6" (152)
4	1 1/8" (29)	1" (25)	8 1/2" (216)	7 3/4" (197)

DIMENSIONAL DATA - FRAME STYLES

FRAME STYLE K



**FRAME K, NARROW-T CEILING MOUNT
SIDE VIEW SHOWN WITH END BORDER E**

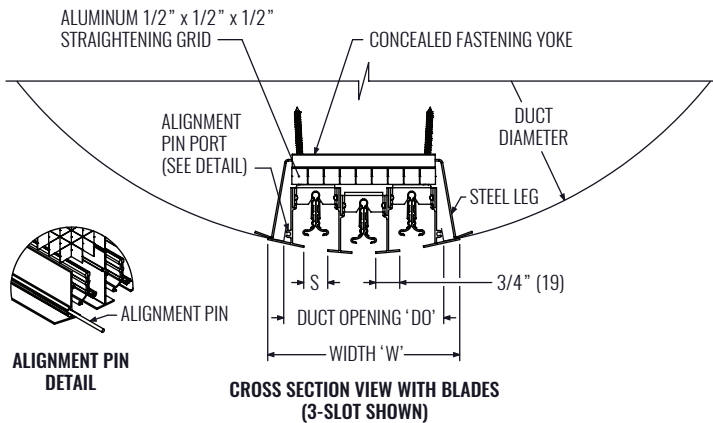
SECTION A-A WITH BLADES

NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONS - FRAME K, NARROW-T CEILING MOUNT

SLOT	A	B	C	D
1975 (3/4" SLOT WIDTH)				
1	13/32" (10)	3/4" (19)	1 9/16" (40)	1 11/16" (43)
2	13/32" (10)	3/4" (19)	3 1/16" (78)	3 3/16" (81)
3	13/32" (10)	3/4" (19)	4 9/16" (116)	4 11/16" (119)
4	13/32" (10)	3/4" (19)	6 1/16" (154)	6 3/16" (157)
1910 (1" SLOT WIDTH)				
1	13/32" (10)	1" (25)	1 13/16" (46)	1 15/16" (49)
2	13/32" (10)	1" (25)	3 9/16" (90)	3 11/16" (94)
3	13/32" (10)	1" (25)	5 5/16" (135)	5 7/16" (138)
4	13/32" (10)	1" (25)	7 1/16" (179)	7 3/16" (183)

FRAME STYLE L



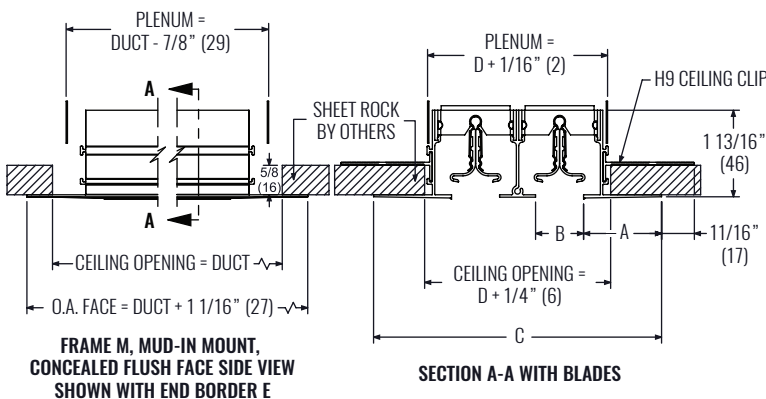
**CROSS SECTION VIEW WITH BLADES
(3-SLOT SHOWN)**

NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONS - FRAME L, EXPOSED SPIRAL DUCT

SLOTS	DUCT DIAMETER Ø	W	DO	S
1975 (3/4" SLOT WIDTH)				
1	10" (254) - 24" (610)	3" (76)	2" (51)	0.75" (19)
2	12" (305) - 24" (610)	4.5" (114)	3.5" (89)	0.75" (19)
3	14" (356) - 30" (762)	6" (152)	5" (127)	0.75" (19)
4	20" (508) - 30" (762)	7.5" (191)	6.5" (165)	0.75" (19)
1910 (1" SLOT WIDTH)				
1	10" (254) - 24" (610)	3.25" (83)	2.25" (57)	0.75" (19)
2	12" (305) - 28" (711)	5" (127)	4" (102)	0.75" (19)
3	16" (406) - 32" (813)	6.75" (171)	5.75" (146)	0.75" (19)
4	26" (660) - 48" (1219)	8.5" (216)	7.5" (191)	0.75" (19)

FRAME STYLE M



**FRAME M, MUD-IN MOUNT,
CONCEALED FLUSH FACE SIDE VIEW
SHOWN WITH END BORDER E**

SECTION A-A WITH BLADES

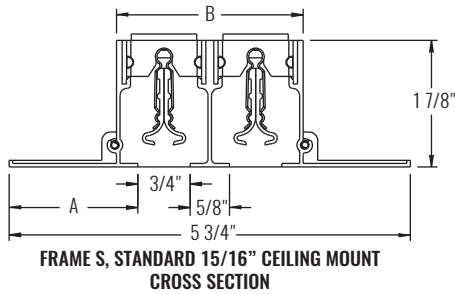
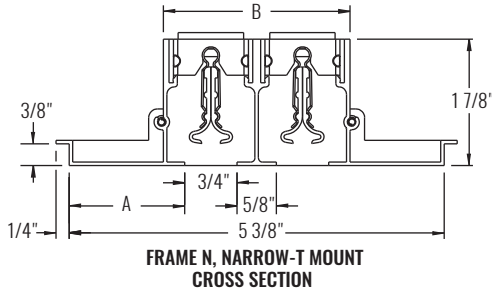
NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONS - FRAME K, NARROW-T CEILING MOUNT

SLOT	A	B	C	D
1975 (3/4" SLOT WIDTH)				
1	1 5/8" (41)	3/4" (19)	4" (102)	1 5/8" (41)
2	1 5/8" (41)	3/4" (19)	5 1/2" (140)	3 1/8" (79)
3	1 5/8" (41)	3/4" (19)	7" (178)	4 5/8" (117)
4	1 5/8" (41)	3/4" (19)	8 1/2" (216)	6 1/8" (156)
1910 (1" SLOT WIDTH)				
1	1 5/8" (41)	1" (25)	4 1/4" (108)	1 7/8" (48)
2	1 5/8" (41)	1" (25)	6" (152)	3 5/8" (92)
3	1 5/8" (41)	1" (25)	7 3/4" (197)	5 3/8" (137)
4	1 5/8" (41)	1" (25)	9 1/2" (241)	7 1/8" (181)

DIMENSIONAL DATA - FRAME STYLES AND END BORDERS

TECHZONE™ FRAMES N and S



DIMENSIONS - TECHZONE™ FRAME N, NARROW-T CEILING

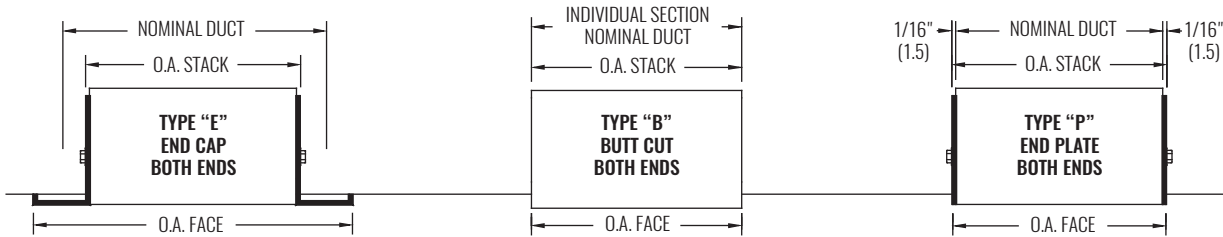
SLOT	A	B
1920 (3/4" SLOT WIDTH)		
1	2 3/8" (60)	1 3/8" (35)
2	1 5/8" (41)	2 5/8" (67)
3	1" (25)	4" (102)
4	3/8" (10)	5 1/4" (133)

DIMENSIONS - TECHZONE™ FRAME S, STANDARD 15/16" CEILING

SLOT	A	B
1975 (3/4" SLOT WIDTH)		
1	2 1/2" (64)	1 3/8" (35)
2	1 7/8" (48)	2 5/8" (67)
3	1 1/4" (32)	4" (102)
4	1/2" (13)	5 1/4" (133)

NOTES: Dimensions in parentheses are millimeters (mm). Frames designed to fit into Armstrong TECHZONE Standard Ceiling Grid Systems. Available in 3 and 4-slot configurations. Available in 30", 36", 48", 60", 72", and 96" nominal lengths. TECHZONE™ is a registered trademark of Armstrong®.

END BORDERS



DIMENSIONS - LENGTHS

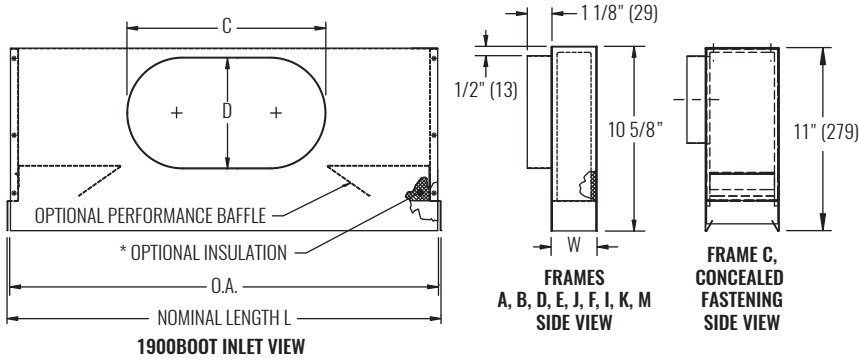
FRAME STYLE	END TYPE "E"		END TYPE "B"		END TYPE "P"	
	OA STACK ¹	OA FACE	OA STACK	OA FACE	OA STACK ¹	OA FACE
A	G/P - 1 5/8" (41)	G/P - 1/4" (6)	G/P - 1/4" (6)	G/P - 1/4" (6)	G/P - 1/2" (13)	G/P - 1/2" (13)
B	D - 1 3/8" (35)	D + 3/4" (19)	DUCT	DUCT	D + 1/8" (3)	D + 1/8" (3)
C	D - 1 3/8" (35)	D + 3/4" (19)	DUCT	DUCT	D + 1/8" (3)	D + 1/8" (3)
K	D - 17/16" (27)	D - 1/4" (6)	DUCT	DUCT	N/A	N/A
L	D - 1 3/8" (35)	D + 3/4" (19)	DUCT	DUCT	N/A	N/A
M	D - 1 13/16" (21)	D + 1 1/16" (2)	DUCT	DUCT	N/A	N/A
N	N/A	N/A	N/A	N/A	D - 3/4" (19)	D - 5/8" (16)
S	D - 1 1/2" (38)	D - 3/16" (5)	N/A	N/A	N/A	N/A

NOTES: Dimensions in parentheses are millimeters (mm). 'D' is nominal duct length. 'OA' is overall length. 'G/P' is grid/panel size.

¹ Screw used to secure end caps and plates has head which sticks out approximately 1/8" further than stack. To ensure a proper fit, opening or duct must be a minimum of 1/4" larger than stack when these end borders are used. For end plate end borders this screw sticks out past the face, resulting in an overall footprint larger than the OA face.

DIMENSIONAL DATA - 1900BOOT

1900BOOT



OVAL INLET DIMENSIONS		
INLET SIZE	C	D
6" OVAL	6 1/4" (159)	5 1/4" (133)
8" OVAL	9 3/8" (238)	5 1/4" (133)
10" OVAL	12 1/2" (318)	5 1/4" (133)
12" OVAL	14 1/8" (359)	7 7/8" (200)
TECHZONE™ 12" OVAL	15 5/8" (397)	5 1/4" (133)

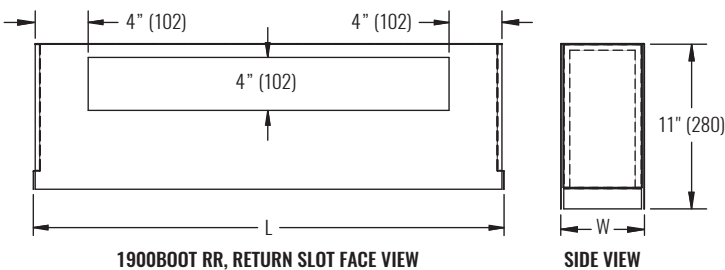
AVAILABLE INLET SIZES		
MODEL	NOMINAL LENGTH L	NOMINAL INLET
1950, 1975, 1910, 1915, 1920	24" (610), 36" (914)	6", 8", 10"
	48" (1219), 60" (1524), 72" (1829)	6", 8", 10", 12"

PLENUM LENGTHS		
END BORDER	O.A. FOR FRAME STYLES	
	A, B, C, F, I, J, AND K	D AND E
"E" (2) END CAPS	L - 7/8" (22)	L - 1/4" (6)
"B" (2) BUTT CUT	L - 1/4" (6)	L - 1/4" (6)
"P" (2) END PLATES	L - 1/4" (6)	L - 1/4" (6)

WIDTH DIMENSIONS				
MODEL	1-SLOT	2-SLOTS	3-SLOTS	4-SLOTS
W DIMENSION FOR FRAMES A, B, F, I, J, AND K				
1975	1 11/16" (43)	3 3/16" (81)	4 11/16" (119)	6 3/16" (157)
1910	1 15/16" (49)	3 11/16" (94)	5 7/16" (138)	7 3/16" (183)
W DIMENSION FOR FRAMES C, D, AND E				
1975	2 7/16" (62)	3 15/16" (100)	5 7/16" (138)	6 15/16" (176)
1910	2 11/16" (68)	4 7/16" (113)	6 3/16" (157)	7 15/16" (202)
W DIMENSION FOR TECHZONE™ FRAMES N AND S				
1975	1 7/16" (37)	2 11/16" (68)	4 1/8" (105)	5 7/16" (138)

NOTES: Dimensions in parentheses are millimeters (mm).

1900BOOT RETURN SLOT PLENUM

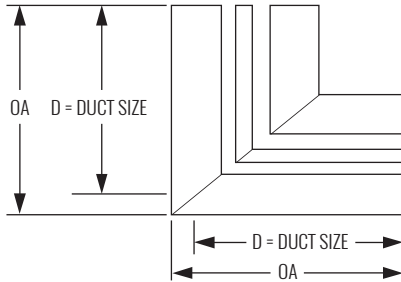


DIMENSIONS - AVAILABLE WIDTHS	
NOMINAL LENGTH	L
24" (610)	23 1/8" (587)
30" (762)	29 1/8" (740)
36" (914)	35 1/8" (892)
48" (1219)	47 1/8" (1199)
60" (1524)	59 1/8" (1502)
72" (1829)	71 1/8" (1807)

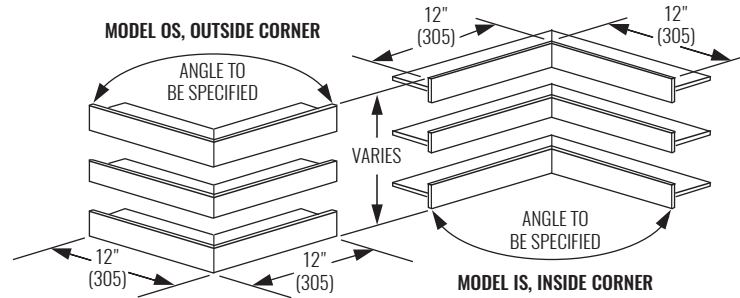
NOTES: Dimensions in parentheses are millimeters (mm). 24 gauge galvanized steel construction. Mill finish is standard. End caps are not insulated (standard). Insulation not available with inlet size RR.

DIMENSIONAL DATA

MITERED CORNERS



STANDARD FLAT FACE (SD) MITER FOR CEILING MOUNT



OUTSIDE (OS) AND INSIDE (IS) CORNER FOR WALL MOUNT

DIMENSIONS - OA BY FRAME

SLOT QTY	A	B, J	C, D, E	F, I, K	M	N, S	NOMINAL DUCT D
1	12 5/16" (313)	12 7/16" (316)	12 3/8" (315)	12" (305)	13 3/16" (335)	14 3/16" (361)	12"
2	12 5/16" (313)	12 7/16" (316)	12 3/8" (315)	12" (305)	13 3/16" (335)	13 9/16" (345)	12"
3	24 5/16" (618)	24 7/16" (621)	24 3/8" (620)	24" (610)	25 3/16" (640)	24 7/8" (632)	24"
4-8	24 5/16" (618)	24 7/16" (621)	24 3/8" (620)	24" (610)	25 3/16" (640)	24 3/16" (615)	24"

NOTES: Dimensions in parentheses are millimeters (mm). Table applies to standard flat face (SD) mount only. OA dimensions measured at face, except for frame N which is measured flange to flange. For some frames (F, I, K, and the sub-frame of D), the face is not the widest part of the unit, therefore the OA dimension is not indicative of overall footprint. For Frame F, I and K, OA= nominal duct. Miters are inactive and come standard with butt cut ends, no blades, and with blank offs installed at factory. Custom angles are available upon request.

PERFORMANCE DATA

SIZE			PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH				DESIGN		
SLOT WIDTH	SLOT QTY	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
			CFM	THROW (ft)	CFM	THROW (ft)			
3/4"	2	6"	70 - 125	13 - 17	135 - 235	18 - 24	165	23	0.25
3/4"	2	8"	100 - 150	16 - 19	165 - 285	20 - 26	190	26	0.25
3/4"	2	10"	120 - 165	17 - 20	180 - 315	21 - 28	220	31	0.25
3/4"	3	8"	95 - 195	15 - 22	210 - 360	23 - 30	250	35	0.25
3/4"	3	10"	100 - 220	16 - 23	235 - 410	24 - 31	280	39	0.25
3/4"	4	10"	110 - 240	13 - 24	260 - 440	25 - 33	300	42	0.25
1"	2	6"	70 - 125	10 - 17	135 - 235	18 - 24	160	22	0.25
1"	2	8"	80 - 150	12 - 19	160 - 275	20 - 26	190	26	0.25
1"	2	10"	90 - 165	13 - 20	180 - 330	21 - 28	220	31	0.25
1"	3	10"	100 - 215	12 - 23	230 - 400	24 - 31	280	39	0.25
1"	4	10"	110 - 260	11 - 25	280 - 510	26 - 35	335	47	0.25
1"	4	12"	130 - 310	13 - 27	330 - 600	28 - 38	390	54	0.25

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes situations which do not result in ADPI>80% and are therefore not recommended.

MODEL

- 1900SQS - Linear slot square supply diffuser
- 1900SQR - Linear slot square return diffuser
- 1900SQSI - Linear slot insulated supply diffuser

FEATURES

- Aluminum diffuser with steel backpan, round inlet
- 1 - 4 slots available in 3/4" and 1" slot widths
- Blades are removable to allow diffuser to serve as a low-pressure-drop return
- Airflow pattern is adjustable 1, 2, 3, and 4-way
- Ceiling tile center receptacle (ceiling tile by others)

INLET SIZES

- Round: 8" - 14" (2" increments)

SLOTS

- Slot Quantity: 1 - 4
- Slot Width: 3/4", 1"

FRAME STYLES

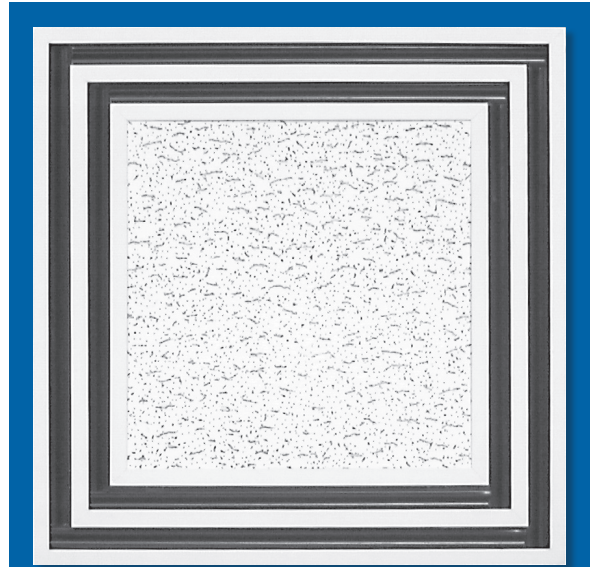
- F23 - Lay-in T-bar
- F98 - Narrow T-bar ceiling mount

PANEL SIZES

- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)
- HCF23 - Steel, hard ceiling frame (F23 only)
- 5HCF23 - Aluminum, hard ceiling frame (F23 only)

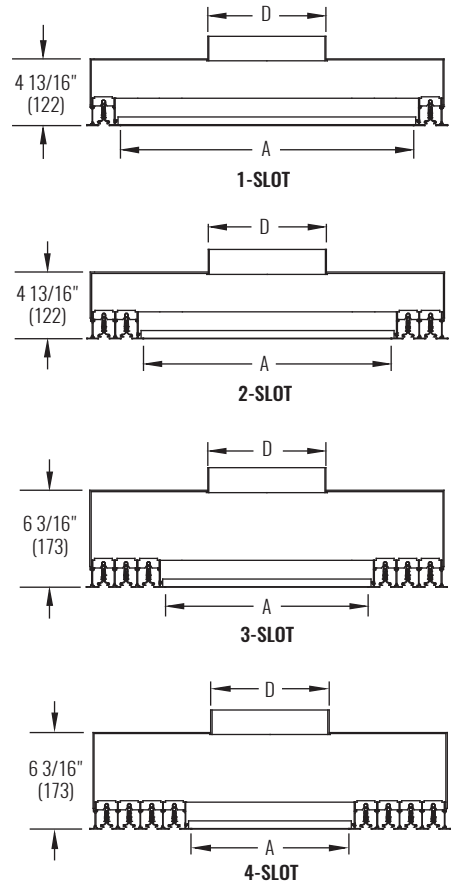
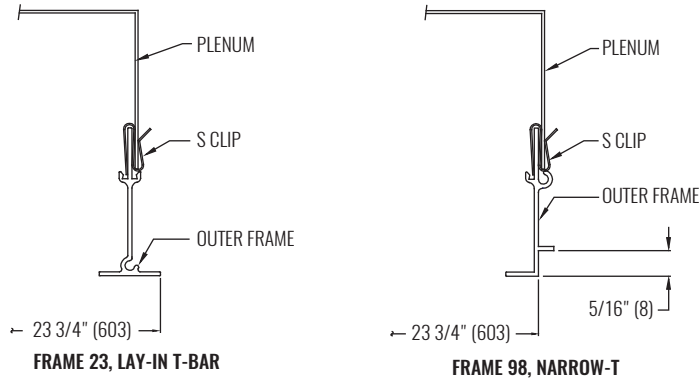


1900SQ SERIES

Linear Slot Diffuser, Square



DIMENSIONAL DATA



DIMENSIONS					
NUMBER OF SLOTS	SLOT WIDTHS	FRAME 23		FRAME 98	
		A	D	A	D
1	3/4" (19)	19 1/4" (489)	8" (203)	19 9/16" (497)	8" (203)
2		16 1/4" (413)	10" (254)	16 9/16" (421)	10" (254)
3		13 1/4" (337)	12" (305)	13 9/16" (344)	12" (305)
4		10 1/4" (260)	14" (356)	10 9/16" (268)	14" (356)
1	1" (25)	18 3/4" (476)	8" (203)	19 1/16" (484)	8" (203)
2		15 1/4" (387)	10" (254)	15 9/16" (395)	10" (254)
3		11 3/4" (298)	12" (305)	12 1/16" (306)	12" (305)
4		8 1/4" (210)	14" (356)	8 9/16" (217)	14" (356)

NOTES: Dimensions in parentheses are millimeters (mm)

PERFORMANCE AND DESIGN DATA

SIZE			PERFORMANCE - HORIZONTAL THROW				DESIGN		
SLOT WIDTH	SLOT QUANTITY	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
			CFM	THROW (ft)	CFM	THROW (ft)			
3/4"	2	8"	70 - 290	5 - 12	300 - 384	12 - 14	325	23	0.40
3/4"	2	10"	109 - 295	7 - 12	300 - 480	12 - 16	350	24	0.40
3/4"	3	12"	157 - 393	8 - 14	471 - 628	15 - 18	470	28	0.40
1"	1	8"	35 - 195	4 - 14	205 - 314	14 - 17	220	19	0.30
1"	2	8"	70 - 297	6 - 17	305 - 419	17 - 20	350	24	0.32
1"	2	10"	109 - 300	9 - 17	327 - 491	17 - 21	375	25	0.32
1"	4	10"	136 - 432	8 - 19	395 - 600	19 - 24	450	27	0.33
1"	4	12"	157 - 416	9 - 20	444 - 680	20 - 25	500	29	0.34
1"	4	14"	160 - 460	10 - 21	480 - 748	21 - 26	540	30	0.35

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI.

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MODEL

- PTBS - Steel plenum slot diffuser with gasketed aluminum blade

FEATURES

- Combination Slot diffuser with plenum for lay-in T-bar ceiling systems
- Gasketed aluminum straight blade is fully adjustable from horizontal through vertical discharge and can be locked into place with blade screws
- Double metal thickness at slot face for rigidity and straightness

PLENUM INLET SIZES

- Round: 5" ¹
- Oval: 6" - 12" (2" increments) ²

SLOTS

- Slot Quantity: 1 - 4
- Slot Width: 3/4", 1", 1 1/2"
- Slot Length: 24", 36", 48", 60"

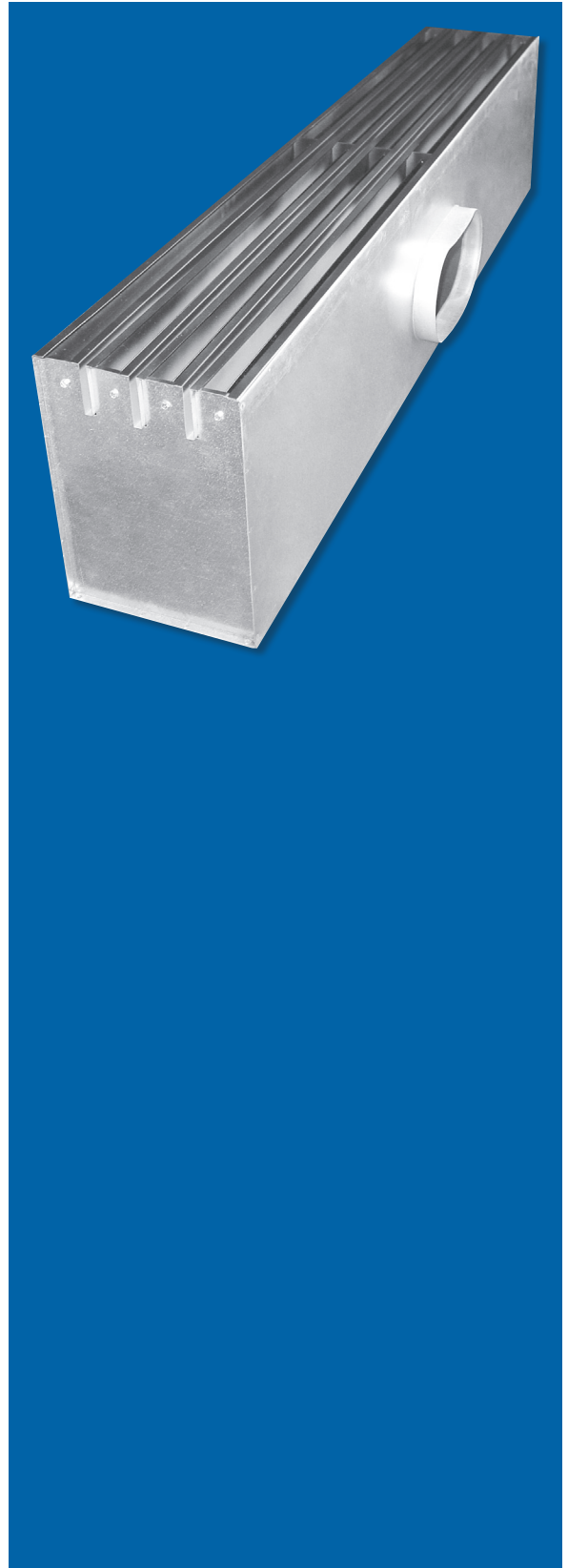
COMPATIBLE OPTIONS AND ACCESSORIES

- Quadrant damper
- Cable operated damper
- Various insulation options
- HCFPTBS - Plaster frame
- Center notch and mounting tab mounting options
- Factory installed T-bar options

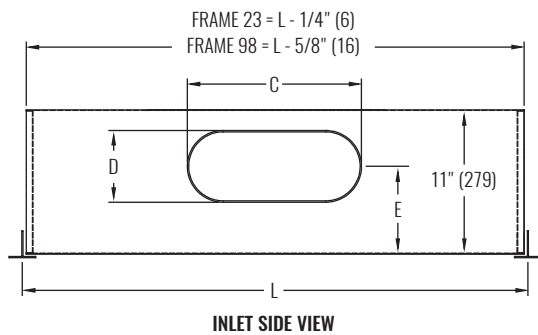
NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ 5" round inlet not available on 48" or 60" units.

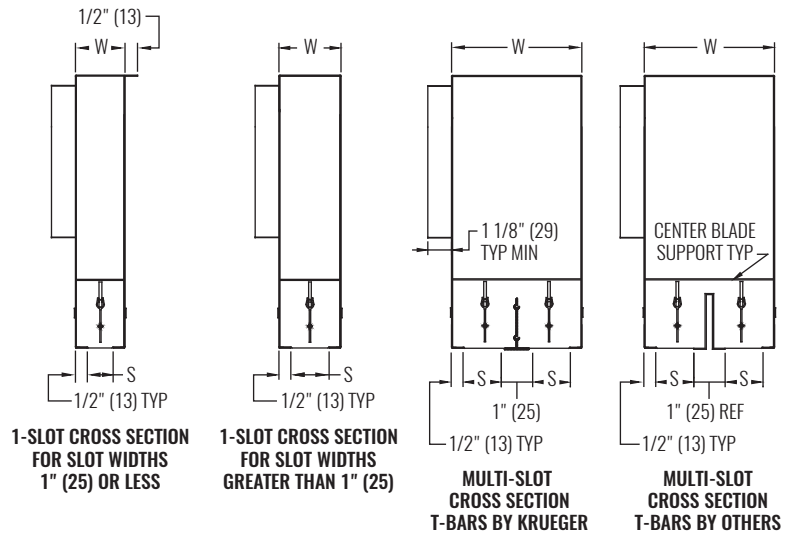
² 12" oval inlet only available on 48" and 60" lengths.



DIMENSIONAL DATA



DIMENSIONS				
INLET	C	D	E	L
5" (127) ROUND	4 7/8" (124)	4 7/8" (124)	6 3/16" (157)	24" - 36" (610 - 914)
6" (152) OVAL	6 1/4" (159)	5 1/4" (133)	6 3/8" (162)	24" - 60" (610 - 1524)
8" (203) OVAL	9 3/8" (238)	5 1/4" (133)	6 3/8" (162)	24" - 60" (610 - 1524)
10" (254) OVAL	12 1/2" (318)	5 1/4" (133)	6 3/8" (162)	24" - 60" (610 - 1524)
12" (305) OVAL	15 9/16" (395)	5 1/4" (133)	6 3/8" (162)	48" - 60" (1219 - 1524)



FRAME 23 DIMENSIONS				
S	1-SLOT W	2-SLOT W	3-SLOT W	4-SLOT W
3/4" (19)	1 3/4" (44)	3 1/2" (89)	5 1/4" (133)	7" (178)
1" (25)	2" (51)	4" (102)	6" (152)	8" (203)
1 1/2" (38)	2 1/2" (64)	5" (127)	7 1/2" (191)	10" (254)

NOTES: Dimensions in parentheses are millimeters (mm). See website for Frame 98 (F98) dimensions.

PERFORMANCE AND DESIGN DATA

SIZE			PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH						DESIGN		
SLOT WIDTH	SLOT QTY	NOMINAL INLET	NC (< 25)			NC (25 - 40)			CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
			CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)			
3/4"	2	8"	60 - 125	14 - 21	10 - 15	143 - 225	22 - 28	16 - 20	150	21	0.22
1"	2	6"	75 - 155	15 - 23	11 - 16	165 - 275	24 - 30	17 - 21	200	28	0.20
1"	2	8"	90 - 195	17 - 26	12 - 18	205 - 345	26 - 34	18 - 24	230	32	0.20
1"	2	10"	120 - 225	20 - 28	14 - 20	240 - 390	28 - 36	20 - 25	300	42	0.22
1"	2	12"	125 - 280	21 - 31	15 - 22	300 - 500	32 - 41	23 - 29	340	47	0.25
1"	4	12"	190 - 410	25 - 37	18 - 26	430 - 730	38 - 50	27 - 35	500	69	0.25
1.5"	2	8"	90 - 200	15 - 26	11 - 18	215 - 360	27 - 35	19 - 25	250	35	0.22
1.5"	2	10"	100 - 230	17 - 28	12 - 20	250 - 410	29 - 37	21 - 26	300	42	0.22
1.5"	4	12"	200 - 425	24 - 38	17 - 27	450 - 740	39 - 50	28 - 35	360	50	0.23

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). ADPI based on 8ft gap between ends of diffusers. Controlled zone is 12 ft wide by indicated separation distance. Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- PTBA - Steel plenum slot diffuser with 'ice tong' type blades

FEATURES

- Combination slot diffuser with plenum for lay-in T-bar ceiling systems
- Extruded aluminum "ice tong" blades are adjustable from horizontal to vertical discharge
- Double metal thickness at slot face for rigidity and straightness

PLENUM INLET SIZES

- Round: 5" ¹
- Oval: 6" - 12" (2" increments) ²

SLOTS

- Slot Quantity: 1 - 4
- Slot Width: 3/4", 1"
- Slot Length: 24", 36", 48", 60"

COMPATIBLE OPTIONS AND ACCESSORIES

- Quadrant damper
- Cable operated damper
- HCFPTBA - Plaster frame
- Center notch and mounting tab mounting options
- Factory installed T-bar options
- Various insulation options

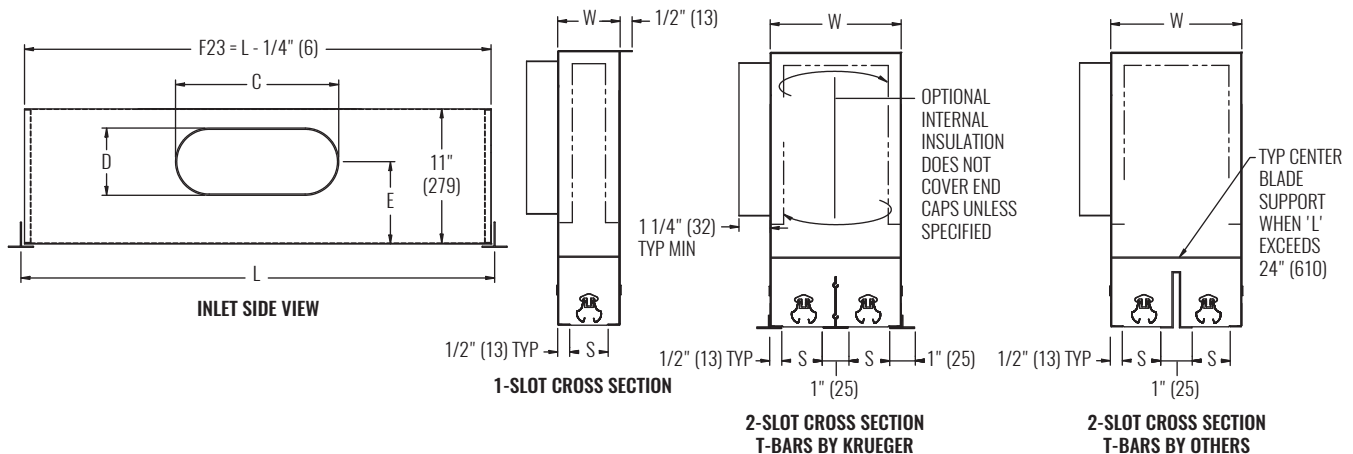
NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ 5" round inlet not available on 48" or 60" units.

² 12" oval inlet only available on 48" and 60" lengths.



DIMENSIONAL DATA



DIMENSIONS				
INLET	C	D	E	L
5" (127) ROUND	4 7/8" (124)	4 7/8" (124)	6 3/16" (157)	24" (610) - 36" (914)
6" (152) OVAL	6 1/4" (159)	5 1/4" (133)	6 3/8" (162)	24" (610) - 60" (1524)
8" (203) OVAL	9 3/8" (238)	5 1/4" (133)	6 3/8" (162)	24" (610) - 60" (1524)
10" (254) OVAL	12 1/2" (318)	5 1/4" (133)	6 3/8" (162)	24" (610) - 60" (1524)
12" (305) OVAL	15 9/16" (395)	5 1/4" (133)	6 3/8" (162)	48" (1219) - 60" (1524)

DIMENSIONS				
S	1-SLOT	2-SLOT	3-SLOT	4-SLOT
	W	W	W	W
3/4" (19)	1 3/4" (44)	3 1/2" (89)	5 1/4" (133)	7" (178)
1" (25)	2" (51)	4" (102)	6" (152)	8" (203)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE AND DESIGN DATA

SIZE			PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH						DESIGN		
SLOT WIDTH	SLOT QTY	NOMINAL INLET	NC (< 25)			NC (25 - 40)			CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
			CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)			
3/4"	2	8"	100 - 165	16 - 20	11 - 14	170 - 310	20 - 27	14 - 19	210	29	0.25
3/4"	3	10"	130 - 240	18 - 24	13 - 17	262 - 460	25 - 33	18 - 23	310	43	0.28
1"	2	6"	70 - 130	10 - 18	7 - 13	160 - 250	20 - 25	14 - 18	180	25	0.30
1"	2	8"	90 - 160	13 - 20	9 - 14	195 - 300	22 - 27	16 - 19	210	29	0.30
1"	2	10"	100 - 180	15 - 21	11 - 15	220 - 340	23 - 29	16 - 21	240	33	0.30
1"	2	12"	120 - 215	17 - 23	12 - 16	233 - 400	24 - 31	17 - 22	280	39	0.30
1"	3	8"	125 - 210	15 - 22	11 - 16	225 - 391	23 - 31	16 - 22	260	36	0.30
1"	3	10"	150 - 233	18 - 24	13 - 17	250 - 450	25 - 33	18 - 23	300	42	0.30
1"	3	12"	200 - 287	22 - 26	16 - 18	309 - 520	27 - 36	19 - 25	350	49	0.30
1"	4	8"	140 - 252	14 - 24	10 - 17	260 - 500	25 - 35	18 - 25	320	44	0.30
1"	4	10"	160 - 282	16 - 26	11 - 18	300 - 533	27 - 36	19 - 25	380	53	0.30
1"	4	12"	200 - 337	21 - 29	15 - 21	360 - 634	30 - 39	21 - 28	440	61	0.30

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). ADPI based on 8ft gap between ends of diffusers. Controlled zone is 12 ft wide by indicated separation distance. Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10-12 Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- PTBT - Steel plenum slot diffuser with fixed blades

FEATURES

- Combination slot diffuser with plenum for lay-in T-bar ceiling systems
- Left or right inlet orientation, changeable in the field
- Extruded aluminum curved blades
- 1-way or 2-way¹ fixed horizontal discharge air patterns
- Removable inlet collar for field retrofit

PLENUM INLET SIZES

- Oval: 6" - 10" (2" increments)

SLOTS

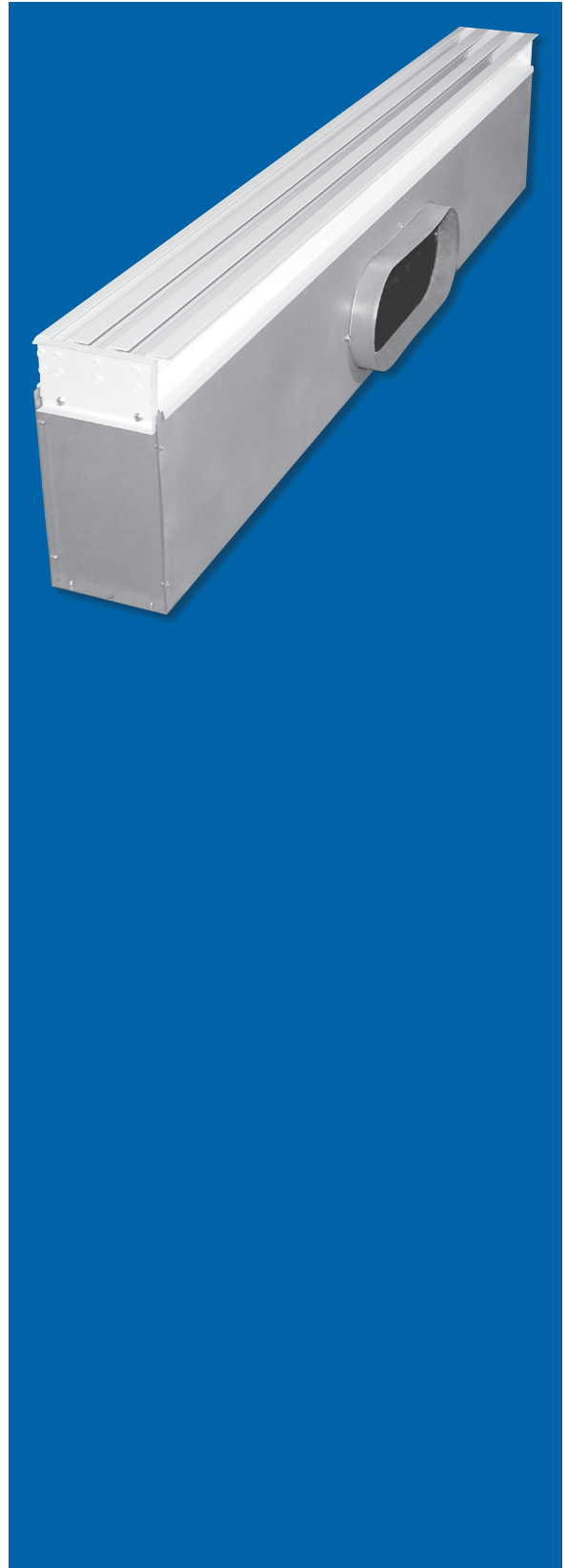
- Slot Quantity: 1 - 4
- Slot Width: 3/4", 1"
- Slot Length: 24", 36", 48", 60"

COMPATIBLE OPTIONS AND ACCESSORIES

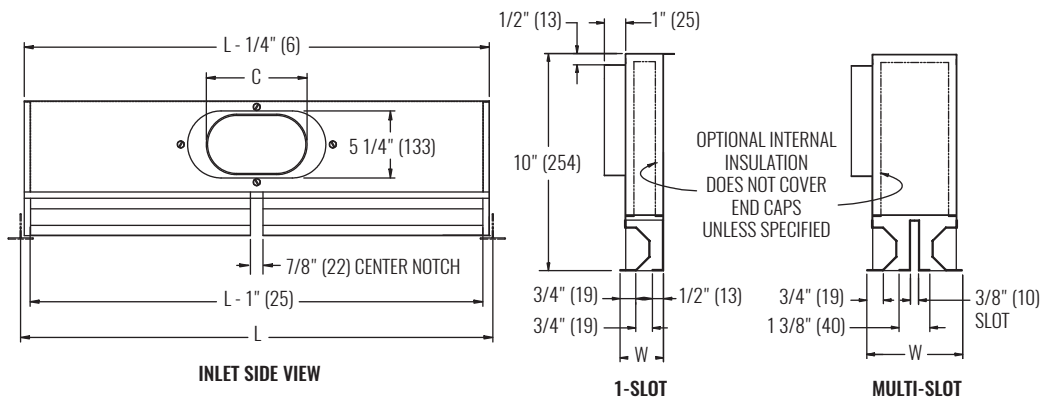
- Quadrant damper
- Cable operated damper
- Various insulation options
- HCFPTBT plaster frame or center notch mounting

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ 2-way throw requires minimum of 2 slots.



DIMENSIONAL DATA



DIMENSIONS	
PATTERN	FACE WIDTH (W)
11L / 11R	2" (51)
21L / 21R	3 1/2" (89)
31L / 31R	5" (127)
41L / 41R	6 1/2" (165)
22	4 3/8" (111)
32L / 32R	5 7/8" (149)
42	7 3/8" (187)

NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE, DESIGN, AND DIMENSIONAL DATA

SIZE		PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH						DESIGN			DIMENSIONS	
SLOT QTY	NOMINAL INLET	NC (< 25)			NC (25 - 40)			CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf	C	L
		CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)					
2	6"	40 - 170	3 - 20	2 - 11	190 - 400	21 - 31	12 - 17	220	31	0.30	6 1/4" (159)	24" (610) - 60" (1524)
2	8"	60 - 190	7 - 21	3 - 12	210 - 480	23 - 34	12 - 19	270	38	0.30	9 3/8" (238)	24" (610) - 60" (1524)
2	10"	80 - 200	12 - 22	6 - 12	220 - 500	23 - 35	13 - 19	290	40	0.30	12 1/2" (317)	24" (610) - 60" (1524)
4	8"	115 - 320	13 - 23	6 - 15	350 - 745	24 - 35	16 - 23	450	63	0.30	9 3/8" (238)	24" (610) - 60" (1524)
4	10"	160 - 340	16 - 23	10 - 16	370 - 790	24 - 36	16 - 24	475	66	0.30	12 1/2" (317)	24" (610) - 60" (1524)

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). ADPI based on 8ft gap between ends of diffusers. Controlled zone is 12 ft wide by indicated separation distance. Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- PTBSS - Steel plenum slot diffuser with a fixed aluminum blade, shipped loose
- PTBSSFB - Steel plenum slot diffuser with a fixed aluminum blade, factory installed

FEATURES

- Combination slot diffuser with plenum for lay-in T-bar ceiling systems
- Steel pattern controllers either factory installed (PTBSSFB) or shipped loose for field installation (PTBSS)
- 1-way (1-slot) or 2-way (2-slot) fixed horizontal discharge air patterns
- Double metal thickness at slot face for rigidity and straightness

PLENUM INLET SIZES

- Round: 5" ¹
- Oval: 6" - 12" (2" increments) ²

SLOTS

- Slot Quantity: 1, 2
- Slot Width: 1", 1 1/2"
- Slot Length: 24", 36", 48", 60"

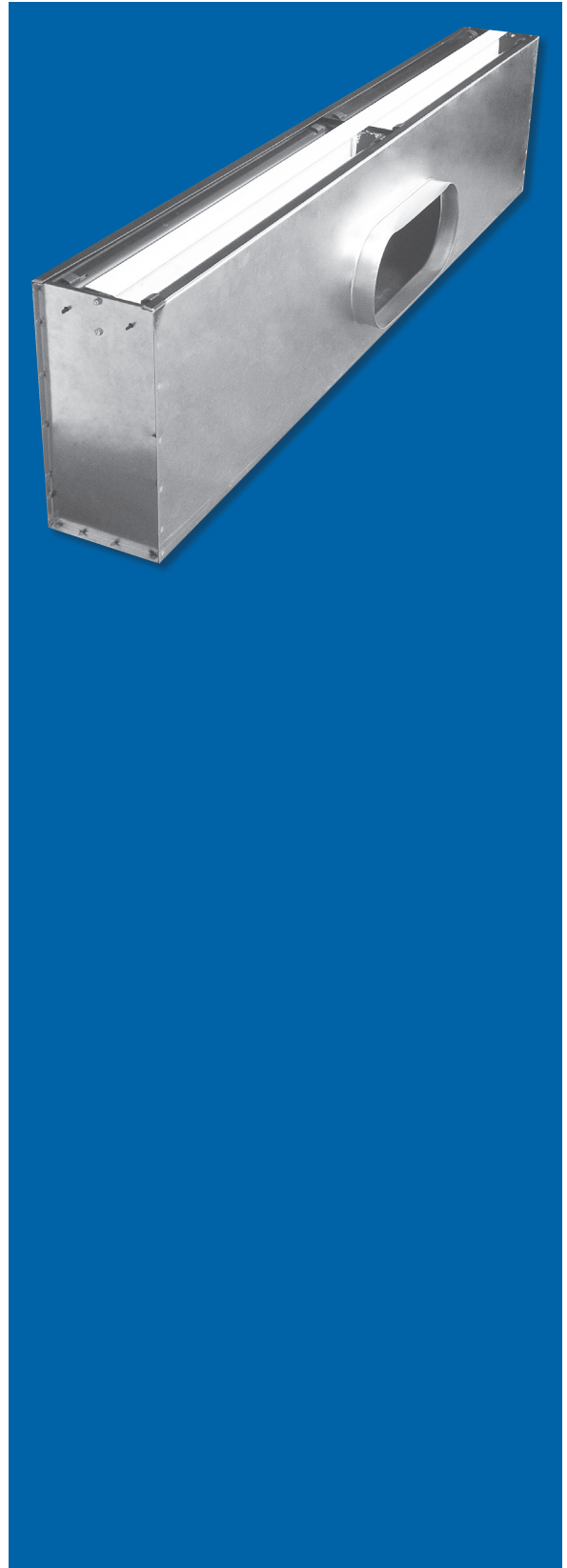
COMPATIBLE OPTIONS AND ACCESSORIES

- Quadrant damper
- Cable operated damper
- Various insulation options
- HCFPTBSS / HCFPTBSSFB plaster frame or mounting tab mounting options
- Factory installed T-bar options

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ 5" round inlet not available on 48" or 60" units.

² 12" oval inlet only available on 48" and 60" lengths.

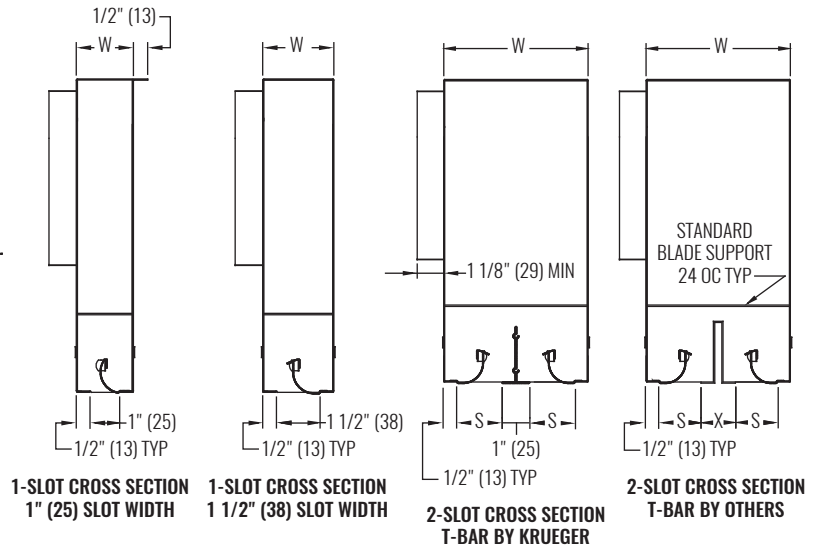
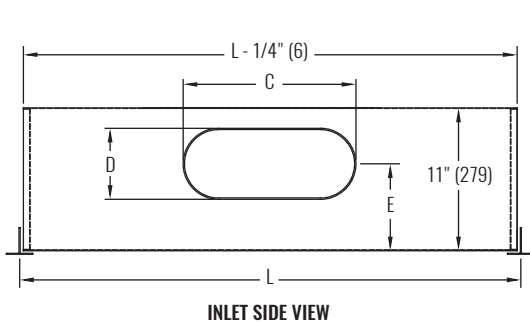


PTBSS / PTBSSFB

Plenum Slot Diffuser, Fixed Blade, Field/Factory Installed



DIMENSIONAL DATA



DIMENSIONS				
S	L	1-SLOT		2-SLOT
		W	W	X
1" (25)	24" (610)	2" (51)	4" (102)	1" (25)
	36" (914)			
	48" (1219)			
	60" (1524)			
1 1/2" (38)	24" (610)	2 1/2" (64)	5 1/4" (133)	1 1/4" (32)
	36" (914)			
	48" (1219)			
	60" (1524)			

DIMENSIONS				
INLET	C	D	E	L
5" (127) ROUND	4 7/8" (124)	4 7/8" (124)	6 3/16" (157)	24" (610) - 36" (914)
6" (152) OVAL	6 1/4" (159)	5 1/4" (133)	6 3/8" (162)	24" (610) - 60" (1524)
8" (203) OVAL	9 3/8" (238)	5 1/4" (133)	6 3/8" (162)	24" (610) - 60" (1524)
10" (254) OVAL	12 1/2" (318)	5 1/4" (133)	6 3/8" (162)	24" (610) - 60" (1524)
12" (305) OVAL	15 9/16" (395)	5 1/4" (133)	6 3/8" (162)	48" (1219) - 60" (1524)

NOTES: Dimensions in parentheses are millimeters (mm). Max blade length is 24". Longer units will have multiple blades.

PERFORMANCE AND DESIGN DATA

SIZE			PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH				DESIGN		
SLOT WIDTH	SLOT QTY	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
			CFM	THROW (ft)	CFM	THROW (ft)			
1"	1	8"	100 - 180	25 - 34	190 - 315	35 - 45	220	31	0.30
1"	1	10"	100 - 190	25 - 35	200 - 360	36 - 48	235	33	0.30
1"	1	12"	120 - 220	28 - 38	230 - 380	39 - 50	270	38	0.30
1"	2	8"	170 - 300	33 - 44	320 - 545	46 - 59	375	52	0.30
1"	2	10"	175 - 320	34 - 46	340 - 588	47 - 62	400	56	0.30
1"	2	12"	200 - 370	36 - 49	380 - 660	50 - 65	450	63	0.30
1.5"	1	10"	110 - 190	15 - 21	205 - 425	22 - 32	250	35	0.30
1.5"	1	12"	120 - 240	17 - 24	260 - 560	25 - 37	330	46	0.30
1.5"	2	8"	120 - 225	11 - 22	245 - 540	24 - 36	300	42	0.30
1.5"	2	10"	130 - 265	13 - 25	290 - 610	26 - 38	360	50	0.30
1.5"	2	12"	150 - 345	15 - 29	370 - 810	30 - 44	450	63	0.30

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). ADPI based on 4ft length units and 8ft gap between ends of diffusers. Controlled zone is 12ft wide by indicated separation distance. Data shown is 1-way throw for 1 slot and 2-way throw for 2 slot. Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- PFTBS - Steel, fire rated plenum slot supply diffuser

FEATURES

- Combination slot diffuser with plenum for lay-in T-bar ceiling systems
- UL 263 classified assembly which incorporates a 3-hour rated fire damper
- Fixed steel pattern controllers
- 1-way (1-slot) or 2-way (2-slot) fixed horizontal discharge air patterns
- Double metal thickness at slot face for rigidity and straightness

PLENUM INLET SIZES

- Round: 5" ¹, 6", 7", 8" ²
- Oval: 10", 12"

SLOTS

- Slot Quantity: 1, 2 ³
- Slot Width: 3/4", 1", 1 1/2" ³
- Slot Length: 24", 36", 48"

COMPATIBLE OPTIONS AND ACCESSORIES

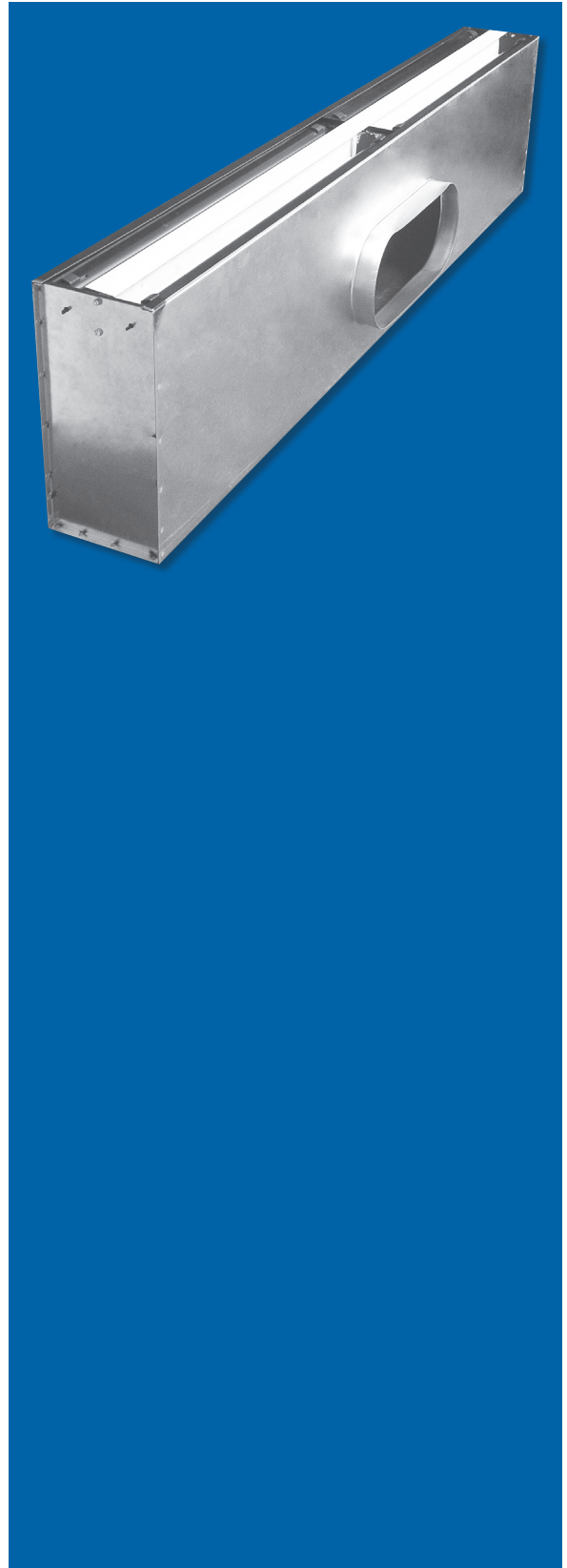
- Factory installed T-bars

NOTES: Check allowance of options and accessories with local fire codes.

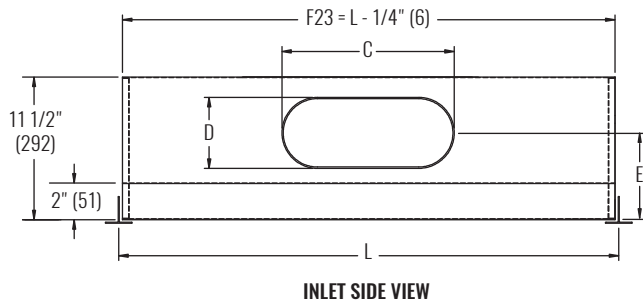
¹ 5" round inlet not available on 48" length.

² 12" oval inlet only available on 48" length.

³ 2-slot, 1 1/2" slot width is not available with UL rating.

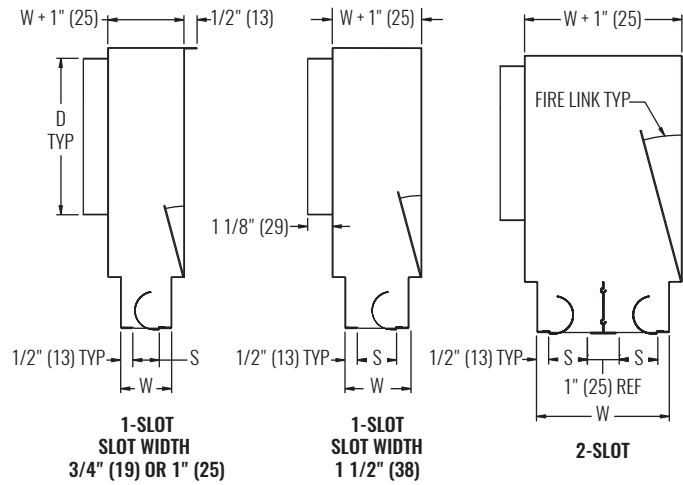


DIMENSIONAL DATA



INLET SIDE VIEW

DIMENSIONS				
INLET	C	D	E	L
5" (127) ROUND	4 7/8" (124)	4 7/8" (124)	7 7/8" (200)	24" (610), 36" (914)
6" (152) ROUND	5 7/8" (149)	5 7/8" (149)	7 7/8" (200)	24" (610), 36" (914), 60" (1524)
7" (178) ROUND	6 7/8" (175)	6 7/8" (175)	7 7/8" (200)	24" (610), 36" (914), 60" (1524)
8" (203) ROUND	7 7/8" (200)	7 7/8" (200)	7 7/8" (200)	24" (610), 36" (914), 60" (1524)
10" (254) OVAL	12 1/2" (318)	5 1/4" (133)	7 7/8" (200)	24" (610), 36" (914)
12" (305) OVAL	14 1/8" (359)	7 7/8" (200)	6 1/4" (159)	48" (1219)



1-SLOT
SLOT WIDTH
3/4" (19) OR 1" (25)

1-SLOT
SLOT WIDTH
1 1/2" (38)

2-SLOT

DIMENSIONS		
S	1-SLOT	2-SLOT
	W	W
3/4" (19)	13/4" (44)	3 1/2" (89)
1" (25)	2" (51)	4" (102)
1 1/2" (38)	2 1/2" (64)	5" (127) ¹



PERFORMANCE AND DESIGN DATA

SIZE			PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH				DESIGN		
SLOT WIDTH	SLOT QTY	NOMINAL INLET	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
			CFM	THROW (ft)	CFM	THROW (ft)			
1"	1	6"	80 - 155	22 - 32	170 - 305	33 - 44	200	28	0.3
1"	1	8"	100 - 180	25 - 34	196 - 340	36 - 47	220	31	0.3
1"	1	10"	100 - 190	25 - 35	205 - 357	36 - 48	235	33	0.3
1"	1	12"	120 - 210	28 - 37	220 - 406	38 - 51	270	38	0.3
1"	2	6"	150 - 270	29 - 42	294 - 510	44 - 57	350	49	0.3
1"	2	8"	170 - 300	33 - 44	316 - 560	45 - 60	375	52	0.3
1"	2	10"	175 - 320	34 - 46	340 - 590	47 - 62	400	56	0.3
1"	2	12"	200 - 350	36 - 48	370 - 650	49 - 65	450	63	0.3
1.5"	1	6"	75 - 135	11 - 18	145 - 285	19 - 26	180	25	0.3
1.5"	1	8"	90 - 165	13 - 19	180 - 360	21 - 30	130	18	0.3
1.5"	1	10"	110 - 185	15 - 21	200 - 390	22 - 31	250	35	0.3
1.5"	1	12"	140 - 238	18 - 24	260 - 500	25 - 35	330	46	0.3

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). ADPI based on 4ft length units and 8ft gap between ends of diffusers. Controlled zone is 12ft wide by indicated separation distance. Data shown is 1-way throw for 1 slot and 2-way throw for 2 slot. Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- PTBSC - Steel plenum slot supply diffuser with fixed aluminum curved blades
- PTBSRC - Steel plenum slot supply/return combination diffuser with fixed aluminum curved blades

FEATURES

- Combination slot diffuser with plenum for lay-in T-bar ceiling systems
- Fixed horizontal pattern deflector, steel construction
- Combination supply / return (model PTBSRC)

PLENUM INLET SIZES

- Oval: 6", 8", or 10" ¹

SLOTS

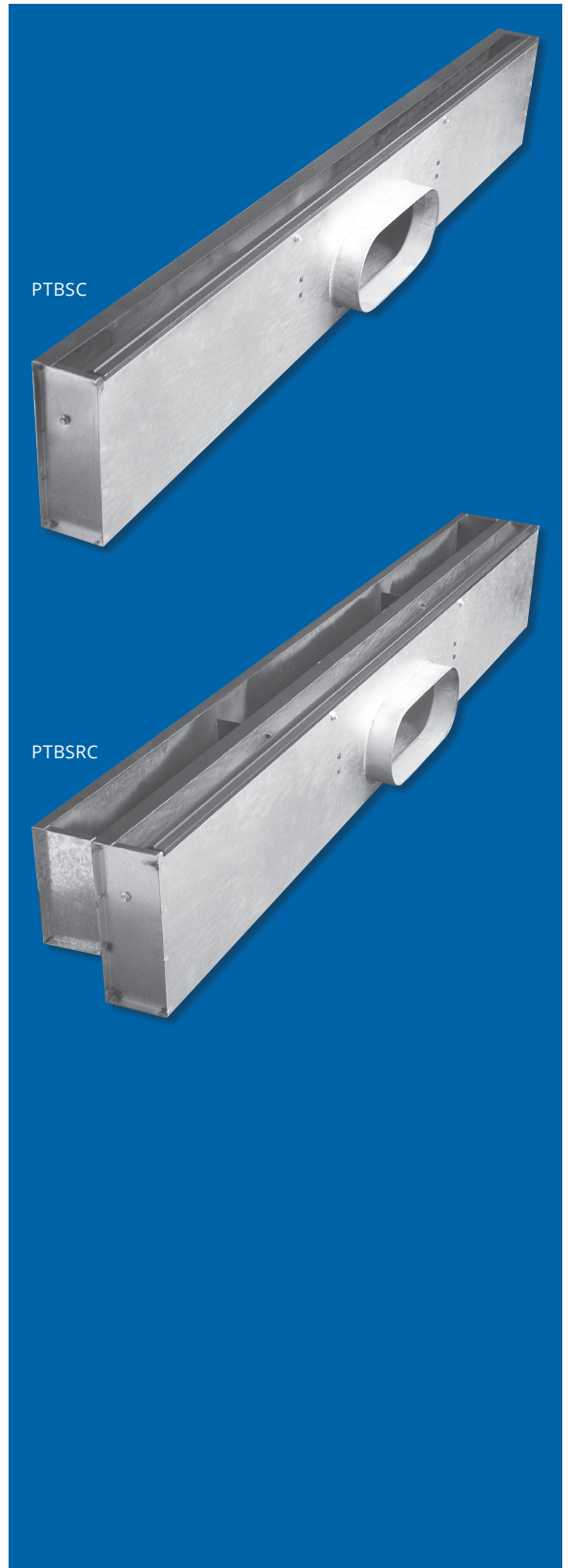
- Slot Quantity: 1 (supply), 2 (supply/return combo)
- Slot Widths: 3/4" (supply), 2" (return)
- Slot Lengths: 24", 36", 48", 60"

COMPATIBLE OPTIONS AND ACCESSORIES

- HCFPTBSC / HCFPTBSRC - Plaster frame

NOTES:

- ¹ 10" oval inlet not available with 24" slot length.

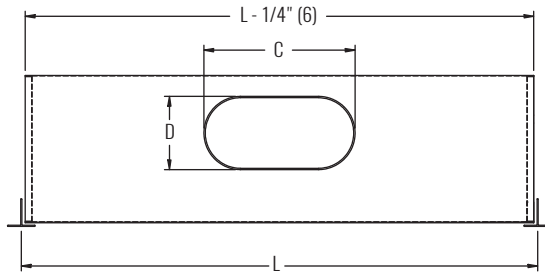


PTBSC / PTBSRC

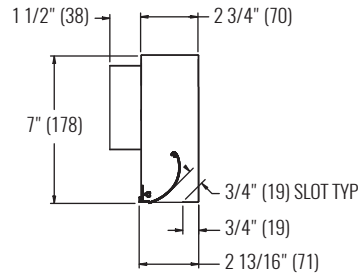
Plenum Slot Diffuser, Fixed Blade, Supply/Return



DIMENSIONAL DATA

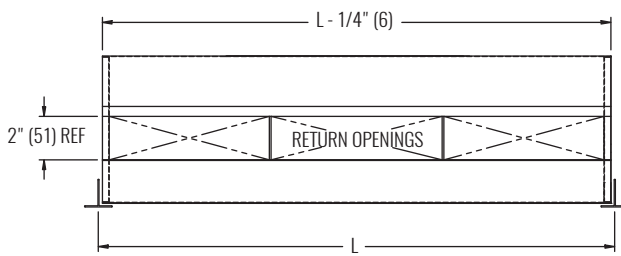


INLET SIDE VIEW

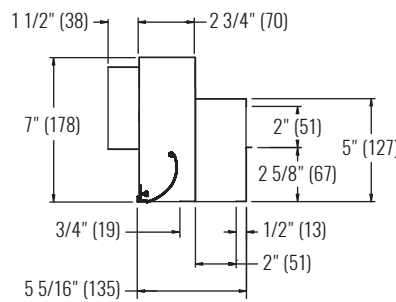


PTBSC, CROSS SECTION

DIMENSIONS		
INLET	C	D
6" OVAL (152)	7 9/16" (192)	3" (76)
8" OVAL (203)	10 1/16" (256)	4" (102)
10" OVAL (254)	13 1/4" (337)	4" (102)



RETURN SIDE VIEW



PTBSRC, CROSS SECTION

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH, 1-SLOT, 3/4" SLOT WIDTH, 1-WAY THROW				DESIGN		
	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
NOMINAL INLET	CFM	THROW (ft)	CFM	THROW (ft)			
6"	80 - 160	18 - 32	200 - 320	36 - 46	210	29	0.30
8"	100 - 190	22 - 35	235 - 370	39 - 49	240	33	0.30
10"	120 - 220	27 - 38	270 - 420	42 - 52	280	39	0.30

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Units are typically installed at the perimeter. ADPI based on 8ft gap between ends of diffusers, horizontal discharge away from window. Controlled zone is 12 ft wide by indicated separation distance. Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- PTBSCDB - Steel plenum slot supply diffuser with fixed aluminum curved blades and downblow
- PTBSRCDB - Steel plenum slot supply/return combination diffuser with fixed aluminum curved blades and downblow

FEATURES

- Combination slot diffuser with plenum for lay-in T-bar ceiling systems
- Supply combines fixed steel blades for horizontal throw and center downblow portion with adjustable ice tong blades for vertical throw
- Combination supply / return (model PTBSRCDB)

PLENUM INLET SIZES

- Oval: 6" - 10" (2" increments)¹

SLOTS

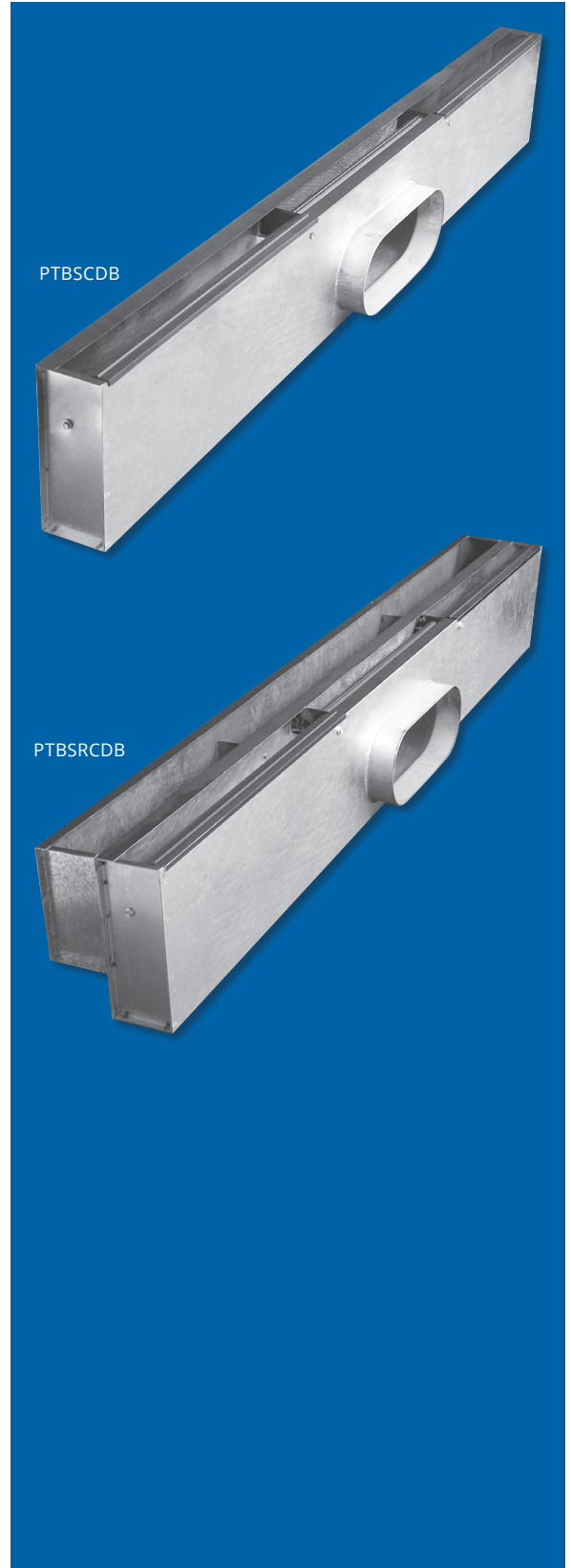
- Slot Quantity: 1 (supply), 2 (supply/return combination)
- Slot Width: 3/4" (supply), 2" (return)
- Slot Length: 24", 36", 48", 60"
- Downblow : 8", 12", 15", 18"

COMPATIBLE OPTIONS AND ACCESSORIES

- HCFPTBSCDB / HCFPTBSRCDB - Plaster frame
- Various insulation options

NOTES:

- ¹ 10" oval inlet not available with 24" slot length.



PTBSCDB

PTBSRCDB

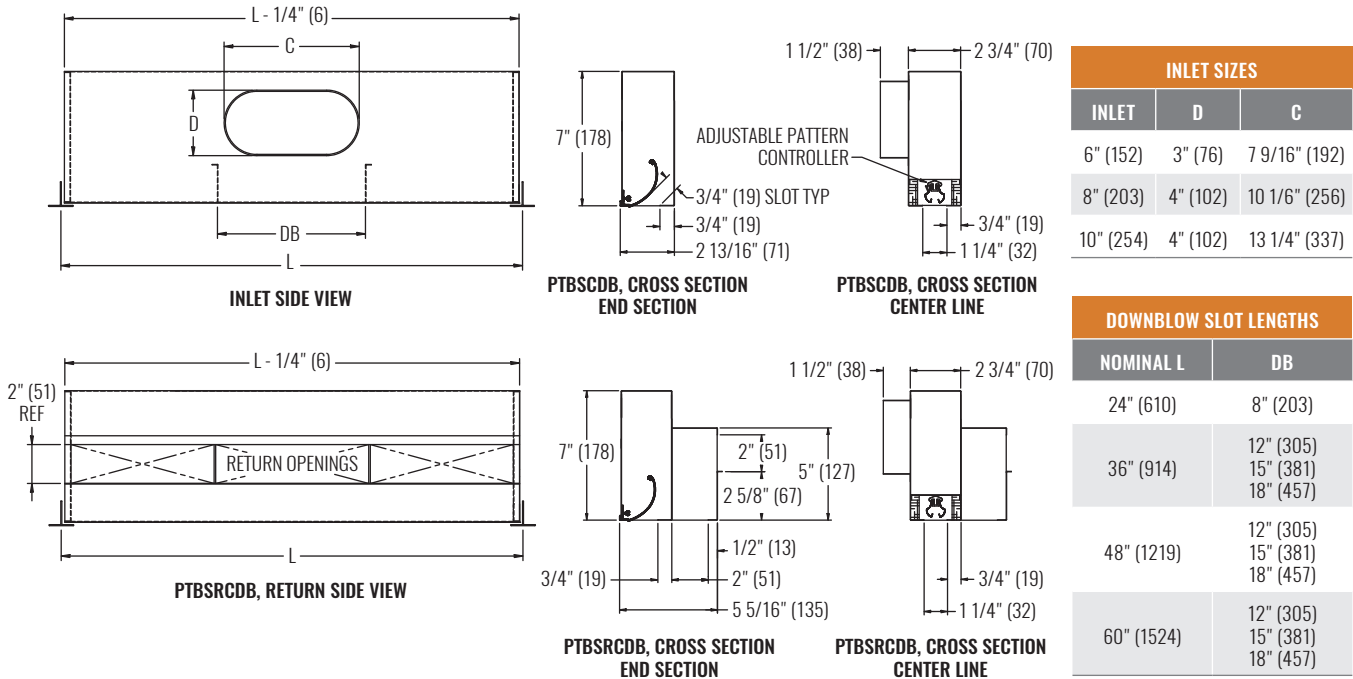


PTBSCDB / PTBSRCDB

Plenum Slot Diffuser, Fixed Blade, Downblow



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE - 48" LENGTH, 1-SLOT, 3/4" SLOT WIDTH, 1-WAY THROW						DESIGN		
NOMINAL INLET	DOWNBLOW	NC (< 25)			NC (25 - 40)			CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	HORIZONTAL THROW (ft)	VERTICAL THROW (ft)	CFM	HORIZONTAL THROW (ft)	VERTICAL THROW (ft)			
6"	12"	80 - 140	15 - 26	4 - 6	170 - 260	29 - 36	7 - 9	180	25	0.30
8"	12"	80 - 160	15 - 28	4 - 7	200 - 300	31 - 37	9 - 10	210	29	0.30
10"	12"	80 - 170	15 - 29	4 - 7	215 - 350	32 - 41	9 - 11	240	33	0.30
6"	15"	80 - 150	15 - 26	4 - 7	185 - 275	29 - 34	8 - 9	180	25	0.30
8"	15"	80 - 160	15 - 27	4 - 7	200 - 320	30 - 38	9 - 11	210	29	0.30
10"	15"	80 - 180	15 - 28	4 - 8	210 - 360	31 - 39	9 - 12	240	33	0.30
6"	18"	80 - 160	14 - 25	4 - 7	190 - 300	27 - 34	8 - 9	210	29	0.30
8"	18"	80 - 190	14 - 27	4 - 8	215 - 350	30 - 38	9 - 11	240	33	0.30
10"	18"	80 - 210	14 - 29	4 - 8	230 - 410	31 - 41	9 - 12	260	36	0.30

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Units are typically installed at the perimeter. ADPI based on 8ft gap between ends of diffusers, horizontal discharge away from window. Controlled zone is 12 ft wide by indicated separation distance. Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- PTBR - Plenum slot return, non-ducted, steel construction

FEATURES

- Combination return slot diffuser with plenum for lay-in T-bar ceiling systems
- Double metal thickness at slot face for rigidity and straightness

SLOTS

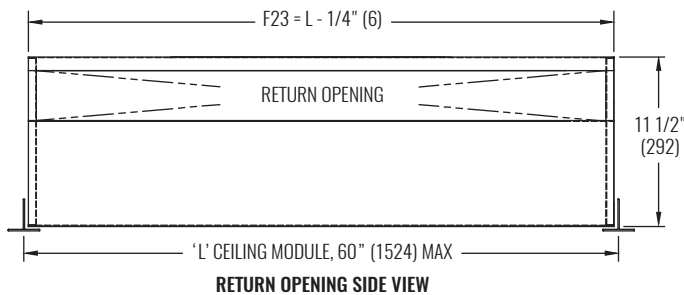
- Slots Quantity: 1 - 4
- Slot Width: 3/4", 1", 1 1/2"
- Length: 24", 36", 48", 60"

COMPATIBLE OPTIONS AND ACCESSORIES

- Internal insulation
- HCFPTBR - Plaster frame
- Center notch and mounting tab mounting options
- Factory installed T-bar options

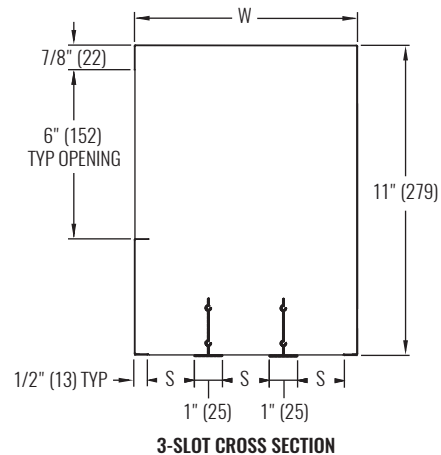
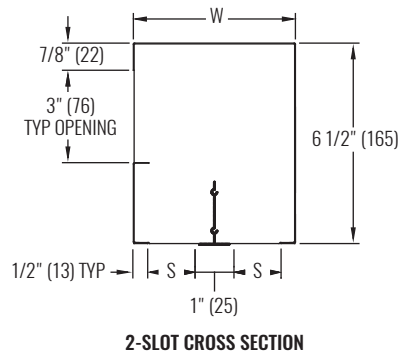
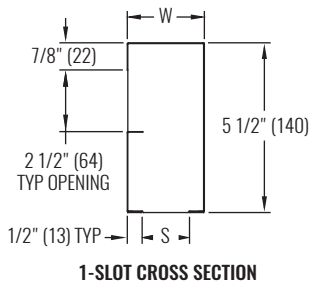


DIMENSIONAL DATA



INLET SIZES				
S	1-SLOT	2-SLOT	3-SLOT	4-SLOT
	W	W	W	W
3/4" (19)	1 3/4" (44)	3 1/2" (89)	5 1/4" (133)	7" (178)
1" (25)	2" (51)	4" (102)	6" (152)	8" (203)
1 1/2" (38)	2 1/2" (64)	5" (127)	7 1/2" (191)	10" (254)

NOTES: Dimensions in parentheses are millimeters (mm).



PERFORMANCE DATA

SIZE			PERFORMANCE	
SLOT WIDTH	SLOT QUANTITY	UNIT LENGTH	NC (< 25)	NC (25 - 40)
			CFM	CFM
3/4"	1	24"	40 - 115	125 - 190
3/4"	2	24"	90 - 210	225 - 330
3/4"	2	48"	180 - 390	405 - 480
1"	1	24"	60 - 150	165 - 270
1"	1	48"	120 - 250	270 - 480
1"	2	24"	120 - 260	275 - 490
1"	2	48"	240 - 440	460 - 900
1"	2	60"	280 - 670	685 - 1090
1 1/2"	2	24"	180 - 435	450 - 720
1 1/2"	2	48"	360 - 800	840 - 1320
1 1/2"	2	60"	400 - 950	1000 - 1600

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- PFTBR - Fire rated, plenum slot return

FEATURES

- Combination slot diffuser with return plenum for lay-in T-bar ceiling systems
- UL 263 classified assembly which incorporates a 3-hour rated fire damper
- Double metal thickness at slot face for rigidity and straightness

SLOTS

- Slot Quantity: 1, 2¹
- Slot Width: 3/4", 1", 1 1/2"¹
- Length: 24", 36", 48"

COMPATIBLE OPTIONS AND ACCESSORIES

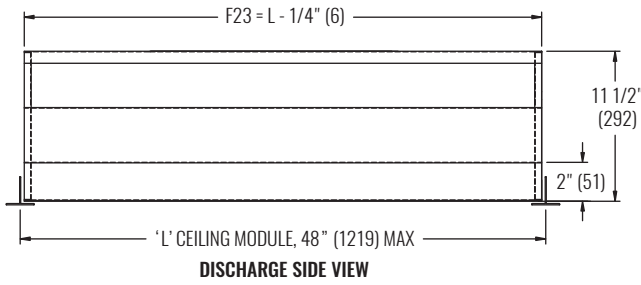
- Factory installed T-bar options

NOTES: Check allowance of options and accessories with local fire codes.

¹ 2-slot, 1 1/2" slot width is not available with UL rating.

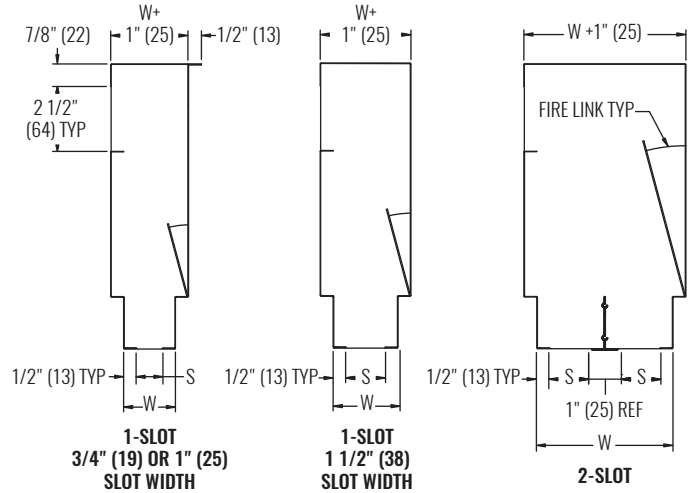


DIMENSIONAL DATA



DIMENSIONS		
S	1-SLOT	2-SLOT
	W	W
3/4" (19)	1 3/4" (44)	3 1/2" (89)
1" (25)	2" (51)	4" (102)
1 1/2" (38)	2 1/2" (64)	5" (127) ¹

NOTES: Dimensions in parentheses are millimeters (mm).
¹ 2 slot (1 1/2" slot width) is not available with UL rating.



PERFORMANCE DATA

SIZE		PERFORMANCE	
SLOT WIDTH	SLOT QUANTITY	NC (< 25)	NC (25 - 40)
		CFM	CFM
3/4"	1	90 - 210	223 - 330
3/4"	2	180 - 390	413 - 600
1"	1	120 - 255	285 - 480
1"	2	250 - 435	450 - 850
1.5"	1	180 - 437	450 - 720

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- RM1- Steel round diffuser, 3 cones, 2 position adjustments
- 5RM1 - Aluminum round diffuser, 3 cones, 2 position adjustments

FEATURES

- Horizontal only air distribution
- Designed for heating and cooling applications
- 360° discharge air pattern
- Excellent performance in variable air volume systems
- Designed for exposed duct or hard ceiling applications
- Two Cone Positions: Position 1 to maximize capacity, position 2 to increase room air induction

INLET SIZES

- Round: 6" - 20" (2" increments), 24", 30", 36"^{1 2}

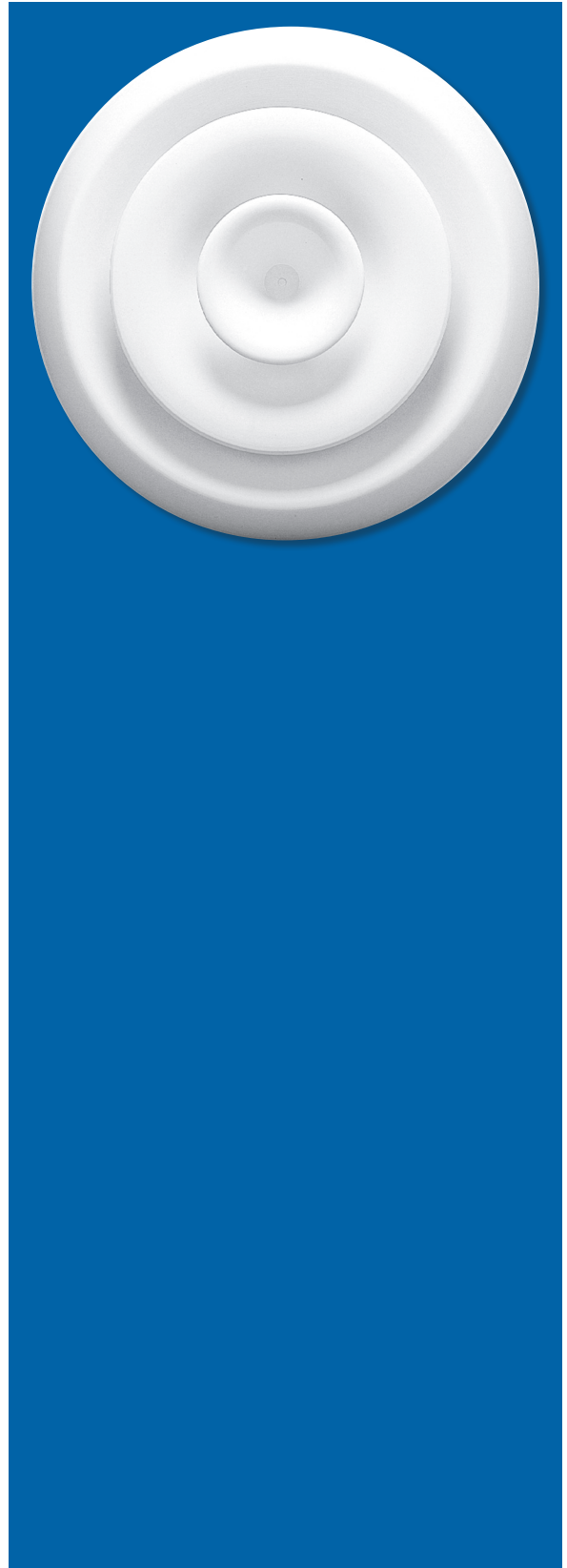
COMPATIBLE OPTIONS AND ACCESSORIES

- Safety chain (optional on sizes under 12", standard on 12" and larger)
- PR10 - Steel, radial opposed blade damper, 12" max (neck mount)
- PRN100 - Steel, radial fan damper, 14" max (neck mount)
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper, 14" max (duct mount)
- PR12 - Steel, butterfly bladed damper, 24" max (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES: Not all options available with all configurations or one another. Some options must be ordered separately. See website for complete compatibility.

¹ Largest inlet size available for 5RM1 is 18".

² Safety chain included on all units with 12" or greater inlet size.

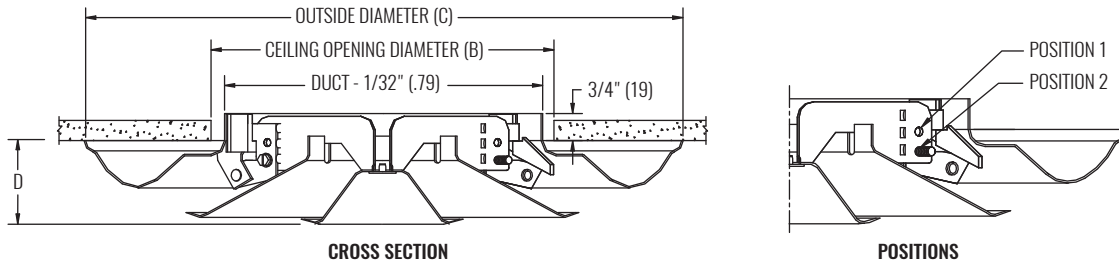


RM1 / 5RM1

Round Diffuser, 3 Cones



DIMENSIONAL DATA



DIMENSIONS					
RM1 NOMINAL ROUND DUCT	5RM1 NOMINAL ROUND DUCT	B	C	POSITION 1 D	POSITION 2 D
6"	6"	6 1/2" (165)	11 1/8" (283)	1 3/4" (44)	1 1/8" (29)
8"	8"	8 1/2" (216)	14 3/4" (375)	2 1/8" (54)	1 1/2" (38)
10"	10"	10 1/2" (267)	18 1/4" (460)	2 7/8" (73)	2 1/8" (54)
12"	12"	12 1/2" (318)	22" (559)	3 1/8" (79)	2 3/8" (60)
14"	14"	14 1/2" (368)	26" (660)	3 3/8" (86)	2 5/8" (67)
16"	16"	16 1/2" (419)	29" (737)	4" (102)	3 1/4" (83)
18"	18"	18 1/2" (470)	32 1/2" (826)	4 3/4" (121)	3 7/8" (98)
20"	-	20 1/2" (520)	36" (914)	5 7/8" (149)	4 7/8" (124)
24"	-	24 1/2" (622)	43 1/4" (1095)	7 3/4" (197)	6 5/8" (168)
30"	-	30 1/2" (775)	53 3/4" (1365)	8 1/8" (206)	6 5/8" (168)
36"	-	36 1/2" (927)	64 1/2" (1638)	10 1/8" (257)	8 3/8" (213)

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN - BASED ON POSITION 1		
NOMINAL INLET	POSITION	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HORIZONTAL DISCHARGE AIR PATTERN								
6"	1	79 - 185	5 - 9	196 - 300	9 - 11	200	18	0.30
6"	2	79 - 145	6 - 8	157 - 250	8 - 10	170	17	N/A
8"	1	70 - 300	3 - 11	325 - 489	11 - 14	370	25	0.30
8"	2	70 - 250	4 - 10	265 - 419	11 - 13	300	22	N/A
10"	1	218 - 450	8 - 14	475 - 715	14 - 17	545	30	0.30
10"	2	218 - 375	9 - 13	390 - 625	13 - 16	450	27	N/A
12"	1	157 - 620	5 - 16	650 - 990	16 - 20	725	35	0.30
12"	2	157 - 515	6 - 15	550 - 864	15 - 19	625	32	N/A
14"	1	214 - 790	6 - 18	855 - 1283	19 - 23	960	40	0.30
14"	2	214 - 690	7 - 17	715 - 1176	17 - 22	820	37	N/A
16"	1	279 - 1000	7 - 20	1075 - 1676	21 - 26	1220	45	0.30
16"	2	279 - 875	8 - 19	915 - 1450	20 - 25	1050	42	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes inapplicable situations or those which do not result in ADPI>80% and are therefore not recommended.

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MODEL

- RM2 - Steel round diffuser, 4 cones, 3 position adjustments
- 5RM2 - Aluminum round diffuser, 4 cones, 3 position adjustments

FEATURES

- Horizontal/vertical air distribution; units ship in vertical position
- Designed for heating and cooling applications
- 360° discharge air pattern
- Excellent performance in variable air volume systems
- Designed for exposed duct or hard ceiling applications

INLET SIZES

- Round: 6" - 20" (2" increments), 24", 30", 36"^{1 2}

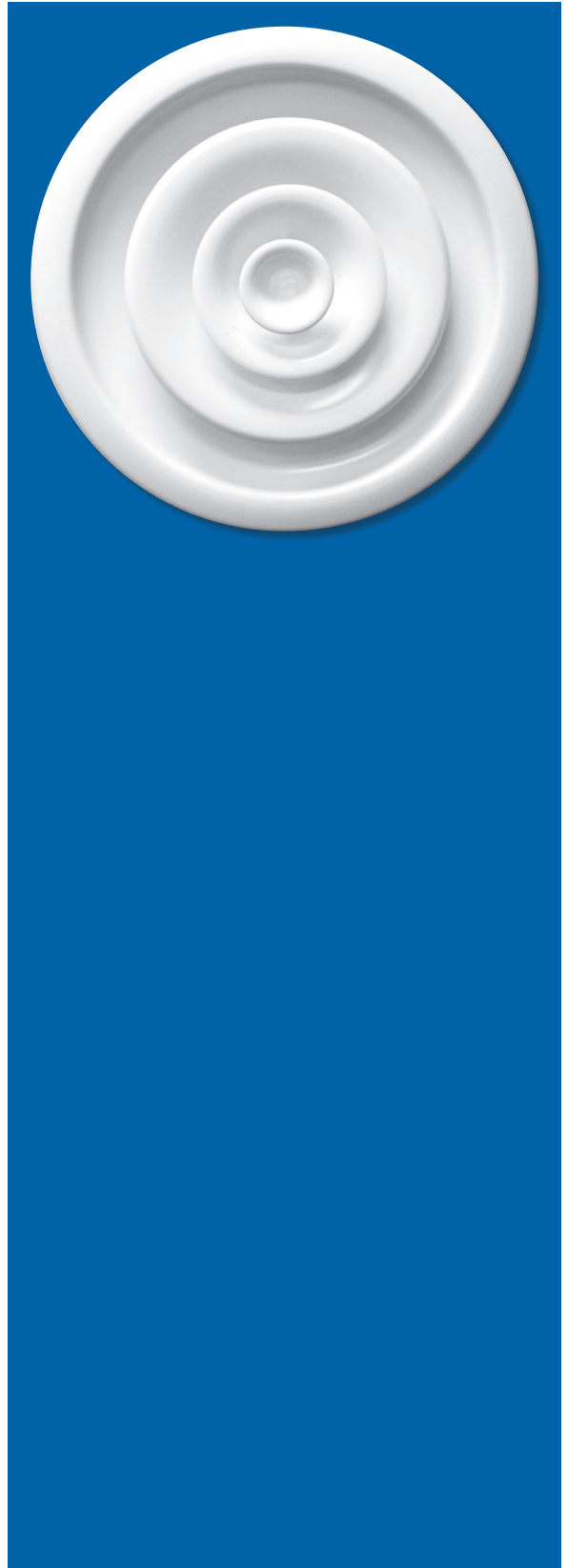
COMPATIBLE OPTIONS AND ACCESSORIES

- Safety chain (optional on sizes under 12", standard on 12" and larger)
- PR10 - Steel, radial opposed blade damper, 12" max (neck mount)
- PRN100 - Steel, radial fan damper, 14" max (neck mount)
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper, 14" max (duct mount)
- PR12 - Steel, butterfly bladed damper, 24" max (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES: Not all options available with all configurations or one another. Some options must be ordered separately. See website for complete compatibility.

¹ Largest inlet size available for 5RM2 is 18".

² Safety chain included on all units with 12" or greater inlet size.

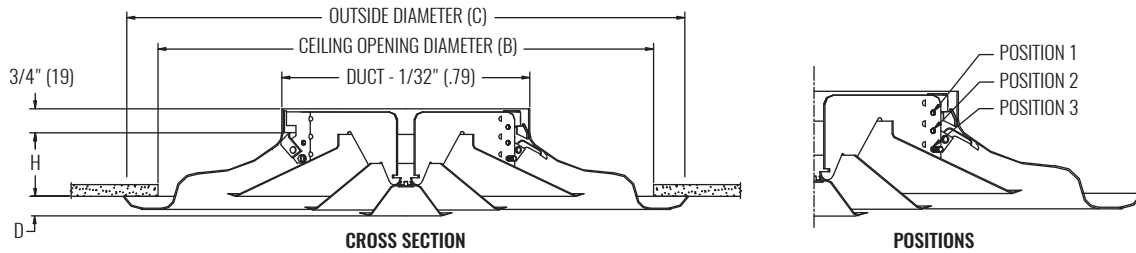
**WEB SEARCH:** RM2 or 5RM2

RM2 / 5RM2

Round Diffuser, 4 Cones



DIMENSIONAL DATA



DIMENSIONS						
RM2 NOMINAL ROUND DUCT	5RM2 NOMINAL ROUND DUCT	B	C	POSITION 1 (HORIZONTAL) D	POSITION 2 (VERTICAL) D	H
6"	6"	12" (305)	13 1/2" (343)	1 7/16" (37)	11/16" (17)	1 5/8" (41)
8"	8"	16" (406)	18" (457)	1 13/16" (46)	7/8" (19)	2 1/8" (54)
10"	10"	20" (508)	22 1/2" (572)	2 1/4" (57)	1 1/8" (29)	2 5/8" (67)
12"	12"	24" (635)	27" (686)	2 11/16" (68)	1 1/4" (32)	3 1/4" (83)
14"	14"	28" (711)	31 1/2" (800)	3 1/8" (79)	1 3/16" (30)	3 3/4" (95)
16"	16"	32" (813)	36" (914)	3 5/16" (84)	1 5/16" (33)	4 1/4" (108)
18"	18"	36" (914)	40 1/2" (1029)	3 3/4" (95)	1 1/2" (38)	4 7/8" (124)
20"	-	40" (1016)	45" (1143)	4 1/8" (105)	1 5/8" (41)	5 3/8" (137)
24"	-	48" (1219)	54" (1372)	4 7/8" (121)	1 7/8" (48)	6 1/2" (165)
30"	-	60" (1524)	67 1/2" (1715)	5 9/16" (141)	1 7/8" (48)	8" (203)
36"	-	60" (1524)	67 1/2" (1715)	5 9/16" (141)	1 7/8" (48)	8" (203)

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN - BASED ON HORIZONTAL THROW		
NOMINAL INLET	POSITION	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HZ = HORIZONTAL DISCHARGE AIR PATTERN / VT = VERTICAL DISCHARGE AIR PATTERN								
8"	1 (HZ)	70 - 230	3 - 9	250 - 384	10 - 12	280	22	0.35
8"	3 (VT)	70 - 224	1 - 8	240 - 384	9 - 16	260	N/A	N/A
10"	1 (HZ)	109 - 355	4 - 11	375 - 600	12 - 15	430	27	0.35
10"	3 (VT)	109 - 339	1 - 9	363 - 545	10 - 18	400	N/A	N/A
12"	1 (HZ)	157 - 490	4 - 13	520 - 800	14 - 17	620	32	0.35
12"	3 (VT)	157 - 471	1 - 9	510 - 785	11 - 21	590	N/A	N/A
14"	1 (HZ)	214 - 665	5 - 16	690 - 1069	16 - 20	825	37	0.35
14"	3 (VT)	214 - 641	1 - 11	689 - 1069	13 - 25	800	N/A	N/A
16"	1 (HZ)	279 - 838	6 - 18	900 - 1396	18 - 23	1000	41	0.35
16"	3 (VT)	279 - 815	1 - 11	838 - 1396	12 - 28	980	N/A	N/A
18"	1 (HZ)	353 - 1060	7 - 20	1120 - 1767	20 - 26	1350	47	0.35
18"	3 (VT)	353 - 1031	1 - 12	1060 - 1679	13 - 30	1300	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). Vertical throw provided is at 10° ΔT heating. NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes inapplicable situations or those which do not result in ADPI>80% and are therefore not recommended.

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MODEL

- RM4 - Steel round diffuser, 4 cones, 3 position adjustments, and a large outer anti-smudge cone
- 5RM4 - Aluminum round diffuser, 4 cones, 3 position adjustments, and a large outer anti-smudge cone

FEATURES

- Horizontal/vertical air distribution; units ship in vertical position
- Designed for heating and cooling applications
- 360° discharge air pattern
- Excellent performance in variable air volume systems
- Designed for exposed duct or hard ceiling applications

INLET SIZES

- Round: 6" - 20" (2" increments), 24"^{1 2}

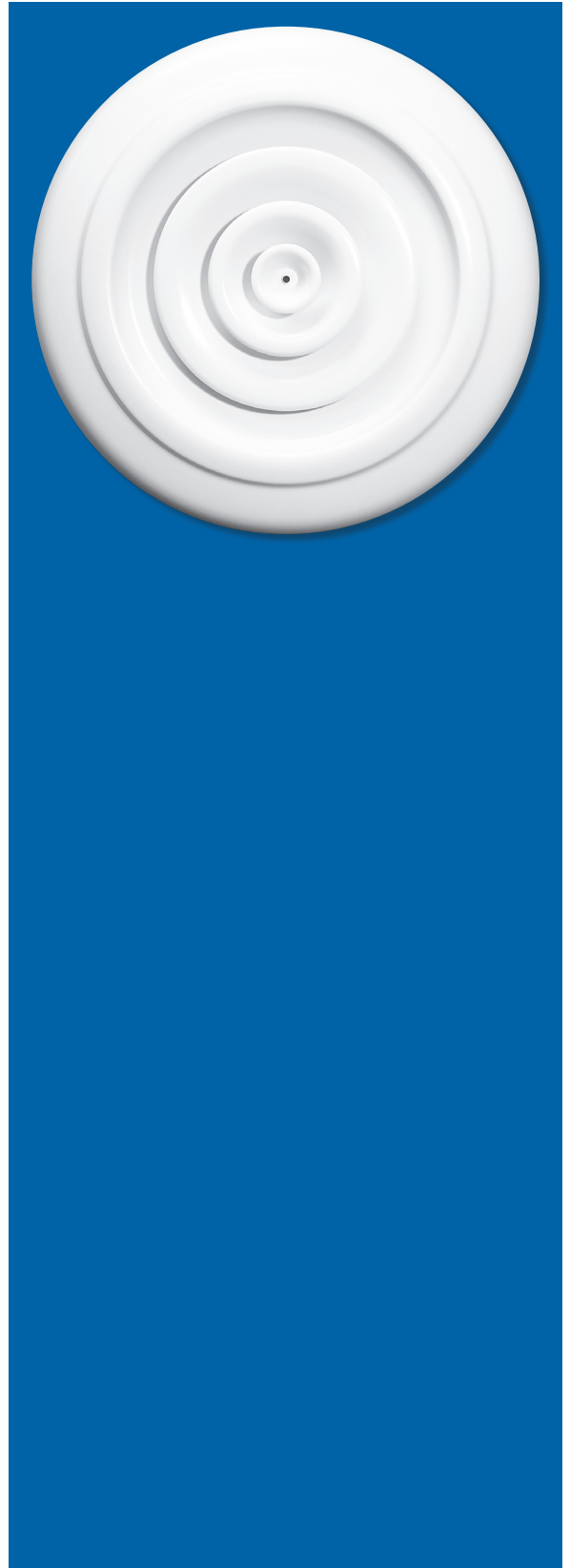
COMPATIBLE OPTIONS AND ACCESSORIES

- Safety chain (optional on sizes under 12", standard on 12" and larger)
- PR10 - Steel, radial opposed blade damper, 12" max (neck mount)
- PRN100 - Steel, radial fan damper, 14" max (neck mount)
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper, 14" max (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES: Not all options available with all configurations or one another. Some options must be ordered separately. See website for complete compatibility.

¹ Largest inlet size available for 5RM4 is 18".

² Safety chain included on all units with 12" or greater inlet size.

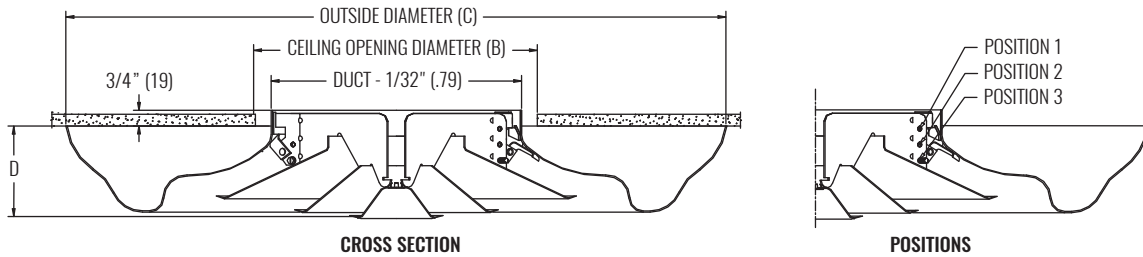
**WEB SEARCH:** RM4 or 5RM4

RM4 / 5RM4

Round Diffuser, 4 Cones, Anti-smudge Cone



DIMENSIONAL DATA



DIMENSIONS					
RM4 NOMINAL ROUND DUCT	5RM4 NOMINAL ROUND DUCT	POSITION 1 (HORIZONTAL) D	POSITION 2 (VERTICAL) D	CEILING OPENING DIAMETER B	OUTSIDE DIAMETER C
6"	6"	3 1/16" (78)	2 5/16" (59)	7" (178)	17 3/8" (441)
8"	8"	3 15/16" (100)	3" (76)	9" (229)	23 1/4" (591)
10"	10"	4 7/8" (124)	3 3/4" (95)	11" (279)	29" (737)
12"	12"	5 15/16" (151)	4 1/2" (114)	13" (330)	34 7/8" (886)
14"	14"	6 7/8" (175)	4 15/16" (125)	15" (381)	40 5/8" (1032)
16"	16"	7 9/16" (192)	5 9/16" (141)	17" (432)	46 3/8" (1178)
18"	18"	8 5/8" (219)	6 3/8" (162)	19" (483)	51 3/8" (1305)
20"	-	9 1/2" (241)	7" (178)	21" (533)	56 1/4" (1429)
24"	-	11 3/8" (289)	8 3/8" (213)	25" (635)	67 1/2" (1715)

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN - BASED ON HORIZONTAL THROW		
NOMINAL INLET	POSITION	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HZ = HORIZONTAL DISCHARGE AIR PATTERN / VT = VERTICAL DISCHARGE AIR PATTERN								
8"	1 (HZ)	70 - 230	3 - 9	250 - 384	10 - 12	280	22	0.35
8"	3 (VT)	70 - 224	1 - 8	240 - 384	9 - 16	260	N/A	N/A
10"	1 (HZ)	109 - 355	4 - 11	375 - 600	12 - 15	430	27	0.35
10"	3 (VT)	109 - 339	1 - 9	363 - 545	10 - 18	400	N/A	N/A
12"	1 (HZ)	157 - 490	4 - 13	520 - 800	14 - 17	620	32	0.35
12"	3 (VT)	157 - 471	1 - 9	510 - 785	11 - 21	590	N/A	N/A
14"	1 (HZ)	214 - 665	5 - 16	690 - 1069	16 - 20	825	37	0.35
14"	3 (VT)	214 - 641	1 - 11	689 - 1069	13 - 25	800	N/A	N/A
16"	1 (HZ)	279 - 838	6 - 18	900 - 1396	18 - 23	1000	41	0.35
16"	3 (VT)	279 - 815	1 - 11	838 - 1396	12 - 28	980	N/A	N/A
18"	1 (HZ)	353 - 1060	7 - 20	1120 - 1767	20 - 26	1350	47	0.35
18"	3 (VT)	353 - 1031	1 - 12	1060 - 1679	13 - 30	1300	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes inapplicable situations or those which do not result in ADPI>80% and are therefore not recommended.

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MODEL

- RA2 - Steel round diffuser, 4 cones, fully adjustable

FEATURES

- Horizontal/Vertical air distribution; units ship in vertical position
- Designed for heating and cooling applications
- 360° discharge air pattern
- Excellent performance in variable air volume systems
- Designed for exposed duct or hard ceiling applications

INLET SIZES

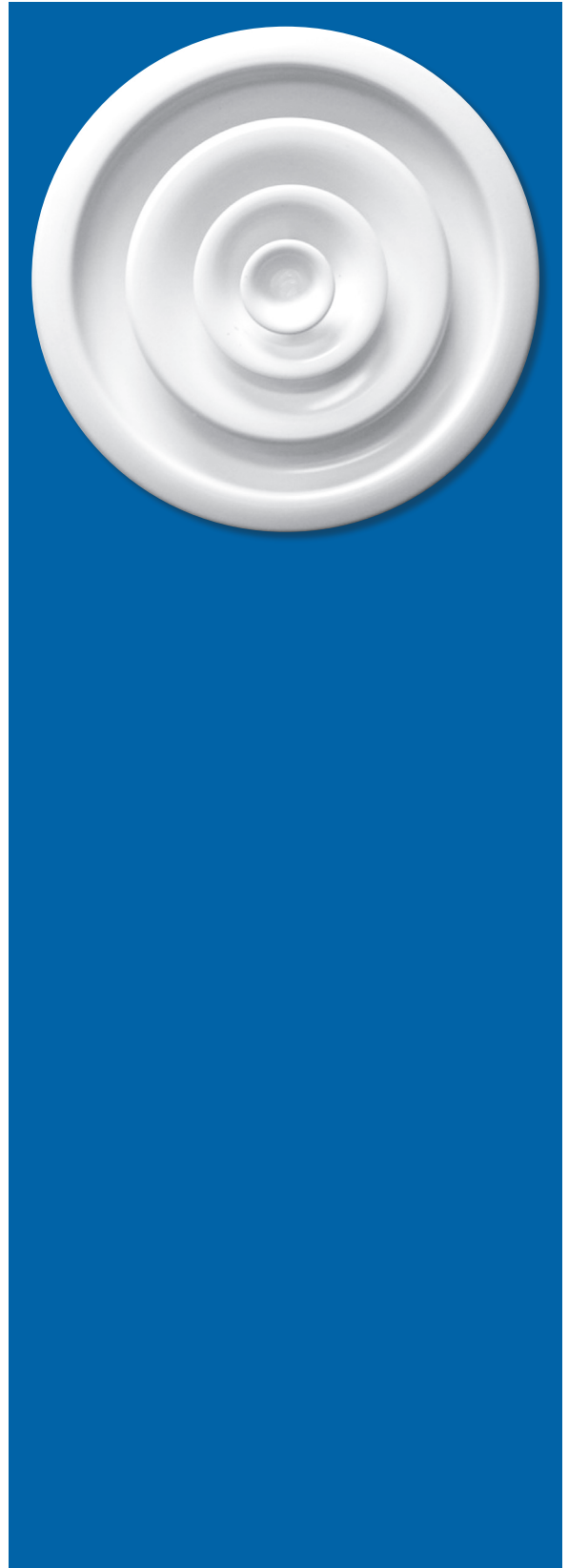
- Round: 6" - 20" (2" increments), 24", 30", 36" ¹

COMPATIBLE OPTIONS AND ACCESSORIES

- Safety chain (optional on sizes under 12", standard on 12" and larger)
- PR10 - Steel, radial opposed blade damper, 12" max (neck mount)
- PRN100 - Steel, radial fan damper, 14" max (neck mount)
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper, 14" max (duct mount)
- PR12 - Steel, butterfly bladed damper, 24" max (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES: Not all options available with all configurations or one another. Some options must be ordered separately. See website for complete compatibility.

¹ Safety chain included on all units with 12" or greater inlet size.



WEB SEARCH: RA2

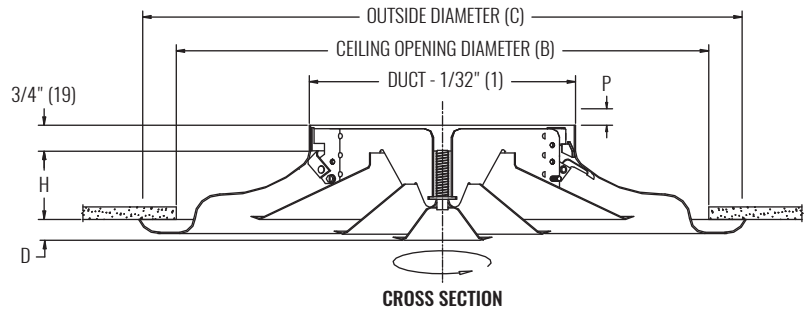


RA2

Round Diffuser, 4 Cones, Fully Adjustable



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Adjusting shaft projects above the neck of the diffuser on sizes 14 through 36. The maximum amount of this projection is Dimension P.

DIMENSIONS						
NOMINAL ROUND DUCT	CEILING OPENING DIAMETER B	OUTSIDE DIAMETER C	POSITION 1 (HORIZONTAL) D	POSITION 3 (VERTICAL) D	H	P
6"	12" (305)	13 1/2" (343)	1 7/16" (37)	11/16" (17)	1 5/8" (41)	-
8"	16" (406)	18" (457)	1 13/16" (46)	7/8" (19)	2 1/8" (54)	-
10"	20" (508)	22 1/2" (572)	2 1/4" (57)	1 1/8" (29)	2 5/8" (67)	-
12"	24" (635)	27" (686)	2 11/16" (68)	1 1/4" (32)	3 1/4" (83)	-
14"	28" (711)	31 1/2" (800)	3 1/8" (79)	1 3/16" (30)	3 3/4" (95)	2 1/2" (64)
16"	32" (813)	36" (914)	3 5/16" (84)	1 5/16" (33)	4 1/4" (108)	2 5/8" (67)
18"	36" (914)	40 1/2" (1029)	3 3/4" (95)	1 1/2" (38)	4 7/8" (124)	2 3/4" (70)
20"	40" (1016)	45" (1143)	4 1/8" (105)	1 5/8" (41)	5 3/8" (137)	3" (76)
24"	48" (1219)	54" (1372)	4 7/8" (121)	1 7/8" (48)	6 1/2" (165)	3 1/8" (79)
30"	60" (1524)	67 1/2" (1715)	5 9/16" (141)	1 7/8" (48)	8" (203)	4 3/8" (111)
36"	60" (1524)	67 1/2" (1715)	5 9/16" (141)	1 7/8" (48)	8" (203)	4 3/8" (111)

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN - BASED ON HORIZONTAL THROW		
NOMINAL INLET	POSITION	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HZ = HORIZONTAL DISCHARGE AIR PATTERN / VT = VERTICAL DISCHARGE AIR PATTERN								
8"	HZ	70 - 230	3 - 9	250 - 384	10 - 12	280	22	0.35
8"	VT	70 - 224	1 - 8	240 - 384	9 - 16	260	N/A	N/A
10"	HZ	109 - 355	4 - 11	375 - 600	12 - 15	430	27	0.35
10"	VT	109 - 339	1 - 9	363 - 545	10 - 18	400	N/A	N/A
12"	HZ	157 - 490	4 - 13	520 - 800	14 - 17	620	32	0.35
12"	VT	157 - 471	1 - 9	510 - 785	11 - 21	590	N/A	N/A
14"	HZ	214 - 665	5 - 16	690 - 1069	16 - 20	825	37	0.35
14"	VT	214 - 641	1 - 11	689 - 1069	13 - 25	800	N/A	N/A
16"	HZ	279 - 838	6 - 18	900 - 1396	18 - 23	1000	41	0.35
16"	VT	279 - 815	1 - 11	838 - 1396	12 - 28	980	N/A	N/A
18"	HZ	353 - 1060	7 - 20	1120 - 1767	20 - 26	1350	47	0.35
18"	VT	353 - 1031	1 - 12	1060 - 1679	13 - 30	1300	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes inapplicable situations or those which do not result in ADPI>80% and are therefore not recommended.

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MODEL

- RA4 - Steel round diffuser, 4 cones and a large outer anti-smudge cone, fully adjustable

FEATURES

- Horizontal/vertical air distribution; units ship in vertical position
- Designed for heating and cooling applications
- 360° discharge air pattern
- Excellent performance in variable air volume systems
- Designed for exposed duct or hard ceiling applications

INLET SIZES

- Round: 6" - 20" (2" increments), 24"¹

COMPATIBLE OPTIONS AND ACCESSORIES

- Safety chain (optional on sizes under 12", standard on 12" and larger)
- PR10 - Steel, radial opposed blade damper, 12" max (neck mount)
- PRN100 - Steel, radial fan damper, 14" max (neck mount)
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper, 14" max (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES: Not all options available with all configurations or one another. Some options must be ordered separately. See website for complete compatibility.

¹ Safety chain included on all units with 12" or greater inlet size.



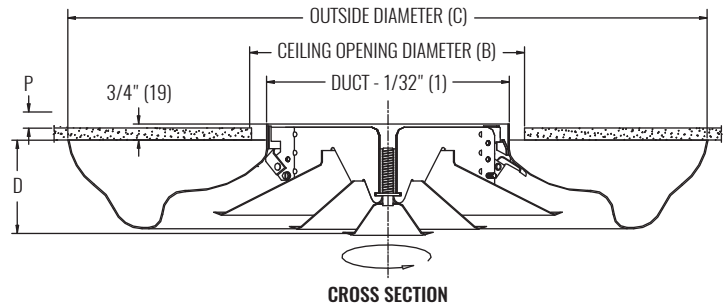
DIFFUSERS | ROUND

RA4

WEB SEARCH: RA4



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Adjusting shaft projects above the neck of the diffuser on sizes 14 through 36. The maximum amount of this projection is Dimension P.

DIMENSIONS					
NOMINAL ROUND DUCT	CEILING OPENING DIAMETER B	OUTSIDE DIAMETER C	POSITION 1 (HORIZONTAL) D	POSITION 3 (VERTICAL) D	P
6"	7" (178)	17 3/8" (441)	3 1/16" (78)	2 5/16" (59)	-
8"	9" (229)	23 1/4" (591)	3 15/16" (100)	3" (76)	-
10"	11" (279)	29" (737)	4 7/8" (124)	3 3/4" (95)	-
12"	13" (330)	34 7/8" (886)	5 15/16" (151)	4 1/2" (114)	-
14"	15" (381)	40 5/8" (1032)	6 7/8" (175)	4 15/16" (125)	2 1/2" (64)
16"	17" (432)	46 3/8" (1178)	7 9/16" (192)	5 9/16" (141)	2 5/8" (67)
18"	19" (483)	51 3/8" (1305)	8 5/8" (219)	6 3/8" (162)	2 3/4" (70)
20"	21" (533)	56 1/4" (1429)	9 1/2" (241)	7" (178)	3 1/2" (89)
24"	25" (635)	67 1/2" (1715)	11 3/8" (289)	8 3/8" (213)	3 1/8" (79)

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN - BASED ON HORIZONTAL THROW		
NOMINAL INLET	POSITION	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HZ = HORIZONTAL DISCHARGE AIR PATTERN / VT = VERTICAL DISCHARGE AIR PATTERN								
8"	HZ	70 - 230	3 - 9	250 - 384	10 - 12	280	22	0.35
8"	VT	70 - 224	1 - 8	240 - 384	9 - 16	260	N/A	N/A
10"	HZ	109 - 355	4 - 11	375 - 600	12 - 15	430	27	0.35
10"	VT	109 - 339	1 - 9	363 - 545	10 - 18	400	N/A	N/A
12"	HZ	157 - 490	4 - 13	520 - 800	14 - 17	620	32	0.35
12"	VT	157 - 471	1 - 9	510 - 785	11 - 21	590	N/A	N/A
14"	HZ	214 - 665	5 - 16	690 - 1069	16 - 20	825	37	0.35
14"	VT	214 - 641	1 - 11	689 - 1069	13 - 25	800	N/A	N/A
16"	HZ	279 - 838	6 - 18	900 - 1396	18 - 23	1000	41	0.35
16"	VT	279 - 815	1 - 11	838 - 1396	12 - 28	980	N/A	N/A
18"	HZ	353 - 1060	7 - 20	1120 - 1767	20 - 26	1350	47	0.35
18"	VT	353 - 1031	1 - 12	1060 - 1679	13 - 30	1300	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes inapplicable situations or those which do not result in ADPI > 80% and are therefore not recommended.

MODEL

- RM2PLQ -Steel round diffuser with an aluminum plaque

FEATURES

- Horizontal and vertical air distribution; units ship in vertical position
- Core is easily removable from face of diffuser
- 360° discharge air pattern
- Excellent performance in variable air volume systems
- Designed for exposed duct or hard ceiling applications
- Safety cable included

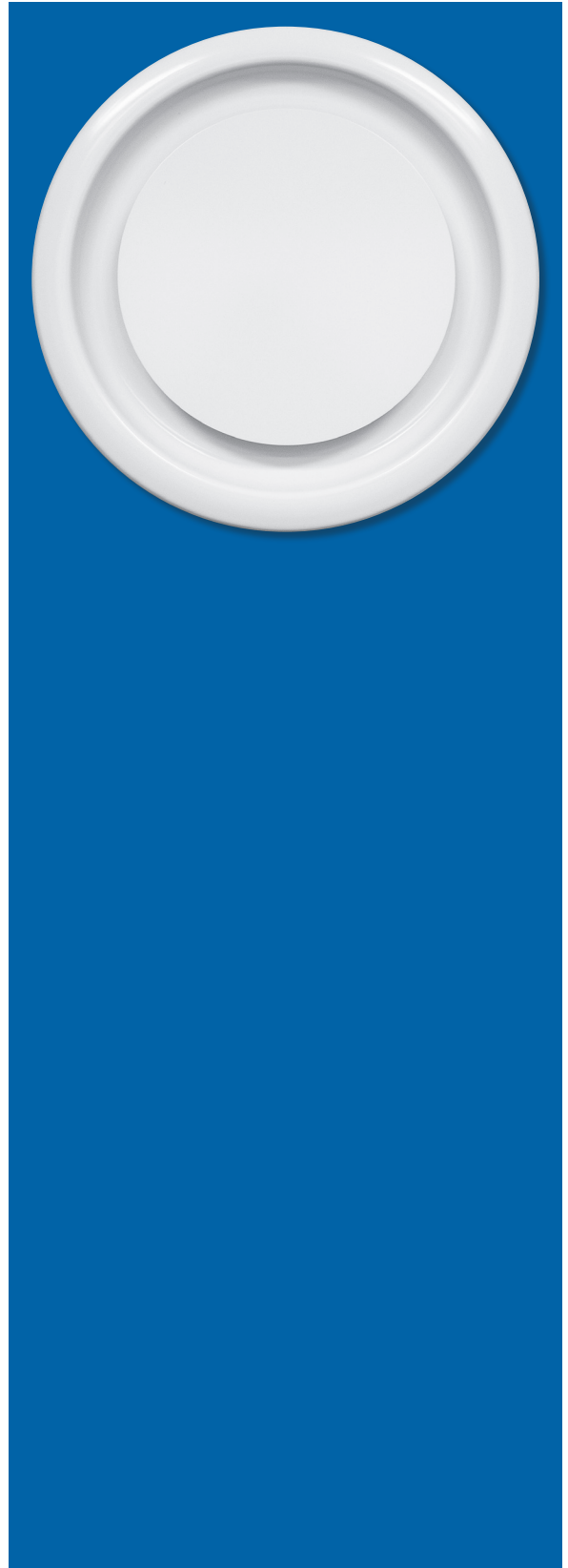
INLET SIZES

- Round: 6" - 14" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper, 12" max (neck mount)
- PRN100 - Steel, radial fan damper (neck mount)
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES: Not all options available with all configurations or one another. Some options must be ordered separately. See website for complete compatibility.



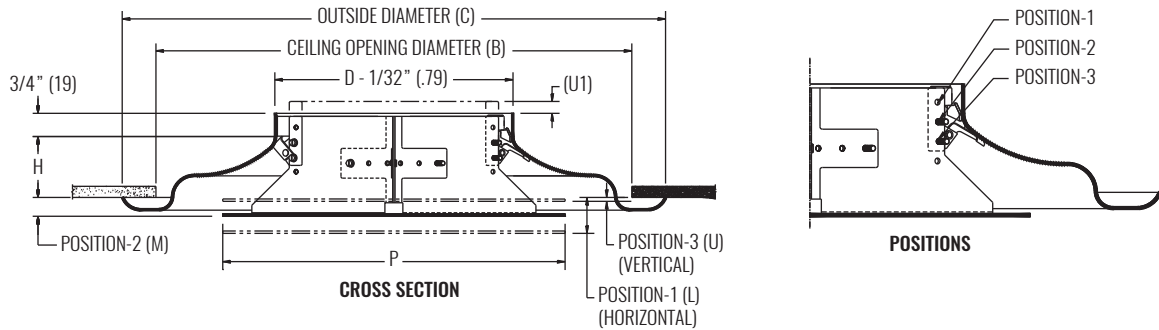
RM2PLQ

Round Diffuser with Plaque Face



DIFFUSERS | ROUND

DIMENSIONAL DATA



DIMENSIONS								
NOMINAL DUCT DIAMETER	B	C	H	P	U	U1 ¹	M	L
6"	12" (305)	13 1/2" (343)	1 5/8" (41)	6" (9)	1/16" (2)	1/2" (13)	5/8" (16)	1 3/16" (30)
8"	16" (406)	18" (457)	2 1/8" (54)	12" (305)	3/16" (5)	1/2" (13)	3/4" (19)	1 5/16" (33)
10"	20" (508)	22 1/2" (572)	2 5/8" (67)	15" (381)	0	1/2" (13)	9/16" (14)	1 1/8" (29)
12"	24" (635)	27" (686)	3 1/4" (83)	18" (457)	1/8" (3)	11/16" (17)	5/8" (16)	1 3/8" (35)
14"	28" (711)	31 1/2" (800)	3 3/4" (95)	21" (533)	1/16" (2)	13/16" (21)	13/16" (21)	1 9/16" (40)

NOTE: Dimensions in parentheses are millimeters (mm).
¹ (U1) Extends above the neck when plaque is placed in position 3.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN - BASED ON HORIZONTAL THROW		
NOMINAL INLET	POSITION	NC (< 25)		NC (25 - 40)		CFM @ NC=30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HZ = HORIZONTAL DISCHARGE AIR PATTERN / VT = VERTICAL DISCHARGE AIR PATTERN								
6"	1 (HZ)	39 - 236	2 - 9	275 - 393	10 - 12	300	22	0.28
6"	3 (VT)	39 - 175	0 - 7	196 - 275	8 - 13	220	N/A	N/A
8"	1 (HZ)	70 - 380	3 - 12	419 - 625	12 - 15	450	27	0.30
8"	3 (VT)	70 - 279	1 - 12	314 - 489	14 - 21	320	N/A	N/A
10"	1 (HZ)	109 - 530	4 - 14	545 - 873	14 - 18	630	32	0.30
10"	3 (VT)	109 - 425	1 - 17	436 - 715	17 - 27	470	N/A	N/A
12"	1 (HZ)	157 - 690	4 - 16	707 - 1021	16 - 19	825	37	0.33
12"	3 (VT)	157 - 590	2 - 21	628 - 942	22 - 32	700	N/A	N/A
14"	1 (HZ)	214 - 855	5 - 18	962 - 1283	19 - 22	1030	41	0.35
14"	3 (VT)	214 - 780	3 - 25	855 - 1283	27 - 37	900	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). Vertical throw provided is at 10° ΔT heating. NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes inapplicable situations or those which do not result in ADPI>80% and are therefore not recommended.

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RM2PLQ

MODEL

- RM4PLQ - Steel round diffuser with an anti-smudge cone and aluminum plaque

FEATURES

- Horizontal and vertical air distribution; units ship in vertical position
- Core is easily removable from face of diffuser
- 360° discharge air pattern
- Excellent performance in variable air volume systems
- Designed for exposed duct or hard ceiling applications
- Safety cable included

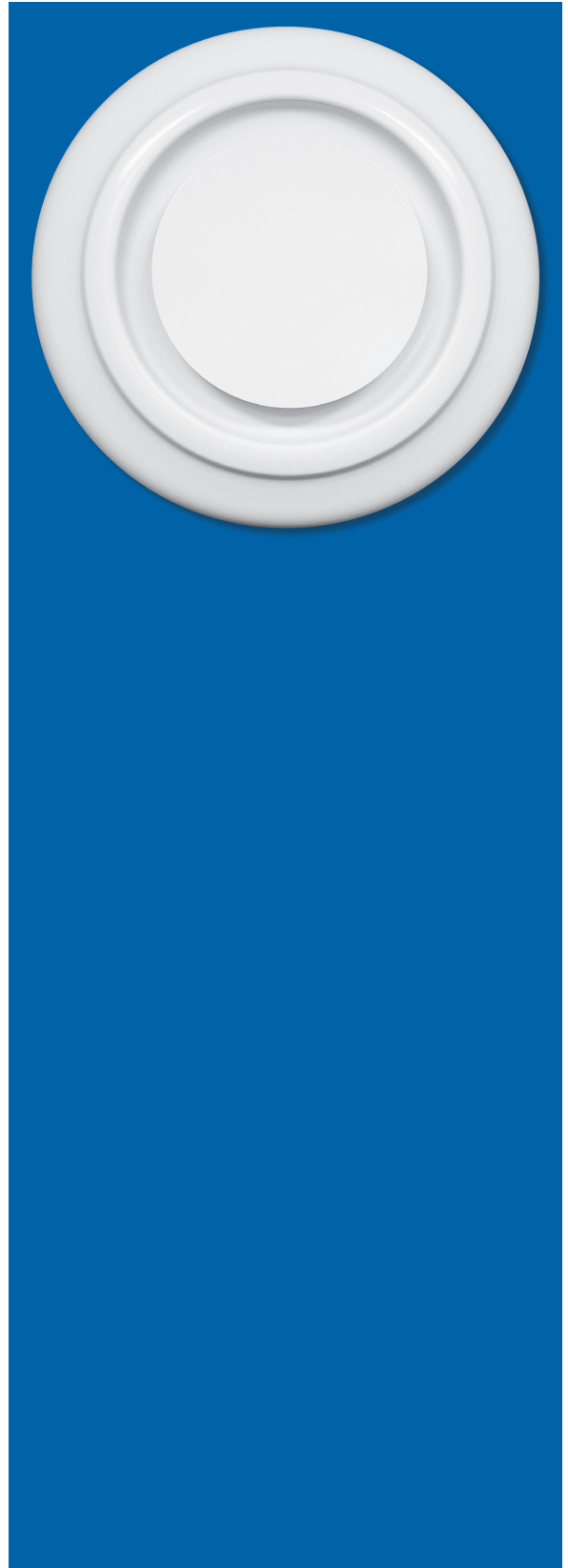
INLET SIZES

- Round: 6" - 14" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper, 12" max (neck mount)
- PRN100 - Steel, radial fan damper (neck mount)
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES: Not all options available with all configurations or one another. Some options must be ordered separately. See website for complete compatibility.

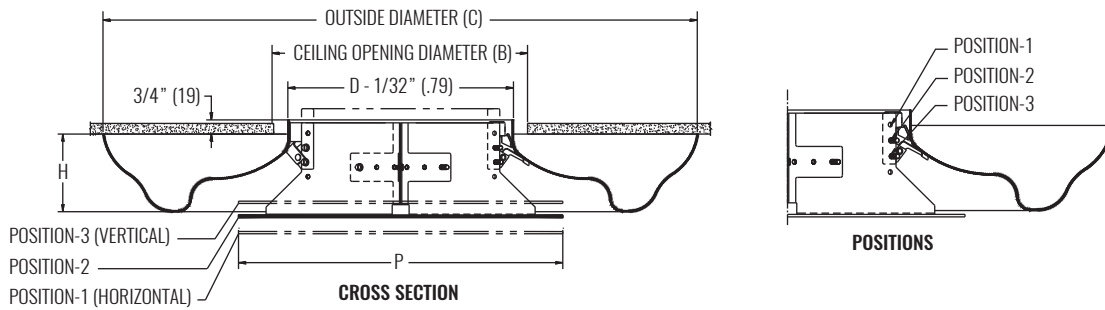


RM4PLQ

Round Diffuser with Plaque Face, Anti-smudge Cone



DIMENSIONAL DATA



DIMENSIONS				
NOMINAL DUCT DIAMETER	B	C	H	P
6"	7" (178)	17 3/8" (441)	2" (51)	6" (9)
8"	9" (229)	23 1/4" (591)	2 11/16" (68)	12" (305)
10"	11" (279)	29" (737)	3 1/4" (83)	15" (381)
12"	13" (330)	34 7/8" (886)	4" (102)	18" (457)
14"	15" (381)	40 5/8" (1032)	4 1/2" (114)	21" (533)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN - BASED ON HORIZONTAL THROW		
NOMINAL INLET	POSITION	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HZ = HORIZONTAL DISCHARGE AIR PATTERN / VT = VERTICAL DISCHARGE AIR PATTERN								
6"	1 (HZ)	39 - 236	2 - 9	275 - 393	10 - 12	300	22	0.28
6"	3 (VT)	39 - 175	0 - 7	196 - 275	8 - 13	220	N/A	N/A
8"	1 (HZ)	70 - 380	3 - 12	419 - 625	12 - 15	450	27	0.30
8"	3 (VT)	70 - 279	1 - 12	314 - 489	14 - 21	320	N/A	N/A
10"	1 (HZ)	109 - 530	4 - 14	545 - 873	14 - 18	630	32	0.30
10"	3 (VT)	109 - 425	1 - 17	436 - 715	17 - 27	470	N/A	N/A
12"	1 (HZ)	157 - 690	4 - 16	707 - 1021	16 - 19	825	37	0.33
12"	3 (VT)	157 - 590	2 - 21	628 - 942	22 - 32	700	N/A	N/A
14"	1 (HZ)	214 - 855	5 - 18	962 - 1283	19 - 22	1030	41	0.35
14"	3 (VT)	214 - 780	3 - 25	855 - 1283	27 - 37	900	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). Vertical throw provided is at 10° ΔT heating. NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes inapplicable situations or those which do not result in ADPI>80% and are therefore not recommended.

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DIFFUSERS | ROUND

RM4PLQ

MODEL

- R1DBR10 - Steel round diffuser with ring operated center downblow adjustment

FEATURES

- Outer cone is contoured to guard against ceiling smudging
- Designed for heating and cooling applications
- Adjustable horizontal and vertical discharge patterns
- 360° discharge air pattern
- Designed for exposed duct applications and high ceilings

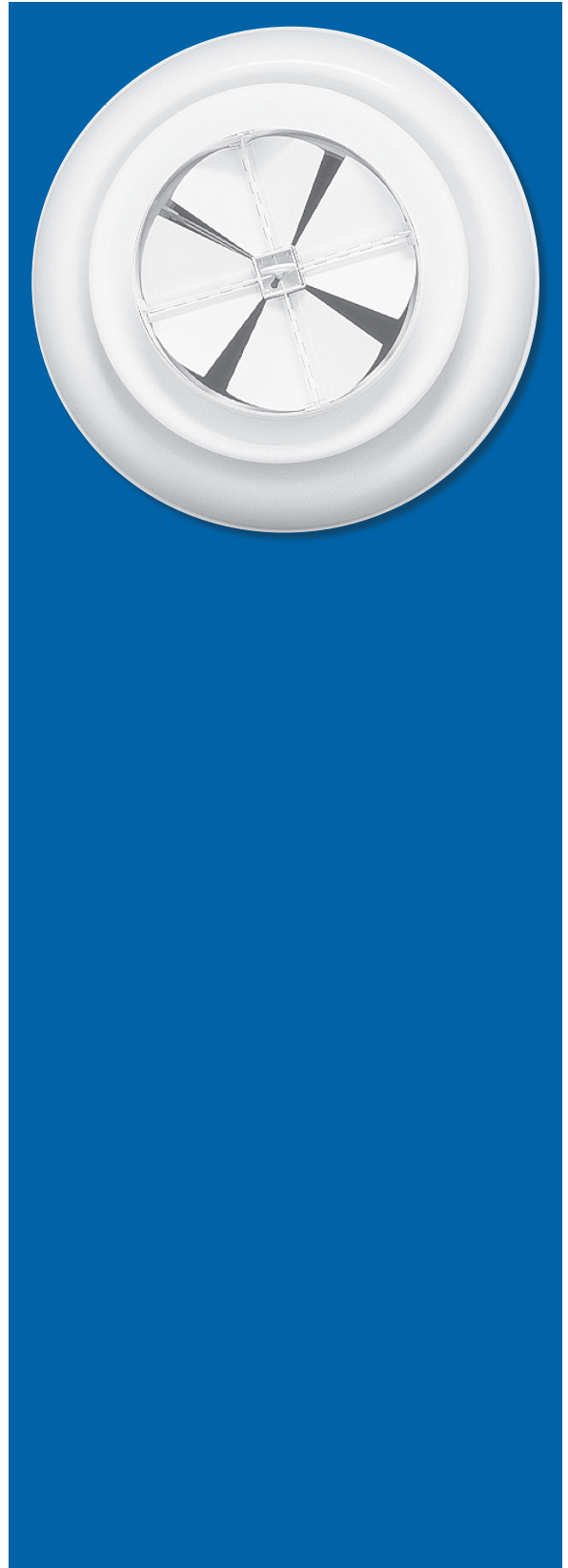
INLET SIZES

- Round: 10" - 20" (2" increments), 24", 30", 36"

COMPATIBLE OPTIONS AND ACCESSORIES

- PR10 - Steel, radial opposed blade damper, 12" max (neck mount)
- PRN100 - Steel, radial fan damper, 14" max (neck mount)
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper, 14" max (duct mount)
- PR12 - Steel, butterfly bladed damper, 24" max (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid
- OBDDM - Steel, square or rectangular damper (duct mount)
- EX8 - Steel duct extractor with 1" blade spacing (duct mount)
- EX88 - Steel duct extractor with 2" blade spacing (duct mount)

NOTES: Not all options available with all configurations or one another. Some options must be ordered separately. See website for complete compatibility.

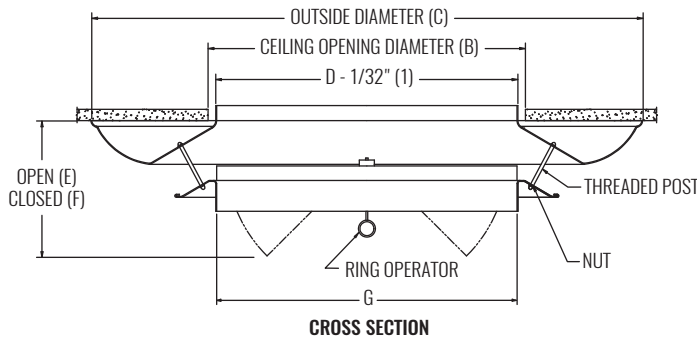


R1DBR10

Round Diffuser, Ring Operated Center Downblow



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONS					
NOMINAL ROUND DUCT D	B	C	E	F	G
10"	10 1/2" (267)	18 1/4" (464)	7 1/2" (191)	3" (76)	10" (254)
12"	12 1/2" (318)	22" (559)	9 3/8" (238)	4" (102)	12" (305)
14"	14 1/2" (368)	26" (660)	6 3/4" (171)	4" (102)	14" (356)
16"	16 1/2" (419)	29" (737)	8 1/2" (216)	5" (127)	16" (406)
18"	18 1/2" (470)	32 1/2" (826)	9 1/8" (232)	5" (127)	18" (457)
20"	20 1/2" (521)	36" (914)	10 3/8" (264)	5 1/2" (140)	20" (508)
24"	24 1/2" (622)	43 1/4" (1099)	12 1/4" (308)	6 5/8" (168)	24" (610)
30"	30 1/2" (775)	53 5/8" (1362)	13 7/8" (352)	8 1/4" (210)	30" (762)
36"	36 1/2" (927)	64 3/8" (1635)	15 5/8" (397)	10" (254)	36" (914)

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE				DESIGN - BASED ON HORIZONTAL THROW		
PANEL	POSITION	NC (< 25)		NC (25 - 40)		CFM @ NC-30	SPACING @ 0.6 CFM/sf (ft)	MINIMUM CFM/sf
		CFM	THROW (ft)	CFM	THROW (ft)			
HZ = HORIZONTAL DISCHARGE AIR PATTERN / VT = VERTICAL DISCHARGE AIR PATTERN								
10"	HZ	232 - 350	4 - 6	374 - 586	7 - 10	400	26	0.50
10"	VT	232 - 374	17 - 27	410 - 625	30 - 45	450	N/A	N/A
16"	HZ	531 - 820	6 - 9	866 - 1368	10 - 15	920	39	0.50
16"	VT	531 - 866	12 - 30	950 - 1460	33 - 50	1050	N/A	N/A
18"	HZ	654 - 990	6 - 10	1078 - 1645	11 - 16	1200	45	0.52
18"	VT	654 - 1120	12 - 33	1175 - 1714	35 - 51	1300	N/A	N/A
20"	HZ	807 - 1230	7 - 11	1331 - 1995	12 - 18	1420	49	0.55
20"	VT	807 - 1331	12 - 33	1405 - 2116	37 - 56	1600	N/A	N/A
24"	HZ	1131 - 1715	8 - 13	1822 - 2859	13 - 21	2000	58	0.58
24"	VT	1131 - 1822	13 - 33	1955 - 3055	38 - 65	2200	N/A	N/A
30"	HZ	1669 - 2570	10 - 15	2670 - 4155	16 - 24	3000	71	0.59
30"	VT	1669 - 2749	14 - 37	2930 - 4369	42 - 73	3300	N/A	N/A

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). Vertical throw provided is at 10° ΔT heating. NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Design spacing is recommended distance between diffusers in an open plan office based on ADPI > 80%, 9ft ceiling, and 55°F discharge at 30 NC and 0.6 CFM/sf. Minimum CFM/sf is based on recommended spacing at 80% ADPI. Design recommendations not applicable to vertical throw. "N/A" in design table denotes inapplicable situations or those which do not result in ADPI>80% and are therefore not recommended.

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MODEL

- RPN - Round punkah nozzle for surface mount

FEATURES

- Aluminum construction
- Foam gasket and mounting screws included
- Directional air pattern control (70° global rotation)
- For use in surface mount applications

SIZES

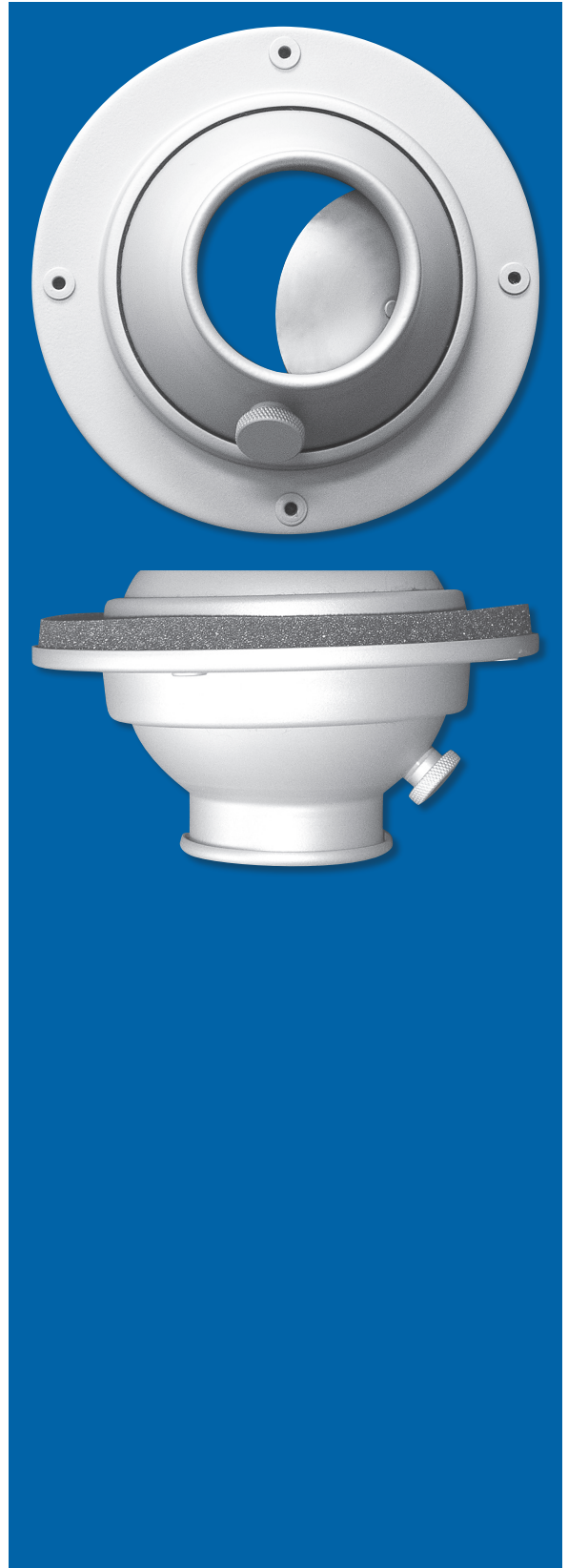
- Round: 4" - 20" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

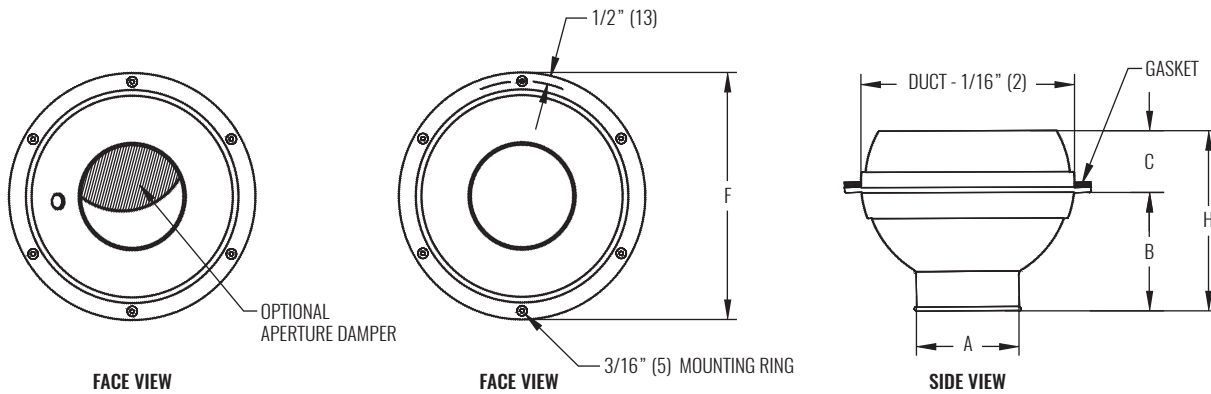
- Aluminum aperture damper with stainless steel hardware ¹
- Flex duct mounting ring

NOTES:

- ¹ Aperture damper must be ordered with unit; cannot be field installed.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS							
	NC (< 25)		NC (25 - 40)		A	B	C	DUCT D	F	H	SCREW HOLES	
	CFM	THROW (ft)	CFM	THROW (ft)								
4"	26 - 61	11 - 16	70 - 96	18 - 21	2" (51)	2 9/16" (65)	3/4" (19)	4" (102)	6" (152)	3 5/16" (84)	3	
6"	59 - 137	16 - 25	147 - 216	25 - 31	3" (76)	3 1/16" (78)	1 7/16" (37)	6" (152)	8" (203)	4 1/2" (114)	4	
8"	105 - 244	21 - 33	261 - 384	34 - 41	4 3/8" (111)	4 1/4" (108)	1 3/4" (44)	8" (203)	10" (254)	6" (152)	4	
10"	164 - 372	27 - 40	395 - 600	42 - 51	5 3/4" (146)	5 1/2" (140)	2 7/8" (73)	10" (254)	12" (305)	8 3/8" (213)	6	
12"	236 - 530	32 - 48	570 - 864	50 - 62	7 3/8" (187)	6" (152)	3" (76)	12" (305)	14" (356)	9" (229)	6	
14"	321 - 725	38 - 56	770 - 1176	58 - 72	8 5/8" (219)	7 1/8" (181)	4 1/8" (105)	14" (356)	16" (406)	11 1/4" (286)	6	
16"	419 - 949	43 - 65	1000 - 1535	67 - 82	9 3/4" (248)	8 1/4" (210)	4 3/4" (121)	16" (406)	18" (457)	13" (330)	6	
18"	530 - 1165	48 - 71	1236 - 1854	74 - 90	10 1/2" (267)	9 1/2" (241)	4 1/4" (108)	18" (457)	20" (508)	13 3/4" (349)	8	
20"	654 - 1438	54 - 79	1526 - 2289	82 - 100	12 3/8" (314)	10 7/8" (276)	4 7/8" (124)	20" (508)	22" (559)	15 3/4" (400)	8	

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- RPNRD - Round punkah nozzle with round duct adapter

FEATURES

- Aluminum construction
- Foam gasket and mounting screws included
- Directional air pattern control (70° global rotation)
- For use in duct mount applications

SIZES

- Round: 6" - 20" (2" increments) ¹

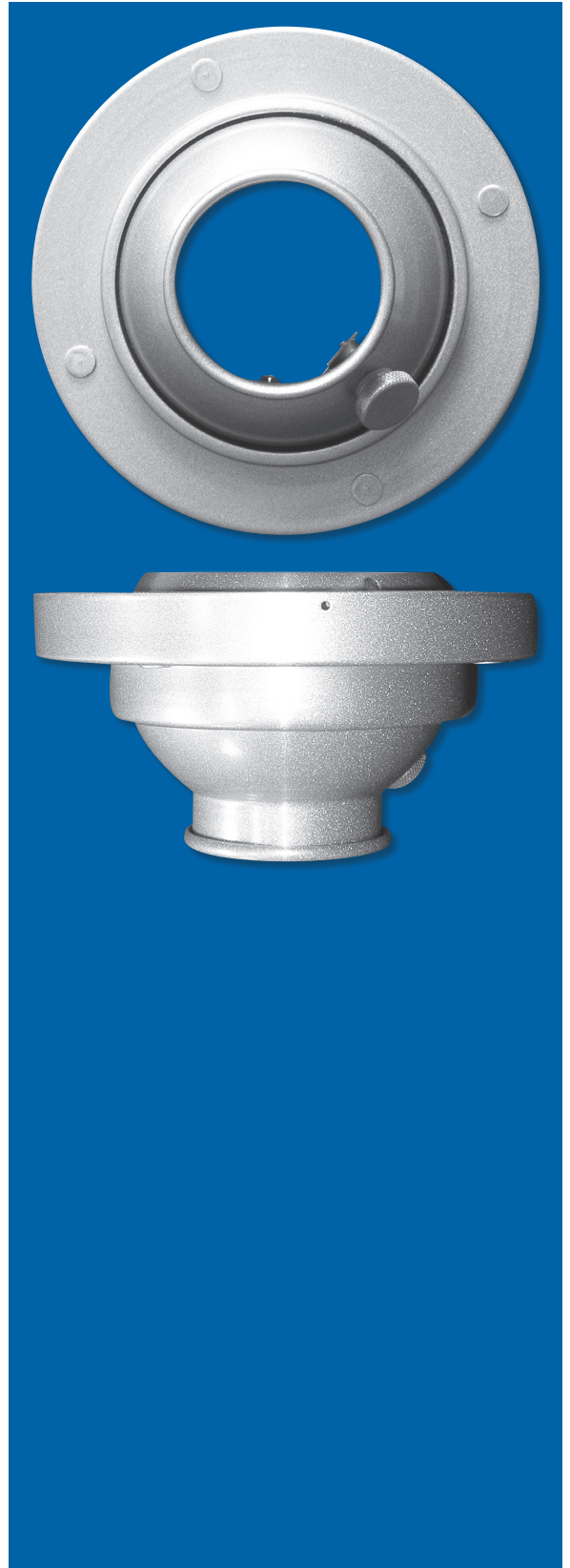
COMPATIBLE OPTIONS AND ACCESSORIES

- Aluminum aperture damper with stainless steel hardware ²

NOTES:

¹ Nominal size and duct size are not the same.

² Aperture damper must be ordered with unit; cannot be field installed.

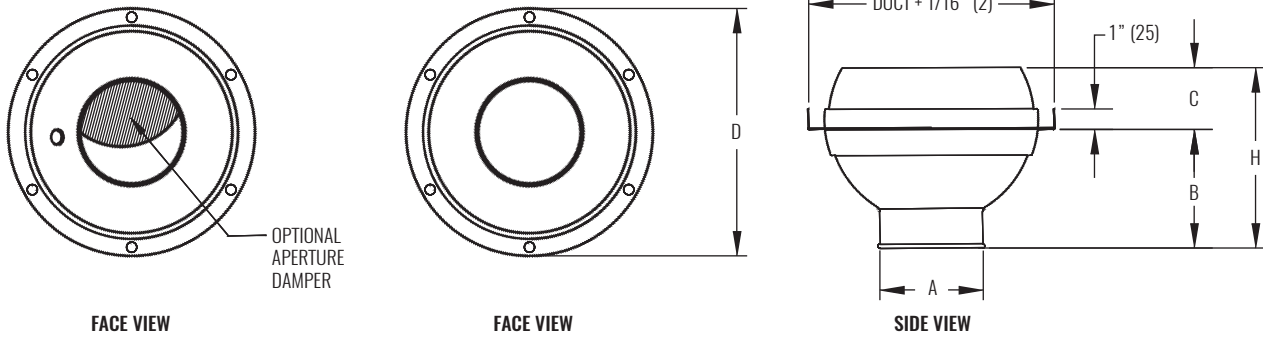


RPNRD

Punkah Nozzle, Round Duct



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS				
	NC (< 25)		NC (25 - 40)		A	B	C	DUCT D	H
	CFM	THROW (ft)	CFM	THROW (ft)					
6"	59 - 137	16 - 25	147 - 216	25 - 31	3" (76)	3 1/16" (78)	1 7/16" (37)	8" (203)	4 1/2" (114)
8"	105 - 244	21 - 33	261 - 384	34 - 41	4 3/8" (111)	4 1/4" (108)	1 3/4" (44)	10" (254)	6" (152)
10"	164 - 372	27 - 40	395 - 600	42 - 51	5 3/4" (146)	5 1/2" (140)	2 7/8" (73)	12" (305)	8 3/8" (213)
12"	236 - 530	32 - 48	570 - 864	50 - 62	7 3/8" (187)	6" (152)	3" (76)	14" (356)	9" (229)
14"	321 - 725	38 - 56	770 - 1176	58 - 72	8 5/8" (219)	7 1/8" (181)	4 1/8" (105)	16" (406)	11 1/4" (286)
16"	419 - 949	43 - 65	1000 - 1535	67 - 82	9 3/4" (248)	8 1/4" (210)	4 3/4" (121)	18" (457)	13" (330)
18"	530 - 1165	48 - 71	1236 - 1854	74 - 90	10 1/2" (267)	9 1/2" (241)	4 1/4" (108)	20" (508)	13 3/4" (349)
20"	654 - 1438	54 - 79	1526 - 2289	82 - 100	12 3/8" (314)	10 7/8" (276)	4 7/8" (124)	22" (559)	15 3/4" (400)

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

¹ Nominal size is 2" (51) smaller than the duct size to which it mounts. Example: A nominal size 10 mounts on a 12" (305) duct.

MODEL

- RPNRR - Round punkah nozzle with round duct reducer

FEATURES

- Aluminum construction
- Mounting screws included
- Directional air pattern control (70° global rotation)
- For use in stub duct applications

SIZES

- Round: 6" - 20" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

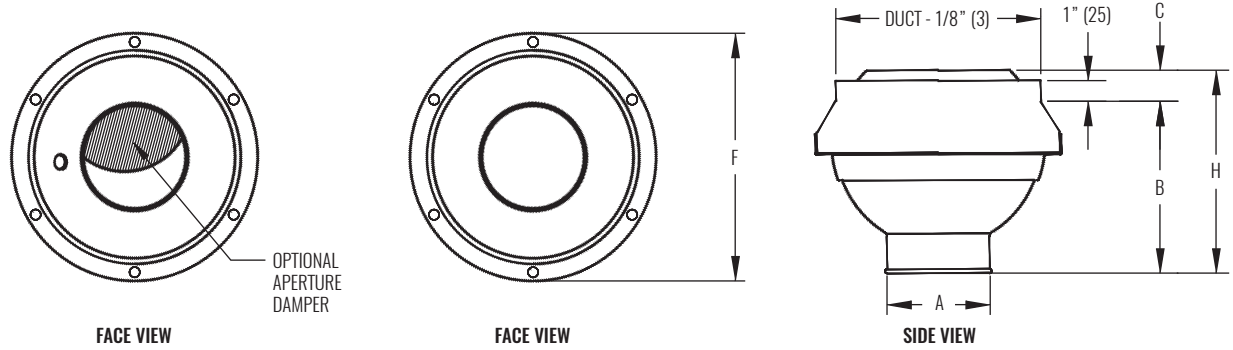
- Aluminum aperture damper with stainless steel hardware ¹

NOTES:

- ¹ Aperture damper must be ordered with unit; cannot be field installed.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS					
	NC (< 25)		NC (25 - 40)		A	B	C	DUCT D	F	H
	CFM	THROW (ft)	CFM	THROW (ft)						
6"	59 - 137	16 - 25	147 - 216	25 - 31	3" (76)	5 9/16" (141)	1" (25)	6" (152)	8" (203)	6 9/16" (167)
8"	105 - 244	21 - 33	261 - 384	34 - 41	4 3/8" (111)	6 3/4" (171)	1" (25)	8" (203)	10" (254)	7 3/4" (197)
10"	164 - 372	27 - 40	395 - 600	42 - 51	5 3/4" (146)	8" (203)	1" (25)	10" (254)	12" (305)	9" (229)
12"	236 - 530	32 - 48	570 - 864	50 - 62	7 3/8" (187)	8 1/2" (216)	1" (25)	12" (305)	14" (356)	9 1/2" (241)
14"	321 - 725	38 - 56	770 - 1176	58 - 72	8 5/8" (219)	9 5/8" (244)	1 5/8" (41)	14" (356)	16" (406)	11 1/4" (286)
16"	419 - 949	43 - 65	1000 - 1535	67 - 82	9 3/4" (248)	10 3/4" (273)	2 1/4" (57)	16" (406)	18" (457)	13" (330)
18"	530 - 1165	48 - 71	1236 - 1854	74 - 90	10 1/2" (267)	12" (305)	1 3/4" (44)	18" (457)	20" (508)	13 3/4" (349)
20"	654 - 1438	54 - 79	1526 - 2289	82 - 100	12 3/8" (314)	13 3/8" (340)	2 3/8" (60)	20" (508)	22" (559)	15 3/4" (400)

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- RPN2P - Two round pukah nozzles in a panel
- RPN4P - Four round pukah nozzles in a panel

FEATURES

- Aluminum construction
- Foam gasket and mounting screws included
- Directional air pattern control (70° global rotation)
- For use in surface mount applications

RPN2P SIZES

- 18"x10" - 16"x8" duct size
- 24"x12" - 22"x10" duct size
- 28"x14" - 26"x12" duct size
- 32"x16" - 30"x14" duct size

RPN4P SIZES

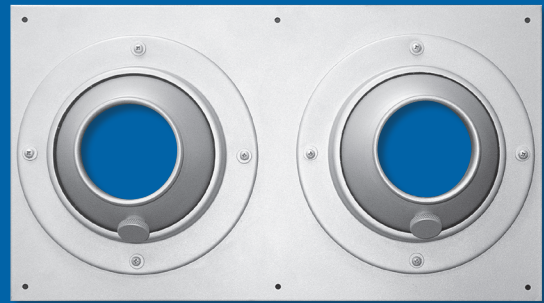
- 18"x18" - 16"x16" duct size
- 24"x24" - 22"x22" duct size
- 28"x28" - 26"x26" duct size
- 32"x32" - 30"x30" duct size

COMPATIBLE OPTIONS AND ACCESSORIES

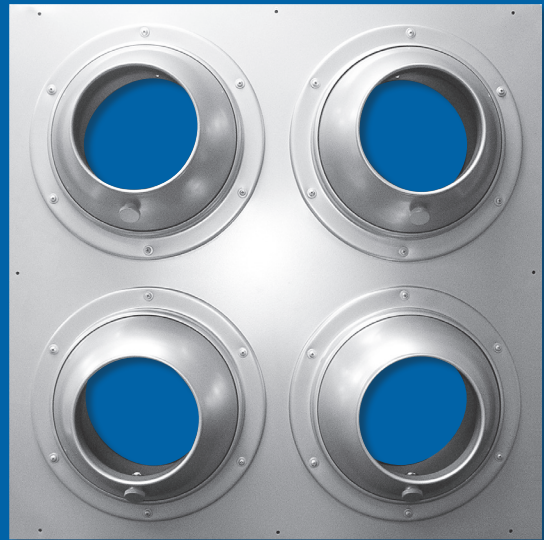
- Aluminum aperture damper with stainless steel hardware ¹
- Stainless steel panel construction

NOTES:

- ¹ Aperture damper must be ordered with unit; cannot be field installed.



RPN2P



RPN4P

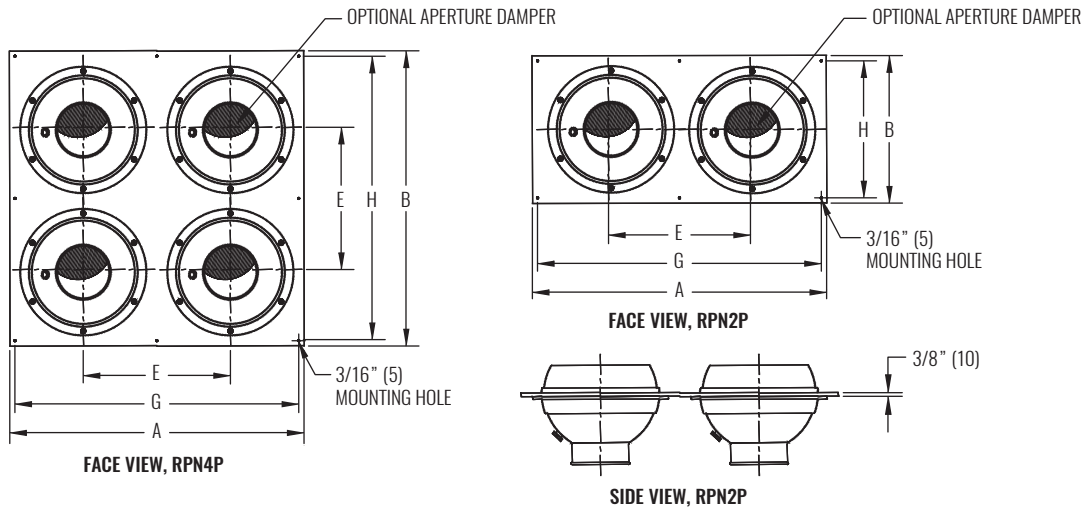


RPN2P / RPN4P

Multiple Pukah Nozzle Panels



DIMENSIONAL DATA



SIZE / QUANTITY			DIMENSIONS		
PANEL - A x B	DUCT	RPN PER PANEL	E	G	H
18"x10" (457x254)	16"x8" (406x203)	QTY 2, 6" (152)	9 1/2" (241)	17" (432)	9" (229)
24"x12" (610x305)	22"x10" (559x254)	QTY 2, 8" (203)	11 1/2" (292)	23" (584)	11" (279)
28"x14" (711x356)	26"x12" (660x305)	QTY 2, 10" (254)	13 1/2" (343)	27" (686)	13" (330)
32"x16" (813x406)	30"x14" (762x356)	QTY 2, 12" (305)	15 1/2" (394)	31" (787)	15" (381)
18"x18" (457x457)	16"x16" (406x406)	QTY 4, 6" (152)	9 1/2" (241)	17" (432)	17" (432)
24"x24" (610x610)	22"x22" (559x559)	QTY 4, 8" (203)	11 1/2" (292)	23" (584)	23" (584)
28"x28" (711x711)	26"x26" (660x660)	QTY 4, 10" (254)	13 1/2" (343)	27" (686)	27" (686)
32"x32" (813x813)	30"x30" (762x762)	QTY 4, 12" (305)	15 1/2" (394)	31" (787)	31" (787)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - PER NOZZLE			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
6"	59 - 137	16 - 25	147 - 216	25 - 31
8"	105 - 244	21 - 33	261 - 384	34 - 41
10"	164 - 372	27 - 40	395 - 600	42 - 51
12"	236 - 530	32 - 48	570 - 864	50 - 62

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). performance data is given per nozzle. Panel size dictates nozzle size, see table above. Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- RPNLP - Round punkah nozzle in panel

FEATURES

- Aluminum construction
- Foam gasket and mounting screws included
- Integral flex duct mounting ring included
- Directional air pattern control (70° global rotation)
- For use in lay-in ceiling applications

SIZES

- Round: 6" - 12" nominal size (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

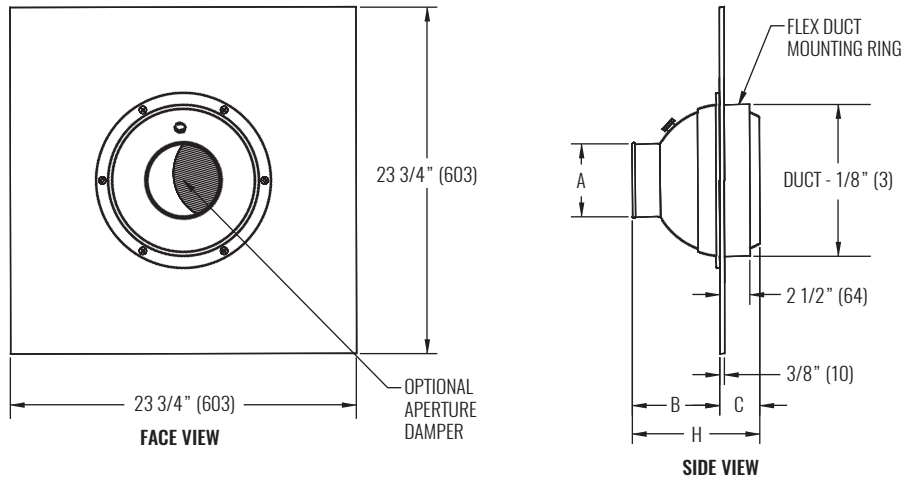
- Aluminum aperture damper with stainless steel hardware ¹

NOTES:

- ¹ Aperture damper must be ordered with unit; cannot be field installed.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS				
	NOMINAL	NC (< 25)		NC (25 - 40)		A	B	C	DUCT D
CFM		THROW (ft)	CFM	THROW (ft)					
6"	59 - 137	16 - 25	147 - 216	25 - 31	3" (76)	3 3/8" (86)	2 1/2" (64)	6" (152)	5 7/8" (149)
8"	105 - 244	21 - 33	261 - 384	34 - 41	4 3/8" (111)	4 9/16" (116)	2 1/2" (64)	8" (203)	7 1/16" (179)
10"	164 - 372	27 - 40	395 - 600	42 - 51	5 3/4" (146)	5 13/16" (148)	2 9/16" (65)	10" (254)	8 3/8" (213)
12"	236 - 530	32 - 48	570 - 864	50 - 62	7 3/8" (187)	6 5/16" (160)	2 11/16" (68)	12" (305)	9" (229)

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- K-JET - Jet nozzle with retaining ring
- K-JETA - Jet nozzle with retaining ring and adjustable concentric ring core with 60° directional adjustment

FEATURES

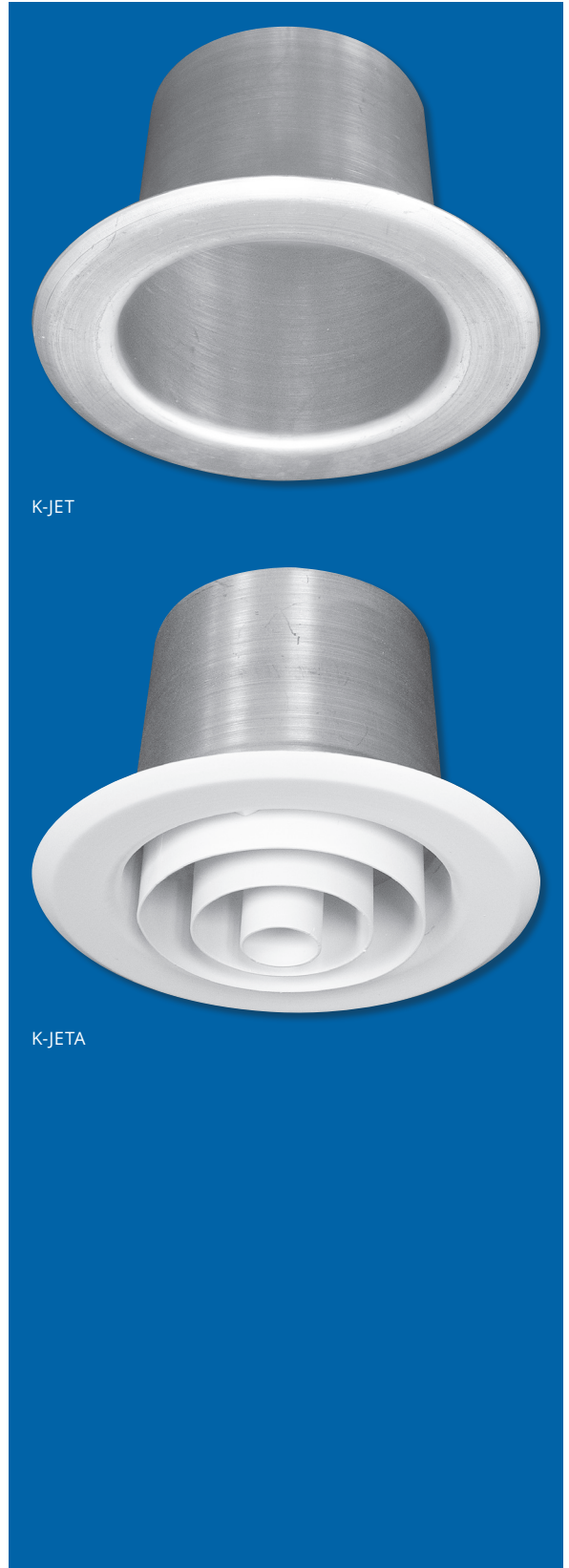
- Spun aluminum construction
- K-JETA concentric rings are steel construction
- Excellent choice for a range of applications, including new or retrofit construction, vertical/horizontal projection air systems, perimeter heating only - vertical air systems, perimeter heating/cooling - vertical air systems, and return and exhaust

DIAMETER

- K-JET - Round: 3", 4", 5", 6", 8"
- K-JETA - Round: 3", 4", 5", 6", 8", 10", 12"

COMPATIBLE OPTIONS AND ACCESSORIES

- Countersunk screw holes in the outer flange to secure the unit to ceiling or wall
- Retaining ring fastening



K-JET

K-JETA

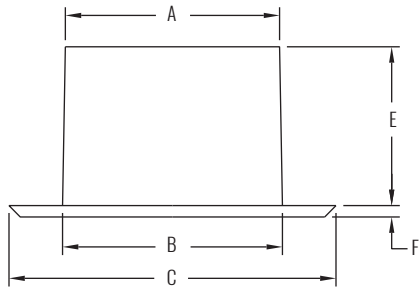
WEB SEARCH: K-JET or K-JETA

K-JET / K-JETA

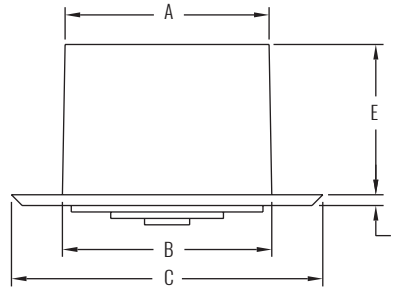
Jet Nozzles



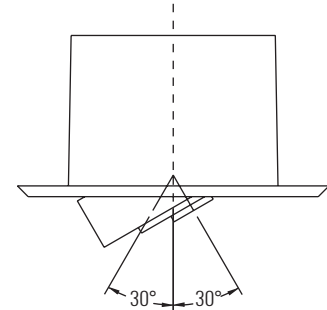
DIMENSIONAL DATA



K-JET



K-JETA



K-JETA

NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE								DIMENSIONS				
	NC (< 25)				NC (25 - 40)				A	B	C	E	F
NOMINAL	CFM	-20°ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)	CFM	-20° ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)					
MODEL: K-JET													
3"	20 - 76	7 - 18	7 - 16	7 - 13	82 - 125	19 - 24	17 - 21	14 - 17	2 3/4" (70)	3 1/4" (83)	5 1/4" (133)	3 1/2" (89)	1/4" (6)
4"	35 - 105	10 - 22	10 - 19	9 - 16	122 - 192	24 - 30	21 - 26	17 - 22	3 3/4" (95)	3 7/8" (98)	6" (152)	3 1/2" (89)	1/4" (6)
5"	55 - 147	10 - 26	10 - 23	9 - 19	164 - 245	27 - 34	24 - 30	20 - 24	4 3/4" (121)	4 7/8" (124)	7 1/4" (184)	4" (102)	1/4" (6)
6"	79 - 183	15 - 29	15 - 25	13 - 21	196 - 314	30 - 38	26 - 33	22 - 28	5 3/4" (146)	5 7/8" (149)	8 1/4" (210)	2 1/4" (57)	1/4" (6)
MODEL: K-JETA													
3"	20 - 65	7 - 17	7 - 15	7 - 13	74 - 110	19 - 22	17 - 20	14 - 16	2 3/4" (70)	3 1/4" (83)	5 1/4" (133)	3 1/2" (89)	1/4" (6)
4"	35 - 93	10 - 20	10 - 18	9 - 15	105 - 157	22 - 27	19 - 24	16 - 20	3 3/4" (95)	3 7/8" (98)	6" (152)	3 1/2" (89)	1/4" (6)
5"	41 - 120	6 - 23	6 - 21	6 - 17	136 - 204	25 - 31	22 - 27	18 - 23	4 3/4" (121)	4 7/8" (124)	7 1/4" (184)	4" (102)	1/4" (6)
6"	59 - 152	11 - 26	11 - 23	10 - 19	160 - 255	28 - 35	25 - 30	21 - 25	5 3/4" (146)	5 7/8" (149)	8 1/4" (210)	2 1/4" (57)	1/4" (6)

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- CRN - Steel concentric ring nozzle for surface mount
- 5CRN - Aluminum concentric ring nozzle for surface mount

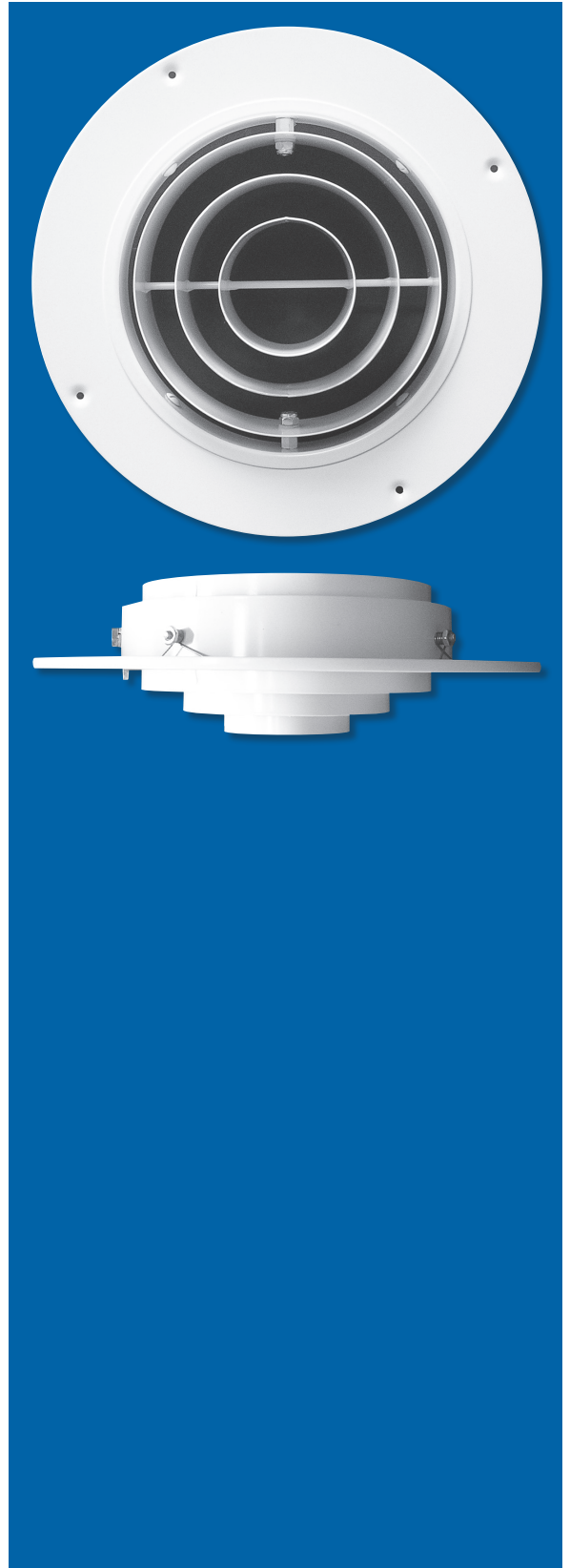
FEATURES

- Steel or aluminum construction
- Directional air pattern control (60° axial adjustment with 360° of rotation)
- For use in surface mount applications

SIZES

- Round: 4" - 24" (2" increments)¹

NOTES: ¹ Nominal size and duct size are not the same.

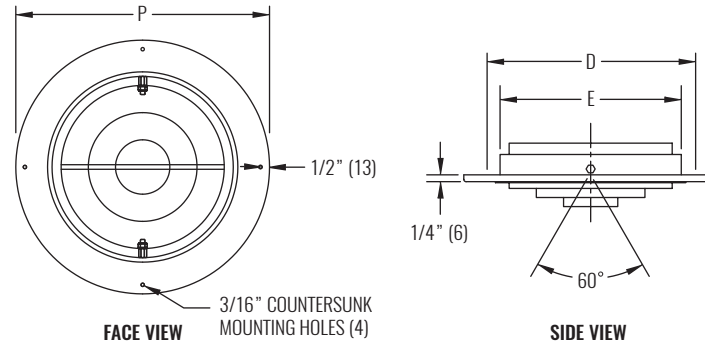


CRN / 5CRN

Concentric Ring, Surface Mount



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE								DIMENSIONS			
	NC (< 25)				NC (25 - 40)				ELEMENT E	DUCT D	P	NUMBER OF RINGS
NOMINAL ¹	CFM	-20°ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)	CFM	-20° ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)				
4"	22 - 122	6 - 24	6 - 21	6 - 17	131 - 200	25 - 30	22 - 27	18 - 22	4" (102)	6" (152)	8" (203)	3
6"	49 - 249	9 - 33	9 - 29	8 - 24	264 - 421	35 - 43	30 - 38	25 - 32	6" (152)	8" (203)	10" (254)	3
8"	87 - 407	12 - 43	12 - 38	11 - 31	420 - 664	44 - 55	39 - 49	32 - 40	8" (203)	10" (254)	12" (305)	3
10"	136 - 590	15 - 52	15 - 46	14 - 38	614 - 972	53 - 67	47 - 59	39 - 49	10" (254)	12" (305)	14" (356)	3
12"	196 - 785	18 - 60	18 - 53	17 - 44	810 - 1327	61 - 78	54 - 69	44 - 57	12" (305)	14" (356)	16" (406)	3
14"	267 - 1069	21 - 70	21 - 62	20 - 51	1107 - 1604	71 - 86	63 - 76	52 - 62	14" (356)	16" (406)	18" (457)	4
16"	349 - 1308	25 - 76	25 - 68	22 - 56	1396 - 2094	80 - 98	71 - 86	58 - 71	16" (406)	18" (457)	20" (508)	4
18"	442 - 1611	28 - 84	28 - 75	25 - 62	1767 - 2651	90 - 110	79 - 97	65 - 80	18" (457)	20" (508)	22" (559)	4
20"	545 - 1939	31 - 94	31 - 83	28 - 69	2060 - 3272	97 - 123	85 - 108	71 - 89	20" (508)	22" (559)	24" (610)	5
22"	660 - 1980	34 - 95	34 - 84	31 - 69	2640 - 3300	110 - 123	97 - 108	80 - 89	22" (559)	24" (610)	26" (660)	5
24"	785 - 2356	37 - 104	37 - 92	34 - 76	3142 - 3927	120 - 134	106 - 118	87 - 98	24" (610)	26" (660)	28" (711)	5

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

¹ Nominal size is 2" (51) smaller than the duct size to which it mounts. Example: A nominal size 10 mounts on a 12" (305) duct.

MODEL

- CRNRD - Steel concentric ring nozzle with round duct adapter
- 5CRNRD - Aluminum concentric ring nozzle with round duct adapter

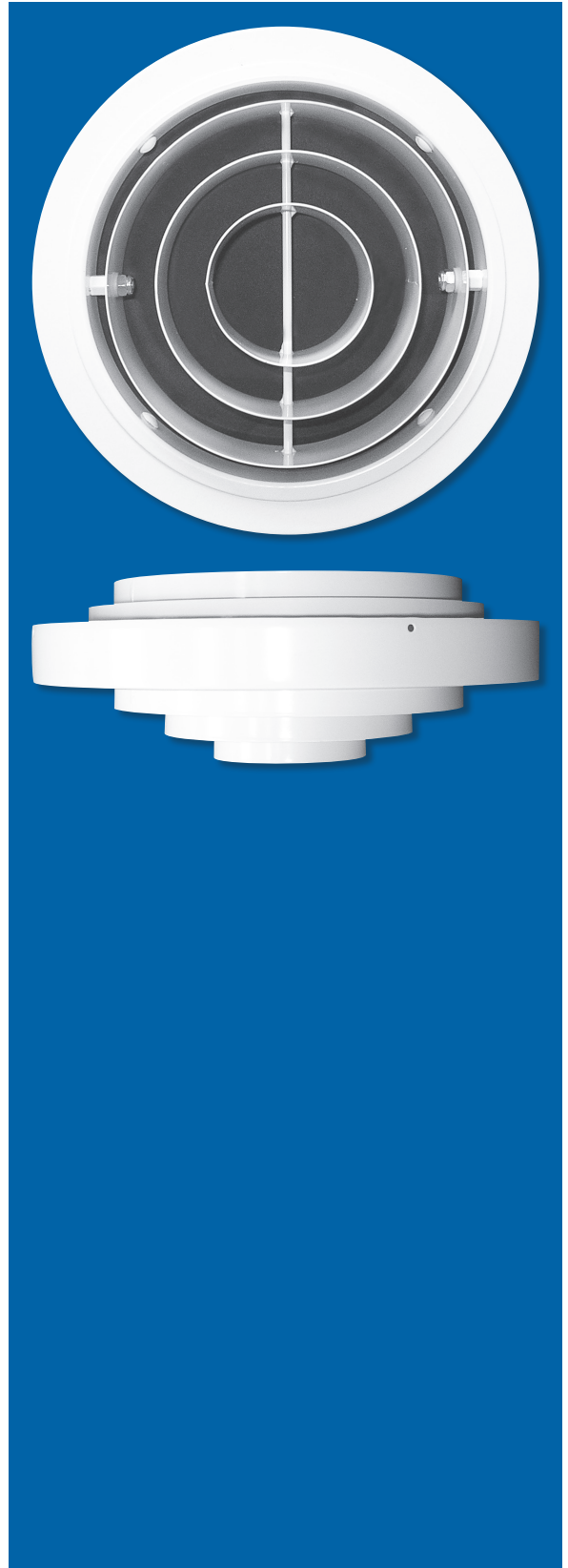
FEATURES

- Steel or aluminum construction
- Directional air pattern control (60° axial adjustment with 360° of rotation)
- For use in duct mount applications

SIZES

- Round: 4" - 24" (2" increments), 5" ¹

NOTES: ¹ Nominal size and duct size are not the same.

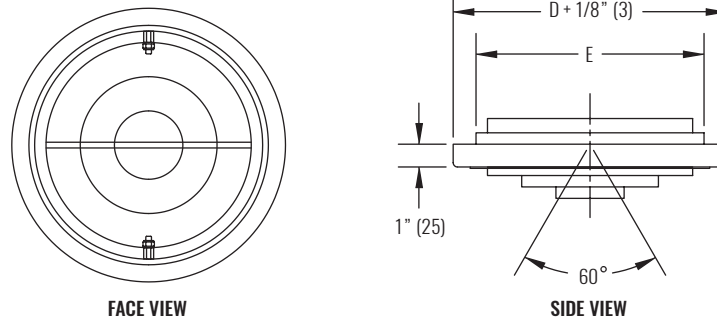
**WEB SEARCH:** CRNRD or 5CRNRD

CRNRD / 5CRNRD

Concentric Ring, Round Duct



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE								DIMENSIONS		
	NOMINAL ¹	NC (< 25)				NC (25 - 40)				ELEMENT E	DUCT D
CFM		-20°ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)	CFM	-20° ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)			
4"	22 - 122	6 - 24	6 - 21	6 - 17	131 - 200	25 - 30	22 - 27	18 - 22	4" (102)	6" (152)	3
5"	34 - 182	8 - 29	8 - 25	7 - 22	194 - 292	30 - 36	26 - 32	21 - 27	5" (127)	6" (152)	3
6"	49 - 249	9 - 33	9 - 29	8 - 24	264 - 421	35 - 43	30 - 38	25 - 32	6" (152)	8" (203)	3
8"	87 - 407	12 - 43	12 - 38	11 - 31	420 - 664	44 - 55	39 - 49	32 - 40	8" (203)	10" (254)	3
10"	136 - 590	15 - 52	15 - 46	14 - 38	614 - 972	53 - 67	47 - 59	39 - 49	10" (254)	12" (305)	3
12"	196 - 785	18 - 60	18 - 53	17 - 44	810 - 1327	61 - 78	54 - 69	44 - 57	12" (305)	14" (356)	3
14"	267 - 1069	21 - 70	21 - 62	20 - 51	1107 - 1604	71 - 86	63 - 76	52 - 62	14" (356)	16" (406)	4
16"	349 - 1308	25 - 76	25 - 68	22 - 56	1396 - 2094	80 - 98	71 - 86	58 - 71	16" (406)	18" (457)	4
18"	442 - 1611	28 - 84	28 - 75	25 - 62	1767 - 2651	90 - 110	79 - 97	65 - 80	18" (457)	20" (508)	4
20"	545 - 1939	31 - 94	31 - 83	28 - 69	2060 - 3272	97 - 123	85 - 108	71 - 89	20" (508)	22" (559)	5
22"	660 - 1980	34 - 95	34 - 84	31 - 69	2640 - 3300	110 - 123	97 - 108	80 - 89	22" (559)	24" (610)	5
24"	785 - 2356	37 - 104	37 - 92	34 - 76	3142 - 3927	120 - 134	106 - 118	87 - 98	24" (610)	26" (660)	5

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

¹ Nominal size is 2" (51) smaller than the duct size to which it mounts. Example: A nominal size 10 mounts on a 12" (305) duct.

MODEL

- CRNRR - Steel concentric ring nozzle with round duct reducer
- 5CRNRR - Aluminum concentric ring nozzle with round duct reducer

FEATURES

- Steel or aluminum construction
- Directional air pattern control (60° axial adjustment with 360° of rotation)
- For use in stub duct applications

SIZES

- Round: 6" - 18" (2" increments)



DIFFUSERS | AIR NOZZLES

CRNRR / 5CRNRR

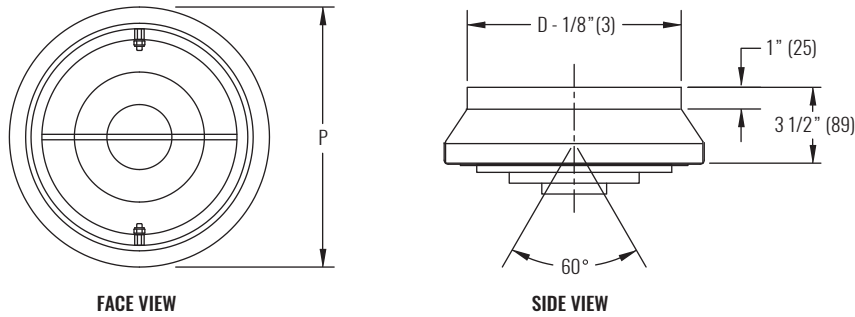


CRNRR / 5CRNRR

Concentric Ring, Round Reducer



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE								DIMENSIONS		
	NC (< 25)				NC (25 - 40)				ELEMENT SIZE	DUCT D	P
NOMINAL	CFM	-20°ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)	CFM	-20° ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)			
6"	49 - 249	9 - 33	9 - 29	8 - 24	264 - 421	35 - 43	30 - 38	25 - 32	3" (76)	6" (152)	8 1/8" (206)
8"	87 - 407	12 - 43	12 - 38	11 - 31	420 - 664	44 - 55	39 - 49	32 - 40	4 3/8" (111)	8" (203)	10 1/8" (257)
10"	136 - 590	15 - 52	15 - 46	14 - 38	614 - 972	53 - 67	47 - 59	39 - 49	5 3/4" (146)	10" (254)	12 1/8" (308)
12"	196 - 785	18 - 60	18 - 53	17 - 44	810 - 1327	61 - 78	54 - 69	44 - 57	7 3/8" (187)	12" (305)	14 1/8" (359)
14"	267 - 1069	21 - 70	21 - 62	20 - 51	1107 - 1604	71 - 86	63 - 76	52 - 62	8 5/8" (219)	14" (356)	16 1/8" (410)
16"	349 - 1308	25 - 76	25 - 68	22 - 56	1396 - 2094	80 - 98	71 - 86	58 - 71	9 3/4" (248)	16" (406)	18 1/8" (460)
18"	442 - 1611	28 - 84	28 - 75	25 - 62	1767 - 2651	90 - 110	79 - 97	65 - 80	10 1/2" (267)	18" (457)	20 1/8" (511)

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- CRNP - Concentric ring nozzle, panel mounted
- 5CRNP - Concentric ring nozzle, panel mounted

FEATURES

- Steel (CRNP) or aluminum (5CRNP) construction
- Directional air pattern control (60° axial adjustment with 360° of rotation)
- For use in surface mount applications

SIZES¹

- Round: 4" - 24" (2" increments), 5"^{1 2}

PANELS

- 1 - Single unit per panel²
- 2 - Two units per panel
- 3 - Three units per panel
- 4 - Four units per panel

NOTES:

¹ Nominal size and duct size are not the same.

² Sizes 20, 22, and 24 only available with Panel 1.

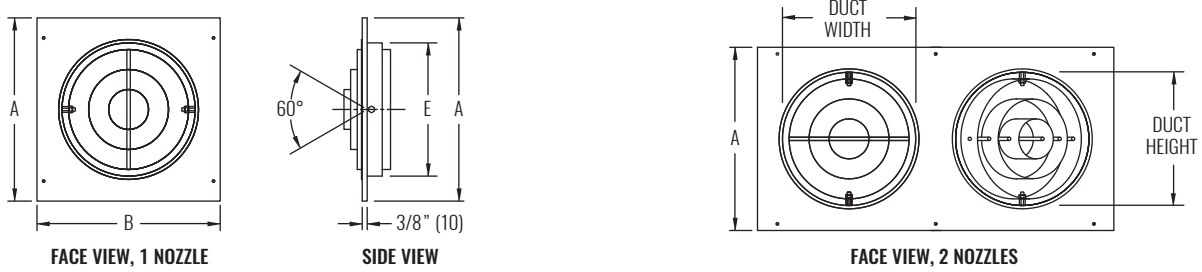


CRNP / 5CRNP

Concentric Ring, Panel Mount



DIMENSIONAL DATA



SIZE	DIMENSIONS					
NOM.	NO. OF NOZZLES	E	A	B	DUCT H	DUCT W
5"	1	5" (127)	10" (254)	10" (254)	8" (203)	8" (203)
6"	1	6" (152)	10" (254)	10" (254)	8" (203)	8" (203)
8"	1	8" (203)	12" (305)	12" (305)	10" (254)	10" (254)
10"	1	10" (254)	14" (356)	14" (356)	12" (305)	12" (305)
12"	1	12" (305)	16" (406)	16" (406)	14" (356)	14" (356)
14"	1	14" (356)	18" (457)	18" (457)	16" (406)	16" (406)

SIZE	DIMENSIONS					
NOM.	NO. OF NOZZLES	E	A	B	DUCT H	DUCT W
5"	2	5" (127)	10" (254)	18" (457)	8" (203)	16" (406)
6"	2	6" (152)	10" (254)	19" (483)	8" (203)	17" (432)
8"	2	8" (203)	12" (305)	24" (610)	10" (254)	22" (559)
10"	2	10" (254)	14" (356)	27" (686)	12" (305)	25" (635)
12"	2	12" (305)	16" (406)	31" (787)	14" (356)	29" (737)
14"	2	14" (356)	18" (457)	35" (889)	16" (406)	33" (838)

NOTES: Dimensions in parentheses are millimeters (mm). Number of rings varies with element size. See website for 3 and 4 element panel dimensional data.

PERFORMANCE DATA

SIZE	PERFORMANCE							
	NC (< 25)				NC (25 - 40)			
NOMINAL ¹	CFM	-20°ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)	CFM	-20° ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)
4"	22 - 122	6 - 24	6 - 21	6 - 17	131 - 200	25 - 30	22 - 27	18 - 22
5"	34 - 182	8 - 29	8 - 25	7 - 22	194 - 292	30 - 36	26 - 32	21 - 27
6"	49 - 249	9 - 33	9 - 29	8 - 24	264 - 421	35 - 43	30 - 38	25 - 32
8"	87 - 407	12 - 43	12 - 38	11 - 31	420 - 664	44 - 55	39 - 49	32 - 40
10"	136 - 590	15 - 52	15 - 46	14 - 38	614 - 972	53 - 67	47 - 59	39 - 49
12"	196 - 785	18 - 60	18 - 53	17 - 44	810 - 1327	61 - 78	54 - 69	44 - 57
14"	267 - 1069	21 - 70	21 - 62	20 - 51	1107 - 1604	71 - 86	63 - 76	52 - 62
16"	349 - 1308	25 - 76	25 - 68	22 - 56	1396 - 2094	80 - 98	71 - 86	58 - 71
18"	442 - 1611	28 - 84	28 - 75	25 - 62	1767 - 2651	90 - 110	79 - 97	65 - 80
20"	545 - 1939	31 - 94	31 - 83	28 - 69	2060 - 3272	97 - 123	85 - 108	71 - 89
22"	660 - 1980	34 - 95	34 - 84	31 - 69	2640 - 3300	110 - 123	97 - 108	80 - 89
24"	785 - 2356	37 - 104	37 - 92	34 - 76	3142 - 3927	120 - 134	106 - 118	87 - 98

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Performance data given per element. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

¹ Nominal size is 2" (51) smaller than the duct height to which it mounts. The duct width depends on the number of elements.

MODEL

- CRNLP - Steel concentric ring nozzle, lay-in T-bar
- 5CRNLP - Aluminum concentric ring nozzle, lay-in T-bar

FEATURES

- Steel (CRNLP) or aluminum (5CRNLP) construction
- Directional air pattern control (60° axial adjustment with 360° of rotation)
- Lay-in T-bar, 24"x24" panel

SIZES

- Round: 6" - 14" (2" increments) ¹

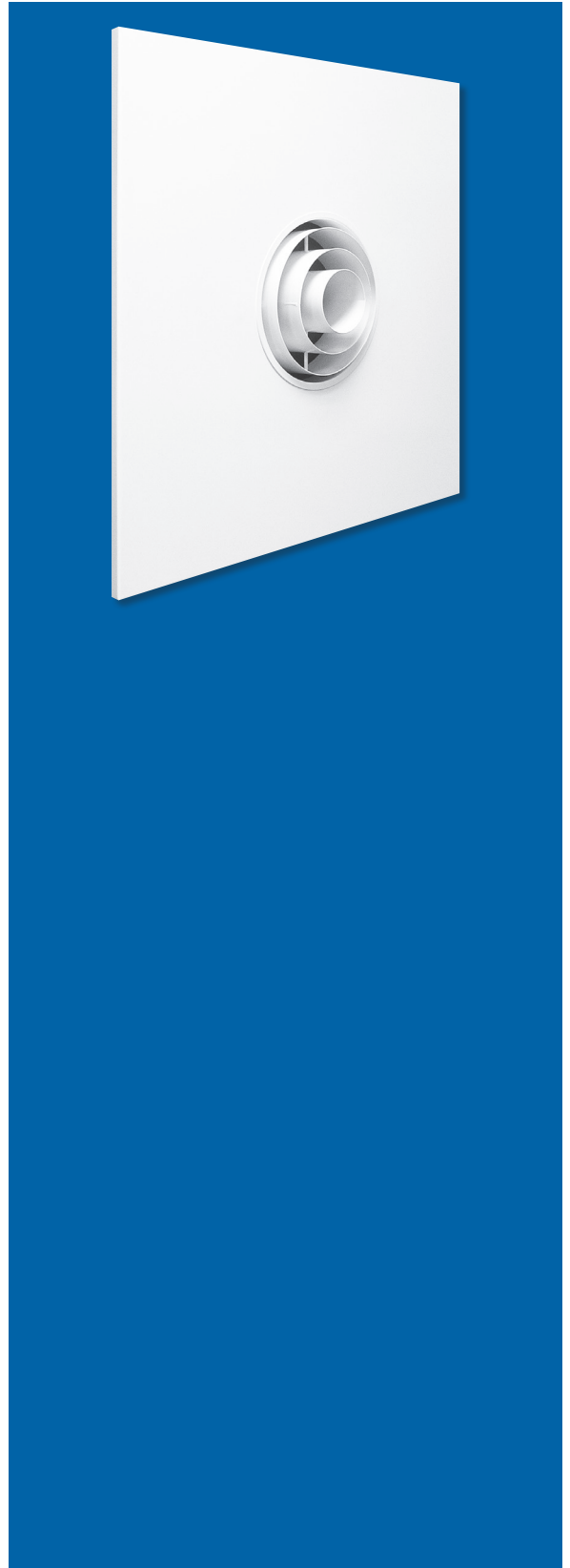
PANEL SIZES

- 24"x24"

FRAME STYLES

- F23 - Lay-in T-bar

NOTE: ¹ Nominal size and duct size are not the same.

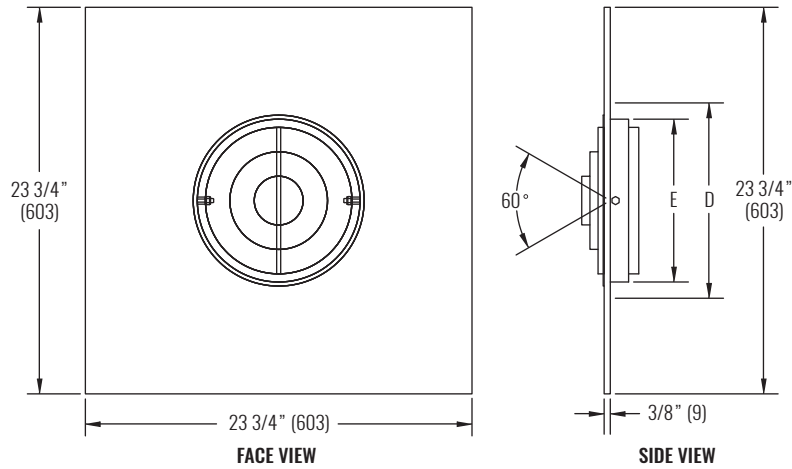


CRNLP / 5CRNLP

Concentric Ring, Lay-in T-bar



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE								DIMENSIONS		
	NC (< 25)				NC (25 - 40)				ELEMENT E	DUCT D	NUMBER OF RINGS
NOMINAL ¹	CFM	-20°ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)	CFM	-20° ΔT VERTICAL THROW (ft)	ISOTHERMAL THROW (ft)	+20° ΔT VERTICAL THROW (ft)			
6"	49 - 249	9 - 33	9 - 29	8 - 24	264 - 421	35 - 43	30 - 38	25 - 32	6" (152)	8" (203)	3
8"	87 - 407	12 - 43	12 - 38	11 - 31	420 - 664	44 - 55	39 - 49	32 - 40	8" (203)	10" (254)	3
10"	136 - 590	15 - 52	15 - 46	14 - 38	614 - 972	53 - 67	47 - 59	39 - 49	10" (254)	12" (305)	3
12"	196 - 785	18 - 60	18 - 53	17 - 44	810 - 1327	61 - 78	54 - 69	44 - 57	12" (305)	14" (356)	3
14"	267 - 1069	21 - 70	21 - 62	20 - 51	1107 - 1604	71 - 86	63 - 76	52 - 62	14" (356)	16" (406)	4

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

¹ Nominal size is 2" (51) smaller than the duct size to which it mounts. Example: A nominal size 10 mounts on a 12" (305) duct.

MODEL

- R580 - Aluminum, round single deflection airfoil blade grille
- R5880 - Aluminum, round double deflection airfoil blade grille

FEATURES

- Aluminum construction
- 1" blade spacing
- Easy finger tip adjustment
- For use in surface mount applications
- Concealed mounting system standard

GRILLE SIZES

- Round: 6" - 24" (2" increments)

**WEB SEARCH:** R580 or R5880

R580 / R5880

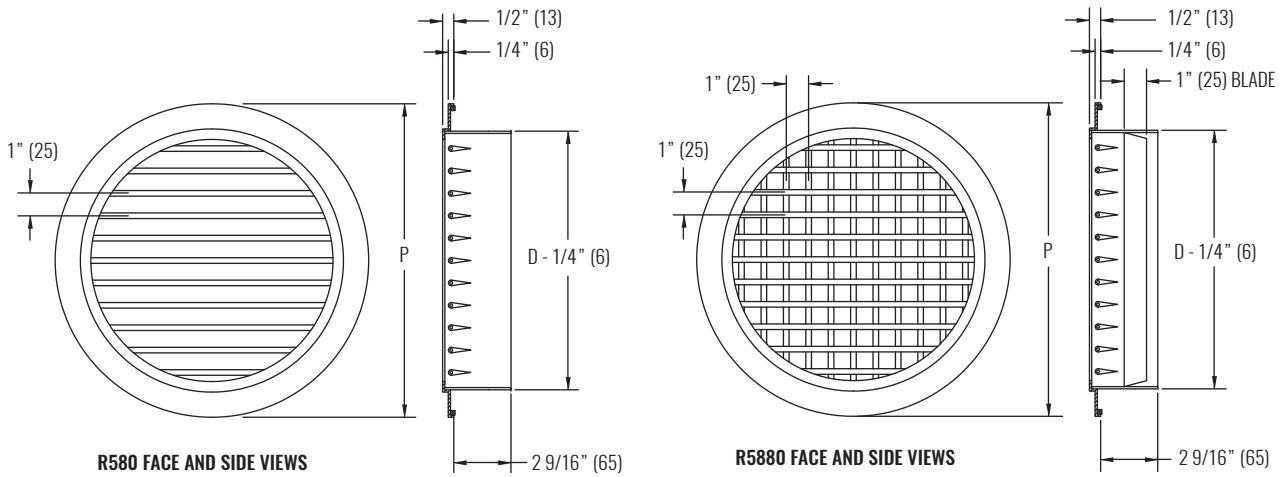
Round Single and Double Deflection Supply Grilles, Concealed Mount



GRILLES | ROUND

R580 / R5880

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustrations shown without concealed mounting ring. See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE								DIMENSIONS	
	NOMINAL	NC (< 25)			NC (25 - 40)				DUCT D	P
CFM		0° THROW (ft)	15° THROW (ft)	30° THROW (ft)	CFM	0° THROW (ft)	15° THROW (ft)	30° THROW (ft)		
6"	90 - 228	20 - 31	18 - 28	16 - 25	240 - 340	32 - 38	29 - 35	26 - 31	6" (152)	8 1/4" (210)
8"	175 - 396	28 - 41	25 - 38	23 - 34	415 - 598	42 - 51	39 - 46	35 - 42	8" (203)	10 1/4" (260)
10"	300 - 606	36 - 51	33 - 46	30 - 41	635 - 925	52 - 63	47 - 57	42 - 52	10" (254)	12 1/4" (311)
12"	400 - 850	42 - 61	38 - 55	34 - 50	907 - 1288	63 - 75	57 - 68	51 - 61	12" (305)	14 1/4" (362)
14"	600 - 1157	51 - 70	46 - 64	42 - 58	1229 - 1750	72 - 87	66 - 79	59 - 71	14" (356)	16 1/4" (413)
16"	750 - 1445	57 - 79	52 - 71	47 - 65	1537 - 2233	82 - 98	73 - 89	67 - 81	16" (406)	18 1/4" (464)
18"	1000 - 1826	66 - 88	60 - 80	54 - 72	1940 - 2764	91 - 109	82 - 99	74 - 89	18" (457)	20 1/4" (514)
20"	1200 - 2200	72 - 97	65 - 88	59 - 80	2334 - 3320	100 - 120	91 - 109	82 - 98	20" (508)	22 1/4" (565)
22"	1500 - 2654	81 - 107	73 - 97	66 - 87	2808 - 4000	120 - 132	99 - 119	90 - 108	22" (559)	24 1/4" (616)
24"	1800 - 3000	88 - 114	80 - 103	72 - 93	3273 - 4800	119 - 144	107 - 130	97 - 118	24" (610)	26 1/4" (667)

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- R580RD - Aluminum, round single deflection airfoil blade grille with round duct adapter
- R5880RD - Aluminum, round double deflection airfoil blade grille with round duct adapter

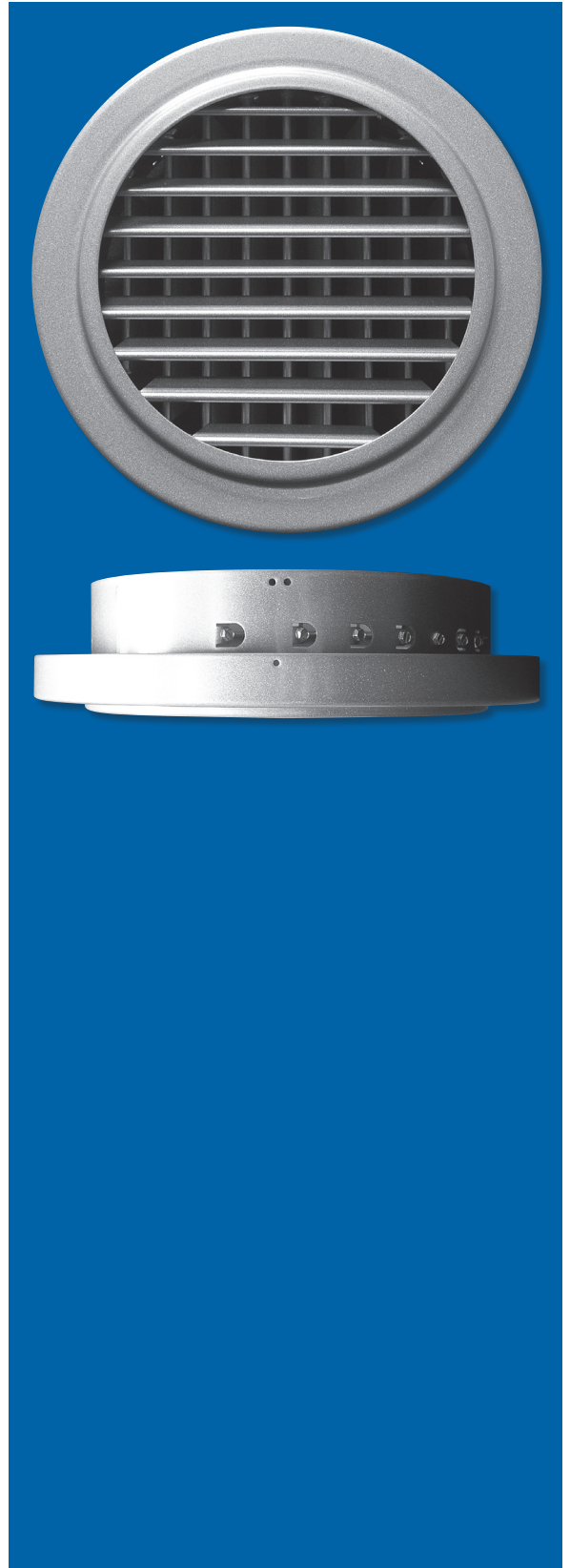
FEATURES

- Aluminum construction
- 1" blade spacing
- Easy finger tip adjustment
- For use in exposed duct mount applications
- Frame slides cleanly over end of exposed duct

GRILLE SIZES

- Round: 6" - 24" (2" increments) ¹

NOTES: ¹ Nominal size and duct size are not the same.



GRILLES | ROUND

R580RD / R5880RD

WEB SEARCH: R580RD or R5880RD

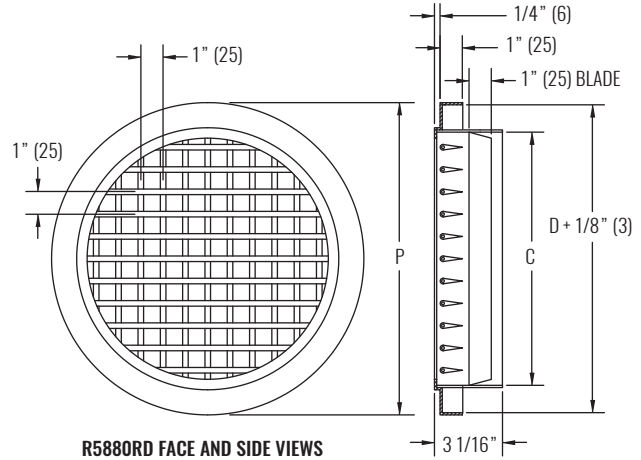
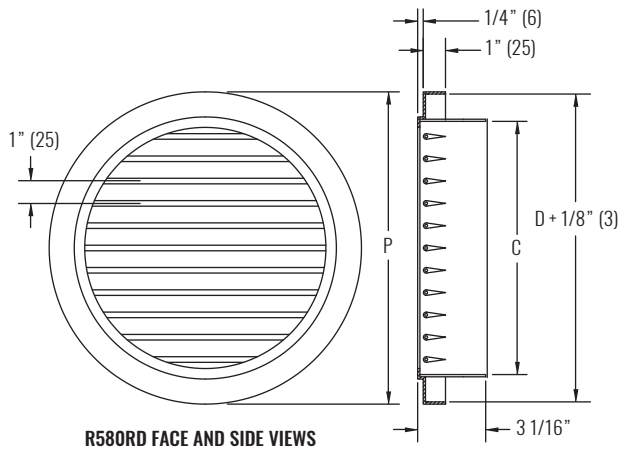
R580RD / R5880RD

Round Single and Double Deflection Grilles, Round Duct Adapter



GRILLES | ROUND

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE								DIMENSIONS		
	NC (< 25)				NC (25 - 40)				CORE C	DUCT D	P
NOMINAL ¹	CFM	0° THROW (ft)	15° THROW (ft)	30° THROW (ft)	CFM	0° THROW (ft)	15° THROW (ft)	30° THROW (ft)			
6"	90 - 228	20 - 31	18 - 28	16 - 25	240 - 350	32 - 38	29 - 35	26 - 32	5 7/8" (149)	8" (203)	8 1/4" (210)
8"	175 - 396	28 - 41	25 - 37	23 - 34	415 - 614	42 - 51	39 - 46	34 - 42	7 7/8" (200)	10" (254)	10 1/4" (260)
10"	300 - 606	36 - 51	33 - 46	30 - 41	635 - 950	52 - 64	47 - 58	42 - 52	9 7/8" (251)	12" (305)	12 1/4" (311)
12"	400 - 850	42 - 61	38 - 55	34 - 50	907 - 1325	63 - 76	57 - 68	51 - 62	11 7/8" (302)	14" (356)	14 1/4" (362)
14"	600 - 1157	51 - 70	46 - 64	42 - 57	1228 - 1800	72 - 88	66 - 80	59 - 72	13 7/8" (352)	16" (406)	16 1/4" (413)
16"	750 - 1445	57 - 79	52 - 71	47 - 65	1536 - 2300	81 - 100	73 - 90	67 - 82	15 7/8" (403)	18" (457)	18 1/4" (464)
18"	1000 - 1826	66 - 89	60 - 80	54 - 72	1940 - 2842	91 - 111	82 - 100	74 - 90	17 7/8" (454)	20" (508)	20 1/4" (514)
20"	1200 - 2200	72 - 97	65 - 88	59 - 80	2334 - 3320	100 - 120	91 - 109	82 - 98	19 7/8" (505)	22" (559)	22 1/4" (565)
22"	1500 - 2654	81 - 107	73 - 97	66 - 87	2808 - 4000	120 - 132	99 - 119	90 - 108	21 7/8" (556)	24" (610)	24 1/4" (616)
24"	1800 - 3000	88 - 114	80 - 103	72 - 93	3273 - 4800	119 - 144	107 - 130	97 - 118	23 7/8" (606)	26" (660)	26 1/4" (667)

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

¹ Nominal size is 2" (51) smaller than the duct size to which it mounts. Example: A nominal size 10 mounts on a 12" (305) duct.

MODEL

- R580RR - Aluminum, round single deflection airfoil blade grille with round duct reducer
- R5880RR - Aluminum, round double deflection airfoil blade grille with round duct reducer

FEATURES

- Aluminum construction
- 1" blade spacing
- Easy finger tip adjustment
- For use in exposed duct mount applications
- Frame slides cleanly into end of exposed duct

GRILLE SIZES

- Round: 6" - 24" (2" increments)



GRILLES | ROUND

R580RR / R5880RR

WEB SEARCH: R580RR or R5880RR

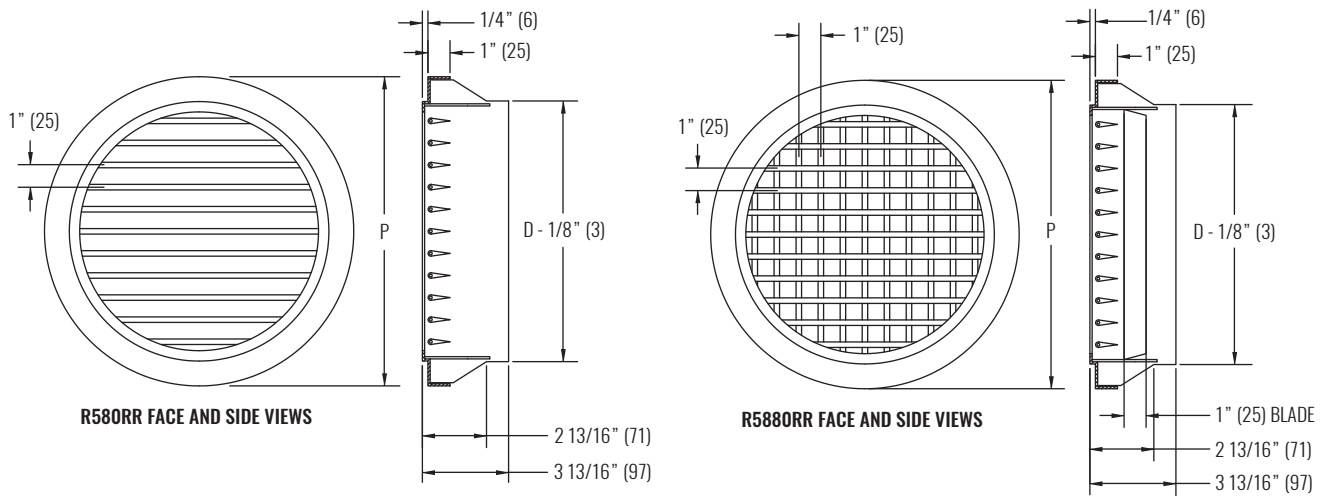
R580RR / R5880RR

Round Single and Double Deflection Grilles, Round Duct Reducer



GRILLES | ROUND

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE								DIMENSIONS	
	NC (< 25)				NC (25 - 40)				DUCT D	P
NOMINAL	CFM	0° THROW (ft)	15° THROW (ft)	30° THROW (ft)	CFM	0° THROW (ft)	15° THROW (ft)	30° THROW (ft)		
6"	90 - 228	20 - 31	18 - 28	16 - 25	240 - 340	32 - 38	29 - 35	26 - 31	6" (152)	8 1/4" (210)
8"	175 - 396	28 - 41	25 - 38	23 - 34	415 - 598	42 - 51	39 - 46	35 - 42	8" (203)	10 1/4" (260)
10"	300 - 606	36 - 51	33 - 46	30 - 41	635 - 925	52 - 63	47 - 57	42 - 52	10" (254)	12 1/4" (311)
12"	400 - 850	42 - 61	38 - 55	34 - 50	907 - 1288	63 - 75	57 - 68	51 - 61	12" (305)	14 1/4" (362)
14"	600 - 1157	51 - 70	46 - 64	42 - 58	1229 - 1750	72 - 87	66 - 79	59 - 71	14" (356)	16 1/4" (413)
16"	750 - 1445	57 - 79	52 - 71	47 - 65	1537 - 2233	82 - 98	73 - 89	67 - 81	16" (406)	18 1/4" (464)
18"	1000 - 1826	66 - 88	60 - 80	54 - 72	1940 - 2764	91 - 109	82 - 99	74 - 89	18" (457)	20 1/4" (514)
20"	1200 - 2200	72 - 97	65 - 88	59 - 80	2334 - 3320	100 - 120	91 - 109	82 - 98	20" (508)	22 1/4" (565)
22"	1500 - 2654	81 - 107	73 - 97	66 - 87	2808 - 4000	120 - 132	99 - 119	90 - 108	22" (559)	24 1/4" (616)
24"	1800 - 3000	88 - 114	80 - 103	72 - 93	3273 - 4800	119 - 144	107 - 130	97 - 118	24" (610)	26 1/4" (667)

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- REGC5 - Aluminum, round egg crate, concealed mount

FEATURES

- Aluminum construction
- Round 1/2"x1/2"x1/2" egg crate grille
- For use in surface mount applications
- Concealed mounting system standard

INLET SIZES

- Round: 6" - 24" (2" increments), 30"

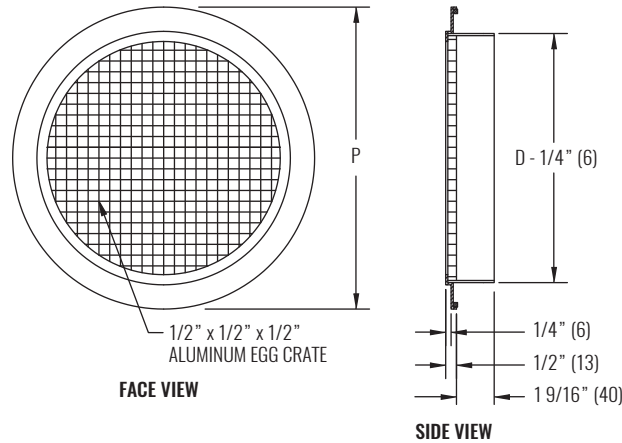


REGC5

Round Egg Crate Grille



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration shown without concealed mounting ring. See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS	
	NC (< 25)		NC (25 - 40)		DUCT D	P
NOMINAL	CFM	THROW (ft)	CFM	THROW (ft)		
SUPPLY						
6"	100 - 200	21 - 29	215 - 325	30 - 37	6" (152)	8 1/4" (210)
10"	200 - 530	29 - 48	575 - 875	50 - 61	10" (254)	12 1/4" (311)
18"	700 - 1550	55 - 82	1675 - 2600	85 - 106	18" (457)	20 1/4" (514)
24"	1000 - 2500	66 - 104	2800 - 4375	110 - 138	24" (610)	26 1/4" (667)
30"	1500 - 3800	79 - 130	4200 - 6000	134 - 161	30" (762)	32 1/4" (819)
RETURN						
6"	75 - 180		200 - 300			
10"	200 - 485		525 - 800			
18"	700 - 1415		1500 - 2300			
24"	1000 - 2370		2500 - 4000			
30"	1500 - 3555		3800 - 5800			

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- REGC5RD - Aluminum, round egg crate with round duct adapter

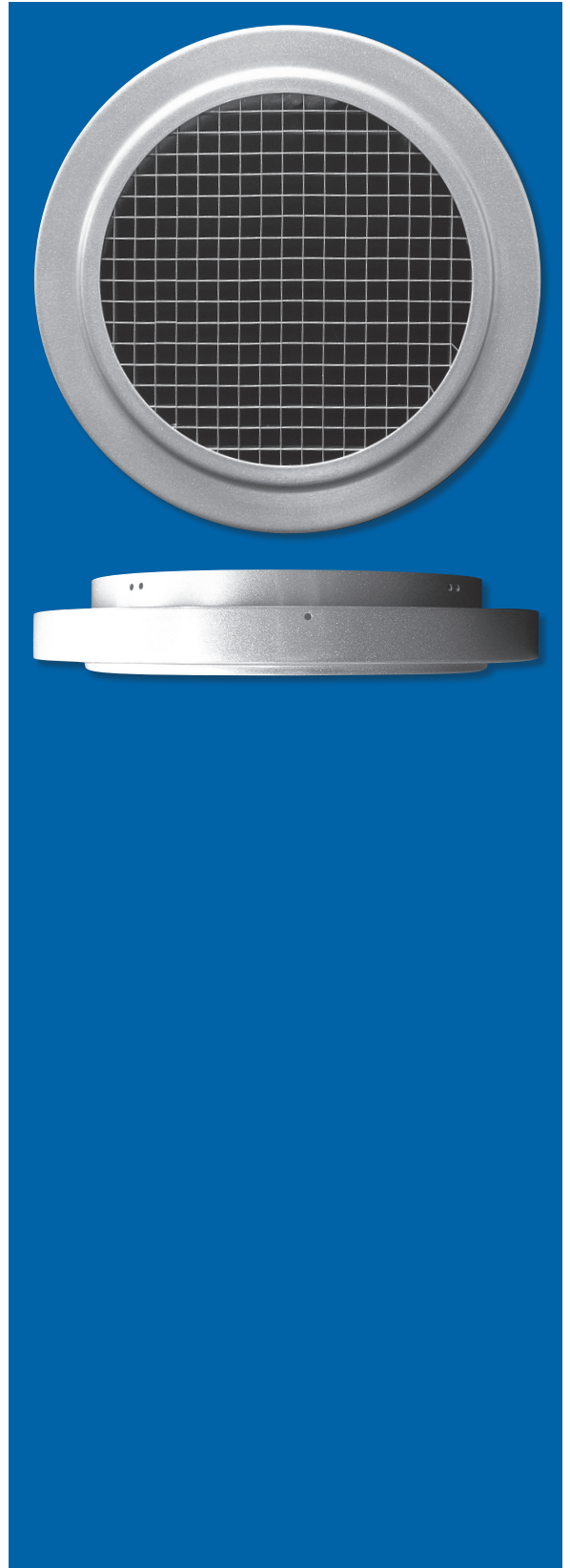
FEATURES

- Aluminum construction
- Round 1/2"x1/2"x1/2" egg crate grille
- For use in exposed duct mount applications
- Frame slides cleanly over end of exposed duct

INLET SIZES

- Round: 6" - 24" (2" increments), 30"¹

NOTES: ¹ Nominal size and duct size are not the same.



REGC5RD

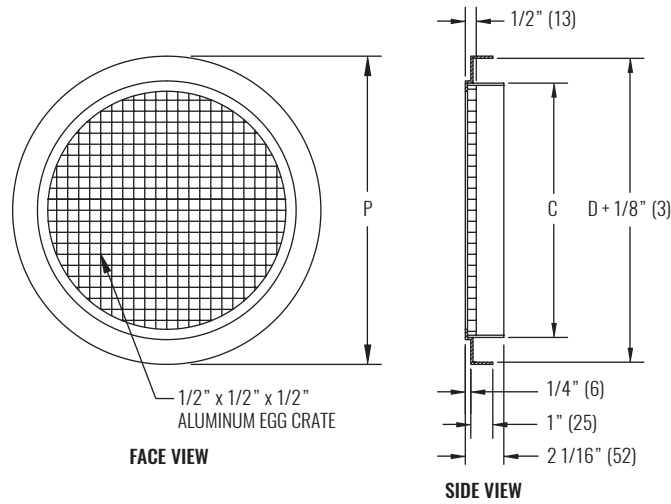
Round Egg Crate Grille, Round Duct Adapter



GRILLES | ROUND

REGC5RD

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS		
	NC (< 25)		NC (25 - 40)		CORE C	DUCT D	P
NOMINAL ¹	CFM	THROW (ft)	CFM	THROW (ft)			
SUPPLY							
6"	100 - 200	21 - 29	215 - 325	30 - 37	5 5/8" (143)	8" (203)	8 1/4" (210)
10"	200 - 530	29 - 48	575 - 850	50 - 60	9 5/8" (244)	12" (305)	12 1/4" (311)
18"	700 - 1500	55 - 81	1700 - 2600	85 - 116	17 5/8" (448)	20" (508)	20 1/4" (514)
24"	1000 - 2500	66 - 104	2800 - 4375	110 - 137	23 5/8" (600)	26" (660)	26 1/4" (667)
30"	1500 - 3900	79 - 130	4200 - 6000	134 - 161	29 5/8" (752)	32" (813)	32 1/4" (819)
RETURN							
6"	75 - 180		200 - 300				
10"	200 - 480		500 - 800				
18"	700 - 1410		1500 - 2300				
24"	1000 - 2370		2500 - 4000				
30"	1500 - 3500		4000 - 5800				

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

¹ Nominal size is 2" (51) smaller than the duct size to which it mounts. Example: A nominal size 10 mounts on a 12" (305) duct.

MODEL

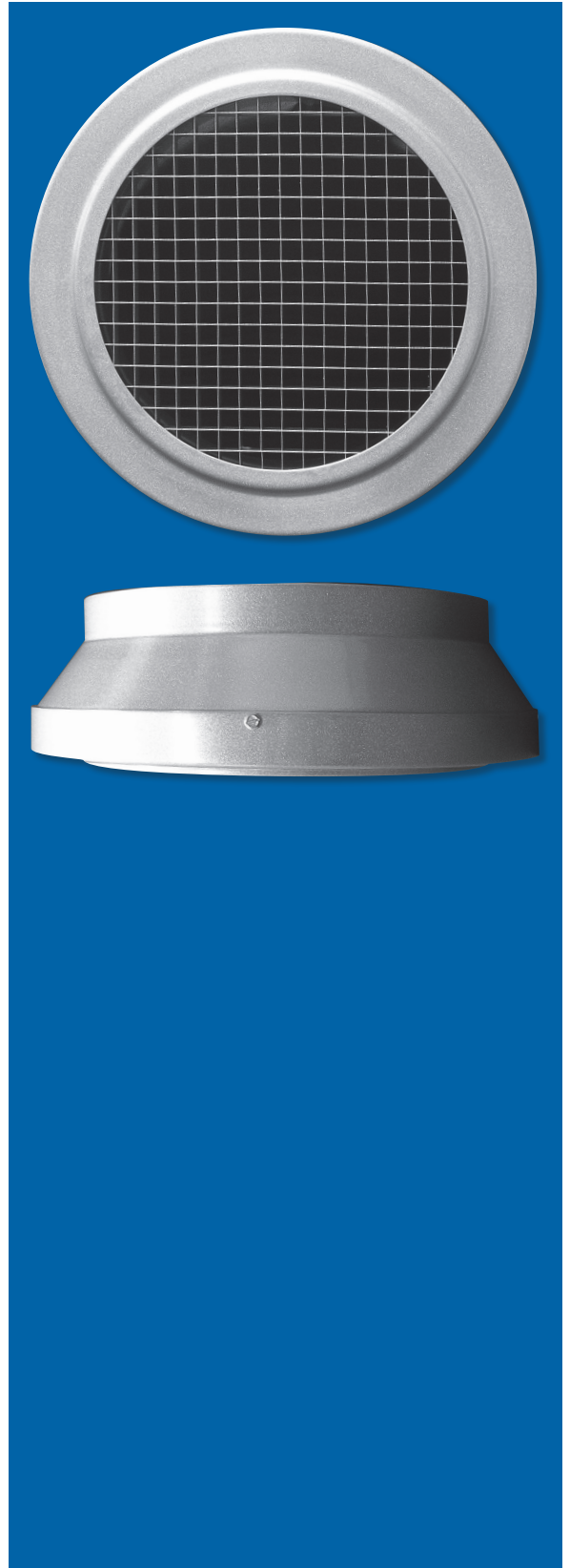
- REGC5RR - Aluminum, round egg crate with round duct adapter

FEATURES

- Aluminum construction
- Round 1/2"x1/2"x1/2" egg crate grille
- For use in exposed duct mount applications
- Frame slides cleanly into end of exposed duct

INLET SIZES

- Round: 6" - 24" (2" increments)



REGC5RR

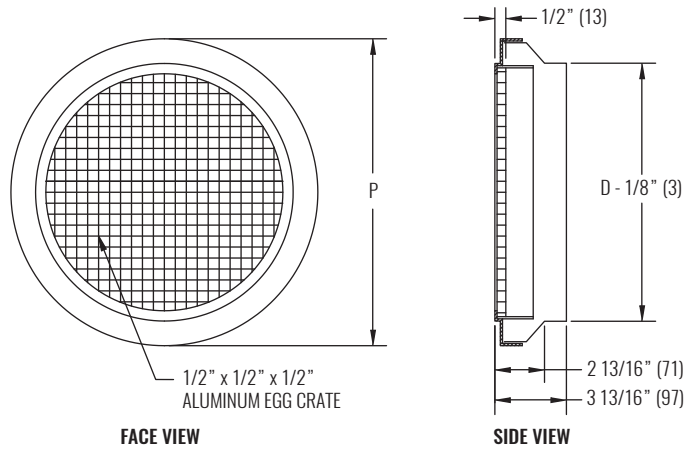
Round Egg Crate Grille, Round Duct Reducer



GRILLES | ROUND

REGC5RR

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS	
	NC (< 25)		NC (25 - 40)		DUCT D	P
NOMINAL	CFM	THROW (ft)	CFM	THROW (ft)		
SUPPLY						
6"	100 - 200	21 - 29	215 - 325	30 - 37	6" (152)	8 1/4" (210)
10"	200 - 530	29 - 48	575 - 875	50 - 61	10" (254)	12 1/4" (311)
18"	700 - 1550	55 - 82	1675 - 2600	85 - 106	18" (457)	20 1/4" (514)
24"	1000 - 2500	66 - 104	2800 - 4375	110 - 138	24" (610)	26 1/4" (667)
RETURN						
6"	75 - 180		200 - 300			
10"	200 - 485		525 - 800			
18"	700 - 1415		1500 - 2300			
24"	1000 - 2370		2500 - 4000			

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for free jet isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 180 - Steel, curved blade supply grille
- 5180 - Aluminum, curved blade supply grille

FEATURES

- Individually adjustable curved blades
- 1, 2, 3, and 4-way air discharge patterns
- Blade settings can be achieved to increase throw values up to 43% or decreased down to 36% of listed catalog throws
- Excellent choice for residential and commercial buildings where different throw lengths are needed for the same sized grille

PATTERN

- 1, 2, 3, or 4-way

GRILLE SIZES

- Width: 6" - 36" (1" increments)
- Height: 4" - 36" (1" increments)

PANEL SIZES

- 24"x24"
- 48"x24"

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ¹

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed mounting ²
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

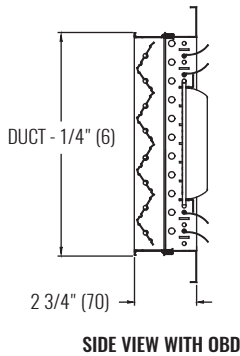
NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Minimum of 4" difference required between inlet and panel size for F23.

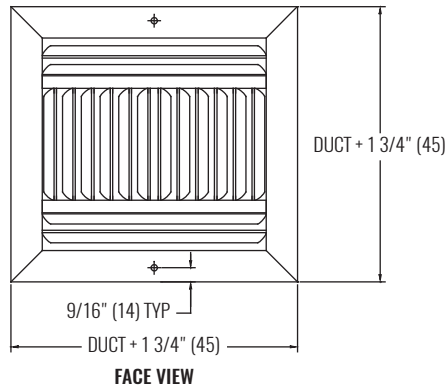
² Concealed mounting not available with OBD.



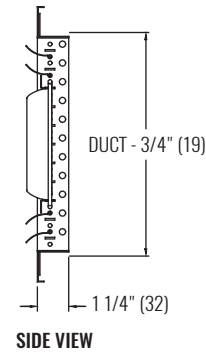
DIMENSIONAL DATA



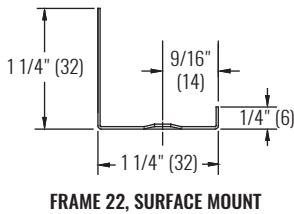
SIDE VIEW WITH OBD



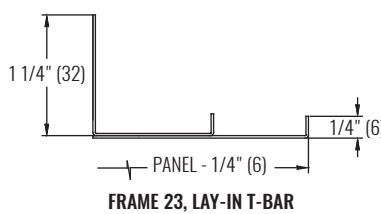
FACE VIEW



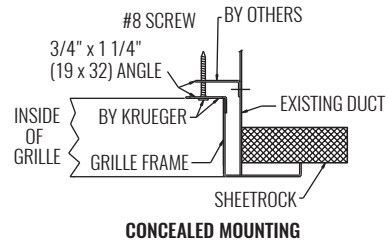
SIDE VIEW



FRAME 22, SURFACE MOUNT



FRAME 23, LAY-IN T-BAR



CONCEALED MOUNTING

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW									
	NC (< 25)					NC (25 - 40)				
	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	3-WAY THROW (ft)	4-WAY THROW (ft)	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	3-WAY THROW (ft)	4-WAY THROW (ft)
8"x4"	44 - 82	13 - 18	14 - 16	9 - 14	9 - 13	86 - 147	19 - 32	17 - 28	14 - 24	13 - 23
6"x6"	50 - 94	13 - 24	11 - 21	10 - 18	9 - 17	99 - 168	25 - 37	22 - 35	19 - 31	18 - 27
8"x6"	75 - 125	13 - 21	11 - 18	9 - 16	9 - 15	131 - 224	22 - 38	19 - 33	17 - 28	15 - 26
10"x6"	83 - 155	14 - 23	12 - 20	11 - 17	10 - 16	162 - 278	24 - 41	21 - 36	18 - 31	17 - 29
8"x8"	89 - 166	14 - 27	13 - 24	11 - 20	10 - 19	174 - 298	28 - 48	25 - 42	21 - 36	20 - 34
12"x6"	100 - 184	15 - 24	13 - 21	11 - 18	10 - 17	193 - 330	25 - 43	22 - 38	19 - 33	18 - 30
12"x8"	133 - 245	16 - 27	14 - 24	12 - 20	11 - 19	256 - 439	28 - 48	25 - 42	21 - 36	20 - 34
10"x10"	139 - 256	16 - 29	14 - 26	12 - 22	11 - 21	267 - 458	31 - 53	27 - 46	23 - 40	22 - 37
12"x12"	200 - 361	18 - 32	15 - 28	13 - 24	12 - 22	376 - 646	33 - 57	29 - 49	25 - 42	23 - 40
14"x14"	272 - 482	19 - 34	17 - 29	14 - 25	13 - 23	502 - 862	35 - 60	31 - 53	26 - 45	24 - 42
16"x16"	356 - 617	20 - 35	18 - 31	15 - 26	14 - 25	643 - 1104	37 - 63	32 - 55	28 - 47	26 - 44
18"x18"	450 - 767	22 - 37	19 - 32	16 - 28	15 - 26	798 - 1372	38 - 66	34 - 58	29 - 50	27 - 46

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 180M - Steel, curved blade supply grille with multi-louver operator
- 5180M - Aluminum, curved blade supply grille with multi-louver operator

FEATURES

- Individually adjustable curved blades
- Multi-louver gang operated damper
- 1, 2, 3, and 4-way air discharge patterns
- Blade settings can be achieved to increase throw values up to 43% or decreased down to 36% of listed catalog throws
- Excellent choice for residential and commercial buildings where different throw lengths are needed for the same sized grille

PATTERN

- 1, 2, 3, or 4-way

GRILLE SIZES

- Width: 6" - 36" (1" increments)
- Height: 4" - 36" (1" increments)

PANEL SIZES

- 24"x24"
- 48"x24"

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ¹

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Minimum of 4" difference required between inlet and panel size for F23.

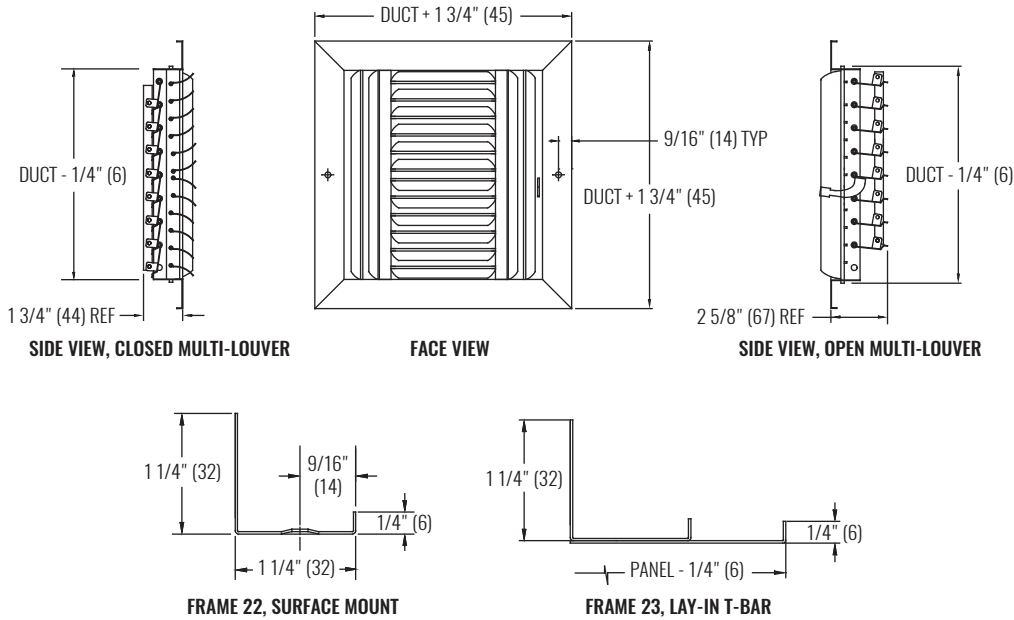


180M / 5180M

Supply Grille, Curved Blade, Multi-louver Operator



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW									
	NC (< 25)					NC (25 - 40)				
W x H	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	3-WAY THROW (ft)	4-WAY THROW (ft)	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	3-WAY THROW (ft)	4-WAY THROW (ft)
8"x4"	44 - 82	13 - 18	14 - 16	9 - 14	9 - 13	86 - 147	19 - 32	17 - 28	14 - 24	13 - 23
6"x6"	50 - 94	13 - 24	11 - 21	10 - 18	9 - 17	99 - 168	25 - 37	22 - 35	19 - 31	18 - 27
8"x6"	75 - 125	13 - 21	11 - 18	9 - 16	9 - 15	131 - 224	22 - 38	19 - 33	17 - 28	15 - 26
10"x6"	83 - 155	14 - 23	12 - 20	11 - 17	10 - 16	162 - 278	24 - 41	21 - 36	18 - 31	17 - 29
8"x8"	89 - 166	14 - 27	13 - 24	11 - 20	10 - 19	174 - 298	28 - 48	25 - 42	21 - 36	20 - 34
12"x6"	100 - 184	15 - 24	13 - 21	11 - 18	10 - 17	193 - 330	25 - 43	22 - 38	19 - 33	18 - 30
12"x8"	133 - 245	16 - 27	14 - 24	12 - 20	11 - 19	256 - 439	28 - 48	25 - 42	21 - 36	20 - 34
10"x10"	139 - 256	16 - 29	14 - 26	12 - 22	11 - 21	267 - 458	31 - 53	27 - 46	23 - 40	22 - 37
12"x12"	200 - 361	18 - 32	15 - 28	13 - 24	12 - 22	376 - 646	33 - 57	29 - 49	25 - 42	23 - 40
14"x14"	272 - 482	19 - 34	17 - 29	14 - 25	13 - 23	502 - 862	35 - 60	31 - 53	26 - 45	24 - 42
16"x16"	356 - 617	20 - 35	18 - 31	15 - 26	14 - 25	643 - 1104	37 - 63	32 - 55	28 - 47	26 - 44
18"x18"	450 - 767	22 - 37	19 - 32	16 - 28	15 - 26	798 - 1372	38 - 66	34 - 58	29 - 50	27 - 46

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- 80 - Steel, single deflection supply grille
- 580 - Aluminum, single deflection supply grille

FEATURES

- Horizontal (H) or vertical (V) blades
- Individually adjustable blades with 3/4" blade spacing
- 48"x48" maximum single unit size

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

PANEL SIZES

- 24"x24"
- 48"x24"

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed mounting ³
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh), 48"x48" max size ^{4 5}
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

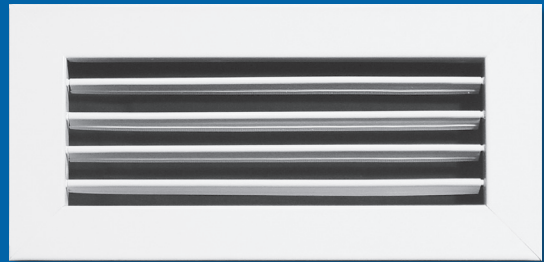
¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

² Minimum of 4" difference required between inlet and panel size for F23.

³ Concealed mounting not available with plaster frame. Max unit size for concealed mounting is 36"x36".

⁴ Only available on model 580.

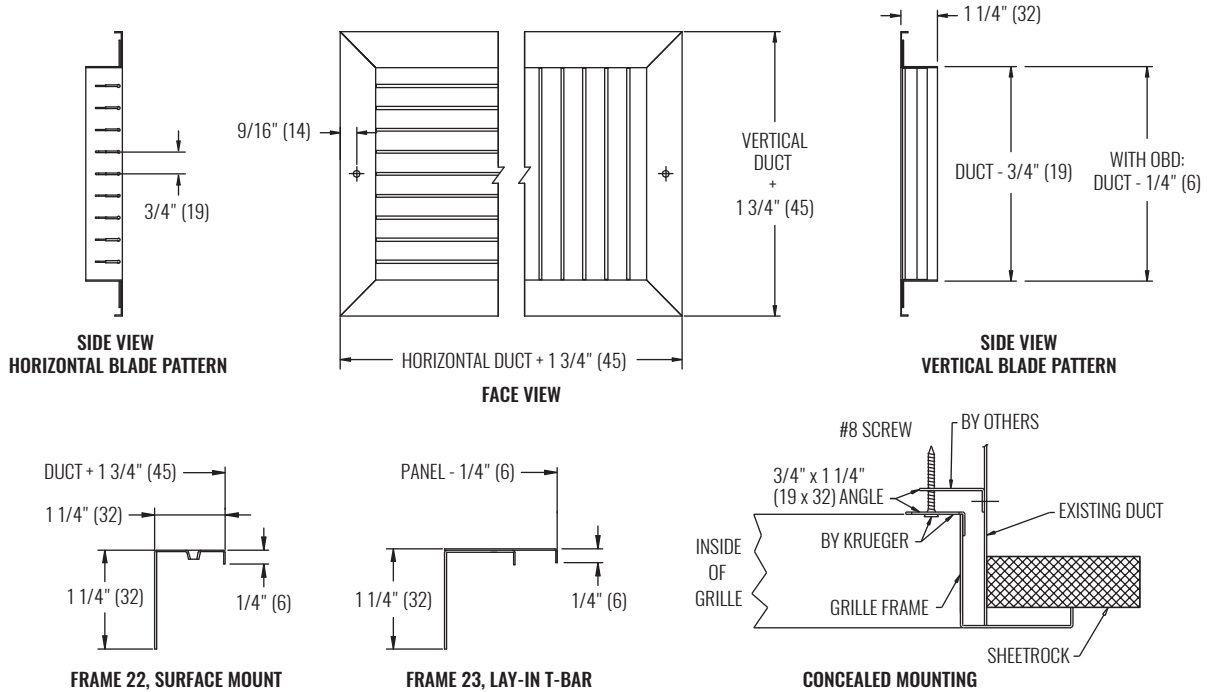
⁵ Insect and debris screens not available with dampers.



WEB SEARCH: 80 or 580



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 800 - Steel, single deflection supply register with gang operated rear louver
- 5800 - Aluminum, single deflection supply register with gang operated rear louver

FEATURES

- Horizontal (H) or vertical (V) front blades
- Individually adjustable front blades with 3/4" blade spacing
- Gang operated rear louver
- 48"x48" maximum single unit size

INLET SIZES ¹

- Width: 6" - 48" (1" increments)
- Height: 4" - 48" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ¹

PANEL SIZES

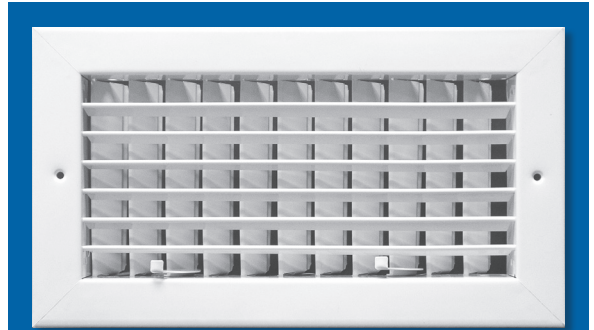
- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

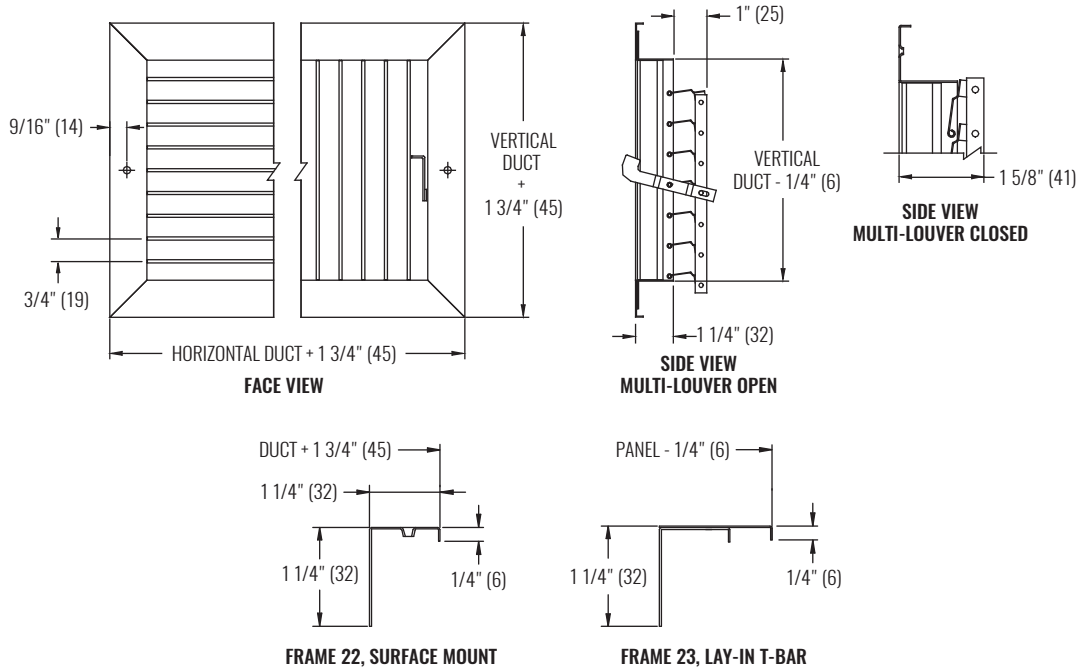
- Screw holes
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Minimum of 4" difference required between inlet and panel size for F23.

[WEB SEARCH: 800 or 5800](#)

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 880 - Steel, double deflection supply grille
- 5880 - Aluminum, double deflection supply grille

FEATURES

- Horizontal (H) or vertical (V) front blades
- Individually adjustable blades with 3/4" blade spacing
- 48"x48" maximum single unit size

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed mounting ³
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh), 48"x48" max size ^{4 5}
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

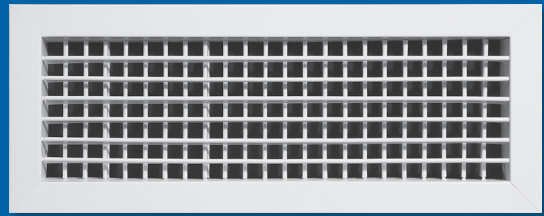
¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

² Minimum of 4" difference required between inlet and panel size for F23.

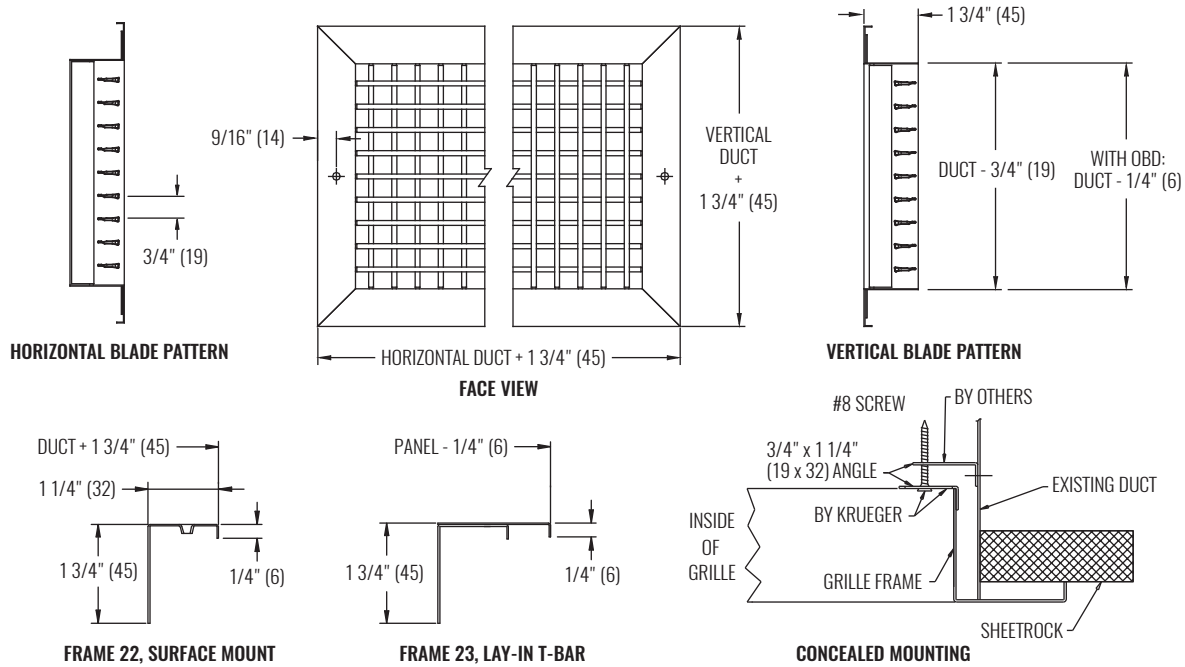
³ Concealed mounting not available with plaster frame. Max unit size for concealed mounting is 36"x36".

⁴ Only available on model 5880.

⁵ Insect and debris screens not available with dampers.

**WEB SEARCH: 880 or 5880**

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 585 - Aluminum, single deflection supply grille

FEATURES

- Horizontal (H) or vertical (V) blades
- Individually adjustable blades with 1/2" blade spacing
- 48"x48" maximum single unit size

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

PANEL SIZES

- 24"x24"
- 48"x24"

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed mounting ³
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh), 48"x48" max size ⁴
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

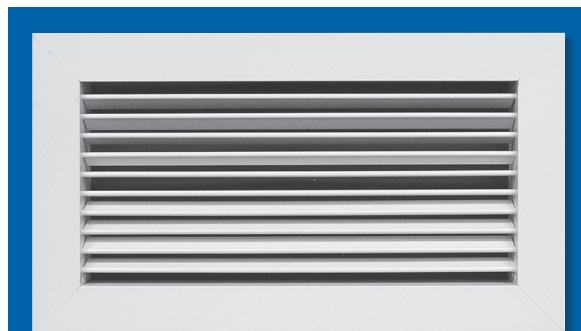
NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

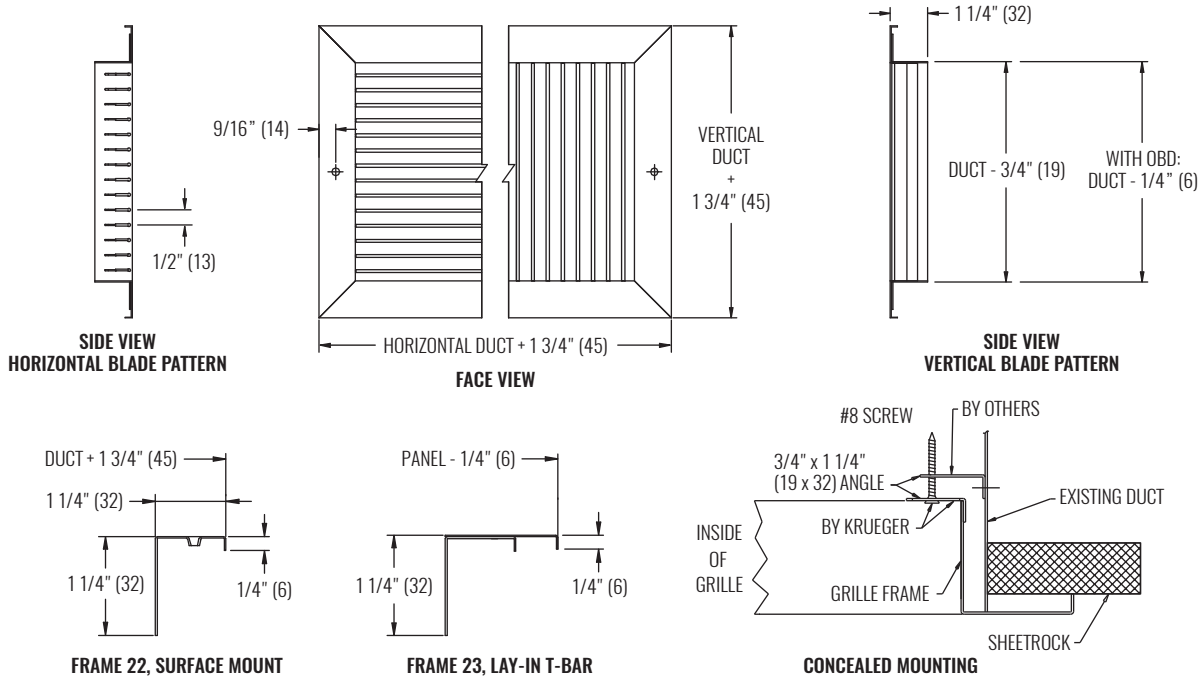
² Minimum of 4" difference required between inlet and panel size for F23.

³ Concealed mounting not available with plaster frame. Max unit size for concealed mounting is 36"x36".

⁴ Insect and debris screens not available with dampers.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- 5885 - Aluminum, double deflection supply grille

FEATURES

- Horizontal (H) or vertical (V) front blades
- Individually adjustable front and rear blades with 1/2" blade spacing
- 48"x48" maximum single unit size

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed mounting ³
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh), 48"x48" max size ⁴
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

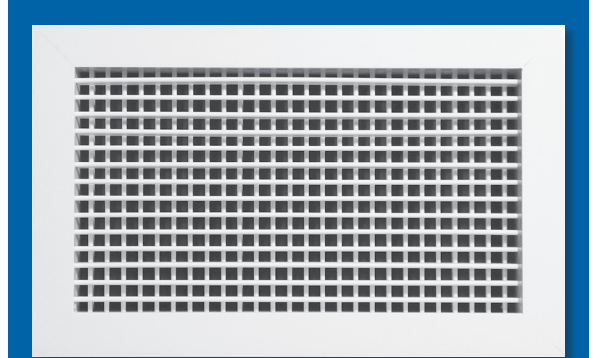
NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

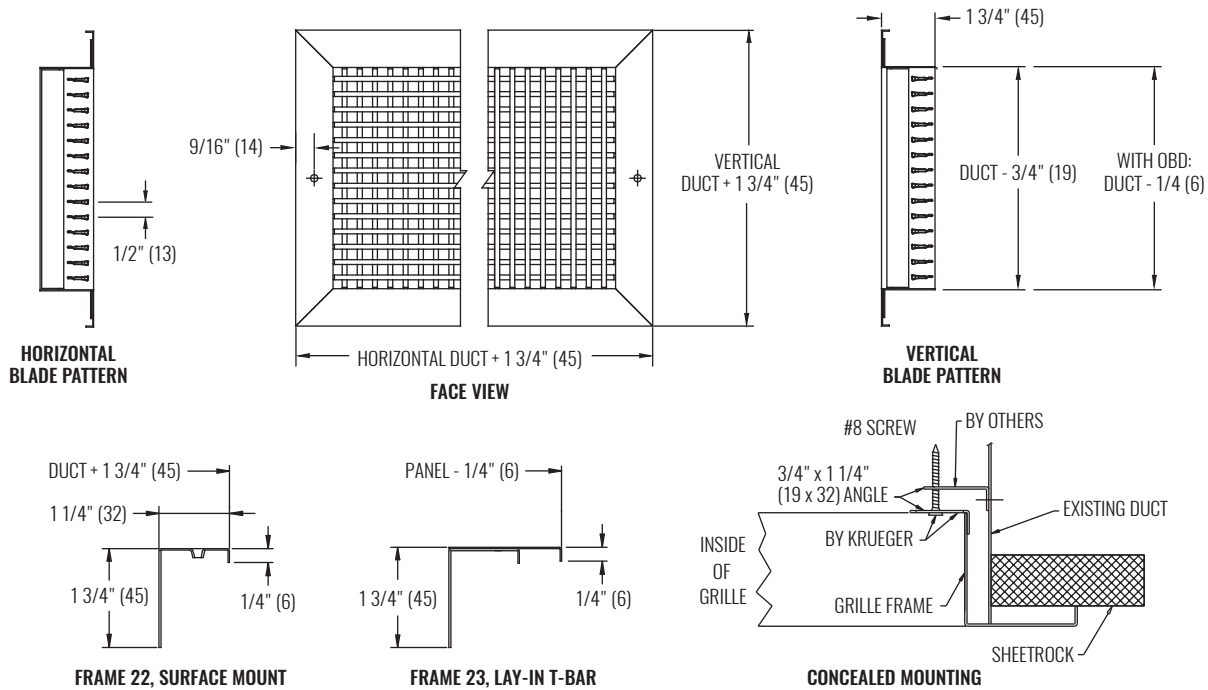
² Minimum of 4" difference required between inlet and panel size for F23.

³ Concealed mounting not available with plaster frame. Max unit size for concealed mounting is 36"x36".

⁴ Insect and debris screens not available with dampers.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 480 - Steel, heavy duty, single deflection supply grille

FEATURES

- Horizontal (H) or vertical (V) blades
- Individually adjustable 14 gauge blades with 1/2" blade spacing ¹
- 18 gauge frame
- 48"x48" maximum single unit size

GRILLE SIZES ²

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed mounting ³
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

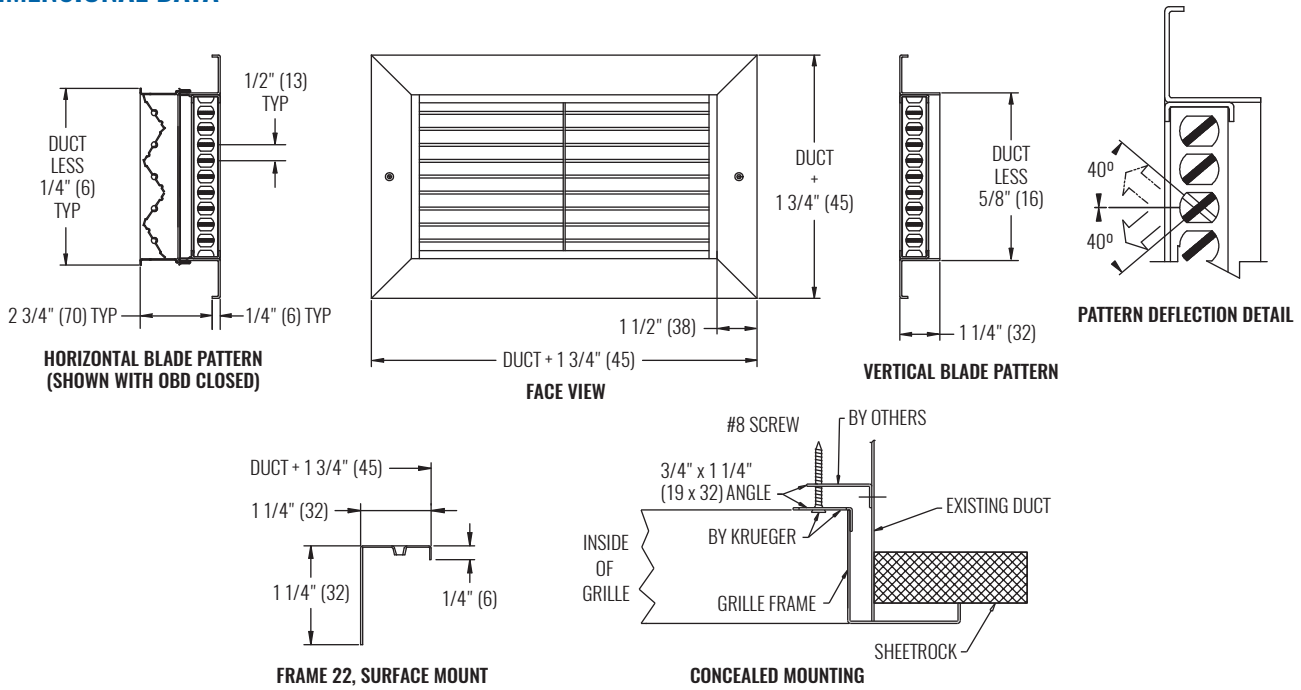
¹ Heavy duty blades may require tool to adjust.

² Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

³ Concealed mounting not available with damper or plaster frame. Max unit size for concealed mounting is 36"x36"



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE W x H	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- 4880 - Steel, heavy duty, double deflection supply grille

FEATURES

- Horizontal (H) or vertical (V) front blades
- Individually adjustable blades ¹
- 1/2" 14 gauge front blade spacing
- 3/4" rear blade spacing
- 18 gauge frame
- 48"x48" maximum single unit size

GRILLE SIZES ²

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount

COMPATIBLE OPTIONS AND ACCESSORIES

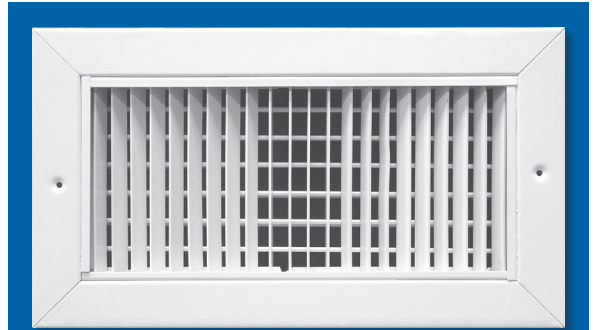
- Screw holes or concealed mounting ³
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

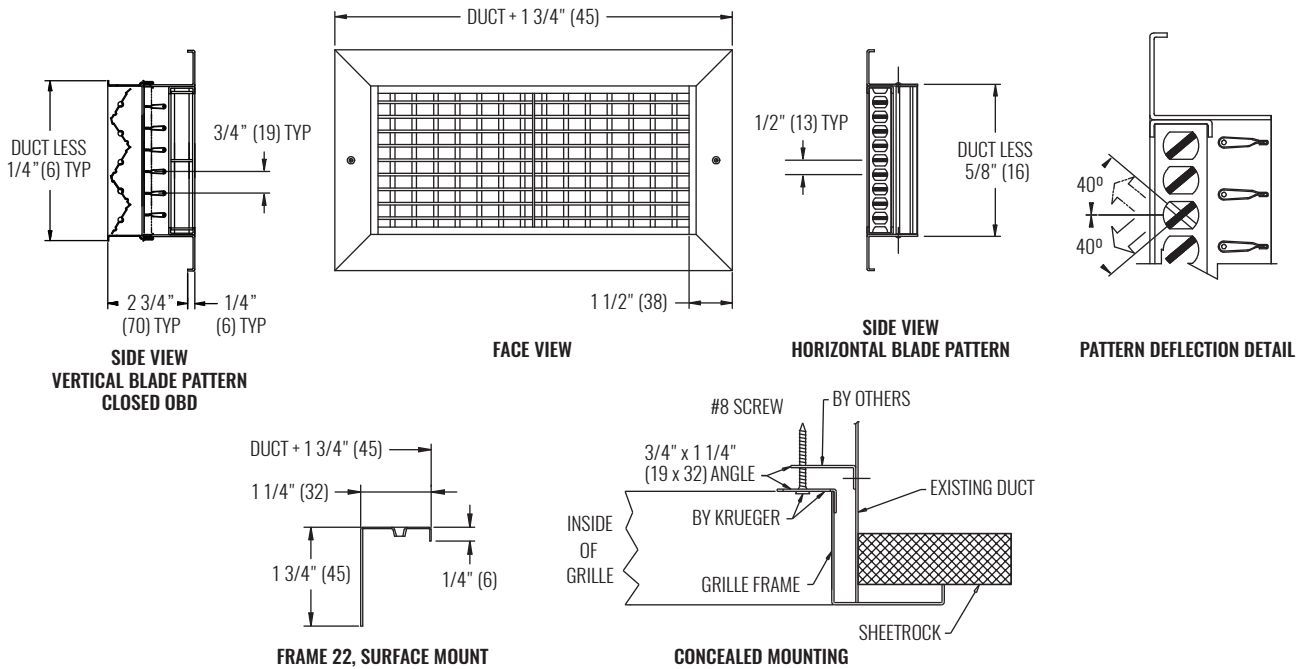
¹ Heavy duty blades may require tool to adjust.

² Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

³ Concealed mounting not available with damper or plaster frame. Max unit size for concealed mounting is 36"x36".



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10^{-12} Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- AF80 - Steel frame, single deflection airfoil grille
- AF580 - Aluminum frame, single deflection airfoil grille

FEATURES

- Horizontal (H) or vertical (V) blades
- Individually adjustable blades with 3/4" blade spacing
- Extruded aluminum airfoil blades
- 48"x48" maximum single unit size

GRILLE SIZES¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount

COMPATIBLE OPTIONS AND ACCESSORIES

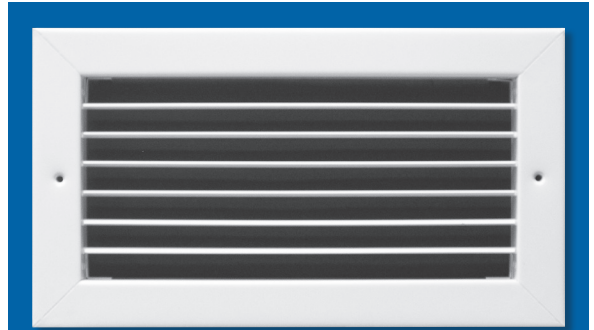
- Screw holes or concealed mounting²
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh), 48"x48" max size³
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

² Concealed mounting not available with plaster frame. Max unit size for concealed mounting is 36"x36".

³ Insect and debris screens not available with dampers.

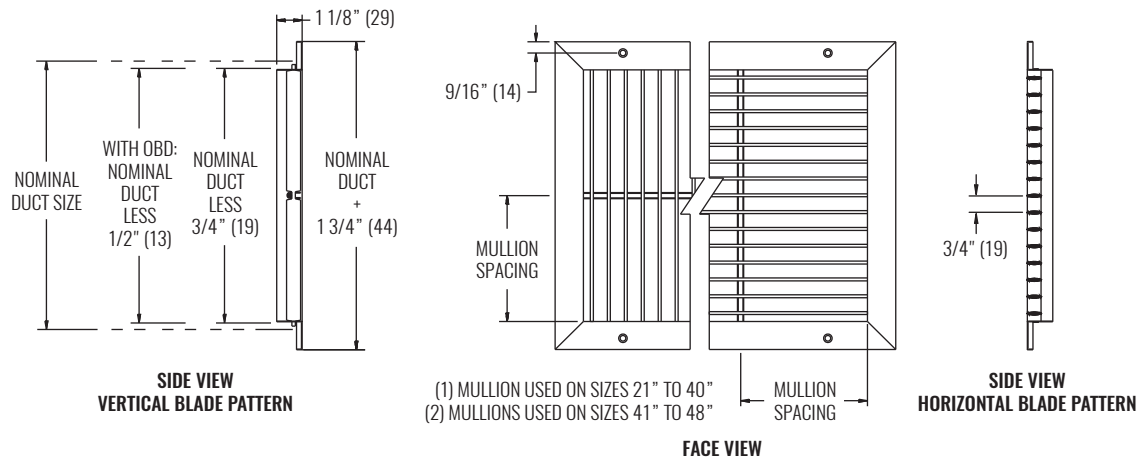
**WEB SEARCH:** AF80 or AF580

AF80 / AF580

Supply Grille, Single Deflection, Airfoil Blade



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE W x H	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
6"x4"	77 - 121	16 - 20	13 - 16	7 - 9	126 - 200	21 - 26	16 - 20	9 - 12
6"x6"	77 - 183	16 - 25	12 - 19	7 - 11	190 - 302	25 - 32	20 - 25	11 - 14
10"x4"	77 - 197	16 - 26	13 - 20	7 - 12	204 - 325	26 - 33	20 - 26	12 - 15
8"x6"	106 - 241	19 - 29	15 - 22	9 - 13	250 - 399	29 - 37	23 - 28	13 - 17
10"x6"	135 - 297	21 - 32	17 - 25	10 - 14	309 - 492	32 - 41	25 - 32	15 - 18
12"x6"	164 - 352	24 - 34	18 - 27	11 - 16	365 - 582	35 - 44	27 - 34	16 - 20
14"x6"	193 - 405	26 - 37	20 - 29	12 - 17	420 - 670	38 - 48	29 - 37	17 - 21
12"x8"	227 - 465	28 - 40	21 - 31	12 - 18	482 - 769	40 - 51	31 - 40	18 - 23
16"x6"	193 - 458	26 - 39	20 - 30	11 - 18	474 - 756	40 - 51	31 - 39	18 - 23
18"x6"	252 - 509	29 - 41	23 - 32	13 - 19	527 - 841	42 - 53	33 - 41	19 - 24
14"x8"	252 - 535	29 - 43	23 - 33	13 - 19	555 - 885	43 - 55	34 - 42	19 - 25
20"x6"	289 - 559	31 - 43	24 - 34	14 - 20	579 - 924	44 - 56	34 - 43	20 - 25

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- AF880 - Steel frame, double deflection airfoil grille
- AF5880 - Aluminum frame, double deflection airfoil grille

FEATURES

- Horizontal (H) or vertical (V) front blades
- Individually adjustable blades with 3/4" blade spacing
- Extruded aluminum airfoil blades
- 48"x48" maximum single unit size

GRILLE SIZES¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount

COMPATIBLE OPTIONS AND ACCESSORIES

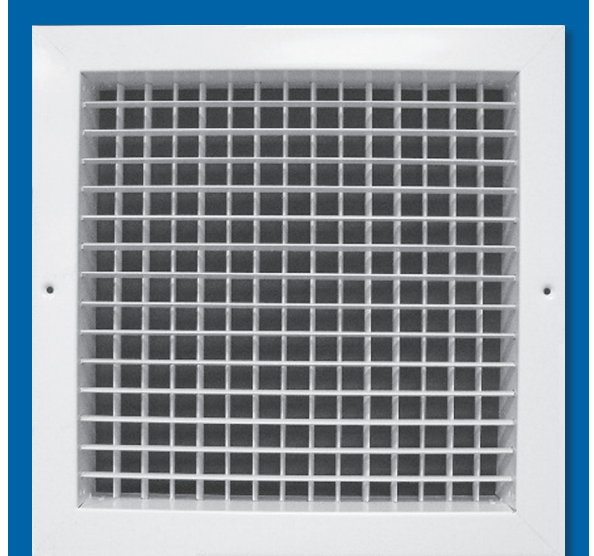
- Screw holes or concealed mounting²
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh), 48"x48" max size³
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

² Concealed mounting not available with plaster frame. Max unit size for concealed mounting is 36"x36".

³ Insect and debris screens not available with dampers.

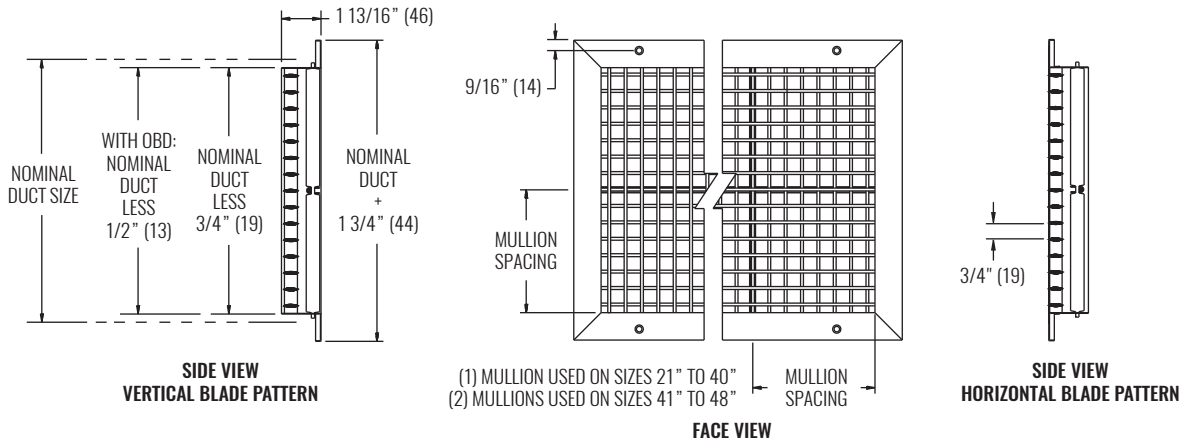
**WEB SEARCH:** AF880 or AF5880

AF880 / AF5880

Supply Grille, Double Deflection, Airfoil Blade



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW							
	W x H	NC (< 25)			NC (25 - 40)			
		CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)
6"x4"	77 - 121	16 - 20	13 - 16	7 - 9	126 - 200	21 - 26	16 - 20	9 - 12
6"x6"	77 - 183	16 - 25	12 - 19	7 - 11	190 - 302	25 - 32	20 - 25	11 - 14
10"x4"	77 - 197	16 - 26	13 - 20	7 - 12	204 - 325	26 - 33	20 - 26	12 - 15
8"x6"	106 - 241	19 - 29	15 - 22	9 - 13	250 - 399	29 - 37	23 - 28	13 - 17
10"x6"	135 - 297	21 - 32	17 - 25	10 - 14	309 - 492	32 - 41	25 - 32	15 - 18
12"x6"	164 - 352	24 - 34	18 - 27	11 - 16	365 - 582	35 - 44	27 - 34	16 - 20
14"x6"	193 - 405	26 - 37	20 - 29	12 - 17	420 - 670	38 - 48	29 - 37	17 - 21
12"x8"	227 - 465	28 - 40	21 - 31	12 - 18	482 - 769	40 - 51	31 - 40	18 - 23
16"x6"	193 - 458	26 - 39	20 - 30	11 - 18	474 - 756	40 - 51	31 - 39	18 - 23
18"x6"	252 - 509	29 - 41	23 - 32	13 - 19	527 - 841	42 - 53	33 - 41	19 - 24
14"x8"	252 - 535	29 - 43	23 - 33	13 - 19	555 - 885	43 - 55	34 - 42	19 - 25
20"x6"	289 - 559	31 - 43	24 - 34	14 - 20	579 - 924	44 - 56	34 - 43	20 - 25

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5815 - Aluminum, fixed blade supply grille with removable / reversible core

FEATURES

- Horizontal (H) or vertical (V) fixed front blades on 1/4" centers
- Adjustable rear deflection blades on 1" centers
- Removable reversible core supply adjustable in field
- Provides several deflection options : 5° up, 5° down, 15° up, or 15° down
- Flat frame

GRILLE SIZES

- Width: 6" - 72" (1/4" increments)
- Height: 4" - 36" (1/4" increments)¹

FRAME STYLE

- F22 - Surface mount

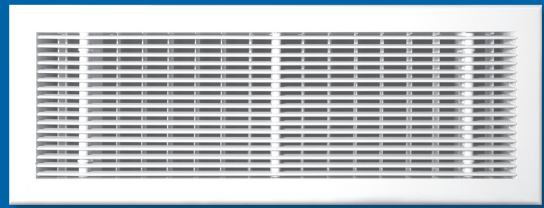
COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh), 48"x48" max size²
- SSG - Steel, square or rectangular straightening grid
- SRAC325 - Steel, square to round adapter

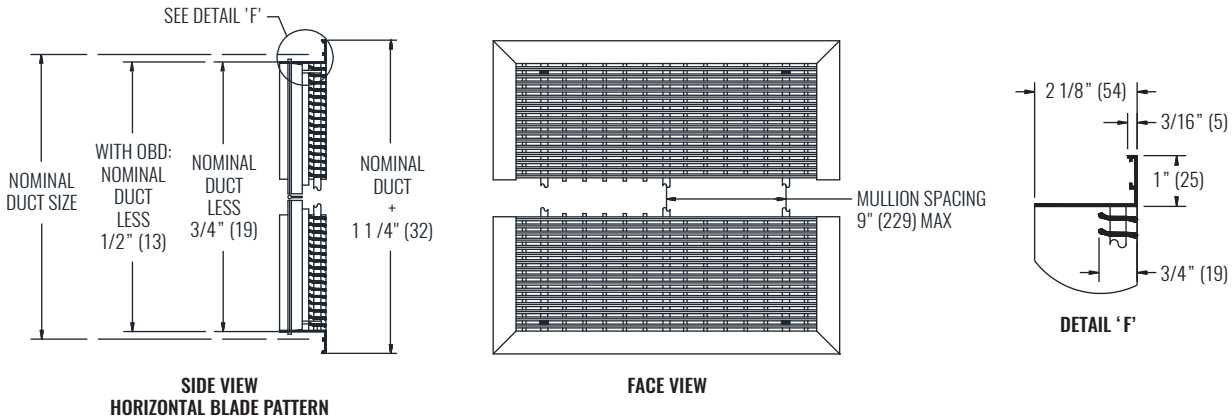
NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Vertical front blades available with minimum 6" height.

² Insect and debris screens not available with dampers.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW							
	NC (< 25)				NC (25 - 40)			
	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	69 - 187	15 - 25	12 - 19	7 - 11	194 - 308	26 - 32	20 - 25	12 - 15
8"x8"	125 - 345	19 - 34	15 - 26	9 - 15	358 - 569	35 - 44	27 - 34	16 - 20
12"x8"	190 - 490	24 - 41	18 - 32	11 - 18	508 - 808	41 - 52	32 - 41	19 - 24
10"x10"	198 - 508	24 - 41	19 - 32	11 - 19	527 - 837	42 - 53	33 - 41	19 - 24
18"x6"	213 - 540	25 - 43	20 - 33	11 - 19	558 - 889	43 - 55	34 - 42	20 - 25
16"x8"	239 - 628	26 - 46	20 - 36	12 - 21	650 - 1034	47 - 59	36 - 46	21 - 27
32"x4"	239 - 615	26 - 46	20 - 35	12 - 21	636 - 1013	46 - 59	36 - 45	21 - 26
49"x5"	322 - 1077	25 - 60	20 - 47	11 - 27	1115 - 1774	61 - 77	48 - 60	28 - 35
24"x12"	388 - 1261	28 - 65	22 - 51	13 - 29	1304 - 2077	66 - 84	51 - 65	30 - 38
72"x4"	388 - 1223	28 - 64	22 - 50	13 - 29	1265 - 2014	65 - 83	51 - 64	29 - 37
64"x5"	388 - 1351	27 - 68	21 - 52	12 - 30	1397 - 2225	69 - 87	53 - 67	31 - 39
22.5"x22.5"	683 - 2044	37 - 83	29 - 64	17 - 37	2115 - 3367	85 - 107	66 - 83	38 - 48

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- S80 - Steel, fixed deflection return with 3/4" blade spacing
- S580 - Aluminum, fixed deflection return with 3/4" blade spacing

FEATURES

- Horizontal or vertical blades
- 35° (H/V) or 0° (HZ/VZ) blade deflection
- 3/4" blade spacing
- 48"x48" maximum single unit size

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²
- F98 - Narrow-T ³

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes, concealed fastening ⁴, knurled knob ⁵, or 1/4-turn fasteners ⁵
- 5FF - Filter frame to fit 1" or 2" filter by others (8"x8" to 48"x36" or 36"x48")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh) ⁶

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

² Minimum of 4" difference required between inlet and panel size for F23.

³ F98 only available with 24"x12" and 24"x24" panels.

⁴ Concealed fastening available in max 36"x36" size.

⁵ Knurled knob and 1/4 turn fastening methods are only available with filter frame accessory.

⁶ Only available with model S580.



WEB SEARCH: S80 or S580

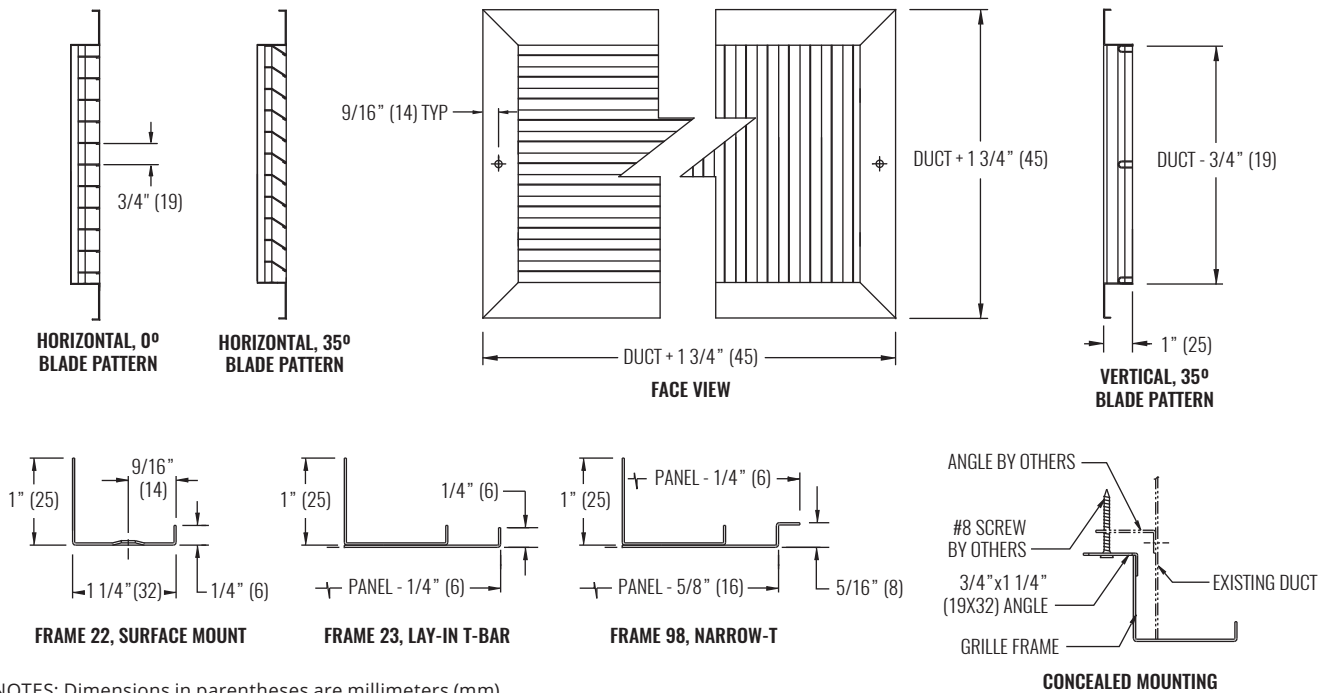


S80 / S580

Return Grille, Fixed Deflection, 3/4" Blade Spacing



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE		SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)		NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM	NOMINAL	CFM	CFM
0° DEFLECTION			35° DEFLECTION		
6"x6"	75 - 200	231 - 325	6"x6"	50 - 150	175 - 250
8"x8"	75 - 338	403 - 600	8"x8"	100 - 250	288 - 400
10"x10"	125 - 513	609 - 900	10"x10"	100 - 363	428 - 625
12"x6"	100 - 375	44 - 650	12"x6"	100 - 275	319 - 450
12"x8"	150 - 500	588 - 850	12"x8"	100 - 350	413 - 600
12"x12"	200 - 725	856 - 1250	12"x12"	150 - 500	588 - 850
14"x14"	250 - 950	1125 - 1650	14"x14"	200 - 650	763 - 1100
16"x16"	250 - 1175	1406 - 2100	16"x16"	250 - 813	953 - 1375
20"x20"	500 - 1800	2125 - 3100	20"x20"	400 - 1200	1400 - 2000
22"x10"	300 - 1050	1238 - 1800	22"x10"	225 - 713	834 - 1200
22"x22"	500 - 2100	2500 - 3700	22"x22"	400 - 1375	1619 - 2350
24"x12"	350 - 1325	1569 - 2300	24"x12"	300 - 900	1050 - 1500

SEE BACK SUPPLEMENT FOR DESIGN INFO

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- S85 - Steel, fixed deflection return with 1/2" blade spacing
- S585 - Aluminum, fixed deflection return with 1/2" blade spacing

FEATURES

- Horizontal or vertical blades
- 35° (H/V) or 0° (HZ/VZ) blade deflection
- 1/2" blade spacing
- 48"x48" maximum single unit size

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²
- F98 - Narrow-T ³

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes, concealed fastening ⁴, knurled knob ⁵, or 1/4-turn fasteners ⁵
- 5FF - Filter frame to fit 1" or 2" filter by others (8"x8" to 48"x36" or 36"x48")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh) ⁶

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections

² Minimum of 4" difference required between inlet and panel size for F23.

³ F98 only available with 24"x12" and 24"x24" panels.

⁴ Concealed fastening available in max 36"x36" size.

⁵ Knurled knob and 1/4 turn fastening methods are only available with filter frame accessory.

⁶ Only available with model S585.

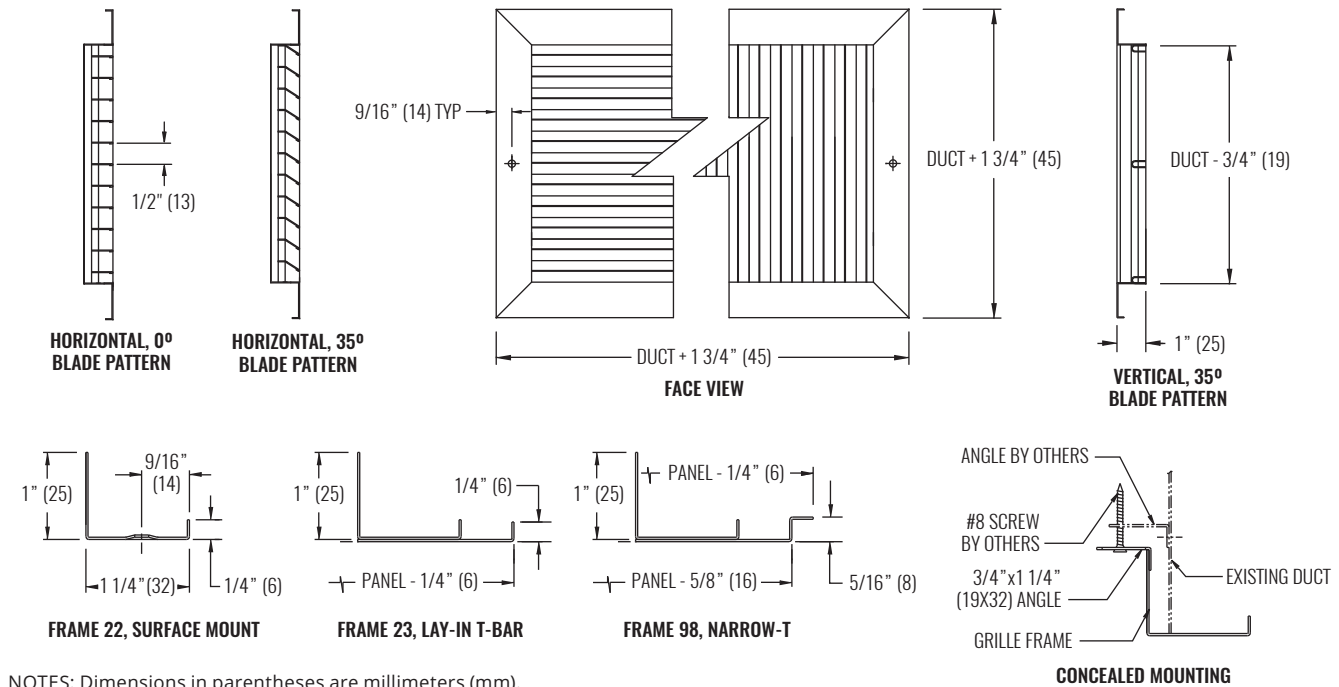


S85 / S585

Return Grille, Fixed Deflection, 1/2" Blade Spacing



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE		SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)		NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM	NOMINAL	CFM	CFM
0° DEFLECTION			35° DEFLECTION		
6"x4"	25 - 113	134 - 200	6"x4"	25 - 75	88 - 125
6"x6"	50 - 175	206 - 300	6"x6"	25 - 113	134 - 200
8"x4"	50 - 150	175 - 250	8"x4"	25 - 100	119 - 175
8"x6"	50 - 225	269 - 400	8"x6"	25 - 150	181 - 275
8"x8"	75 - 300	356 - 525	8"x8"	25 - 188	228 - 350
10"x10"	125 - 450	531 - 775	10"x10"	50 - 288	347 - 525
12"x8"	125 - 438	516 - 750	12"x8"	50 - 275	331 - 500
12"x12"	175 - 638	753 - 1100	12"x12"	50 - 388	472 - 725
14"x14"	225 - 838	991 - 1450	14"x14"	75 - 513	622 - 950
20"x20"	450 - 1575	1856 - 2700	20"x20"	100 - 950	1163 - 1800
22"x10"	250 - 925	1094 - 1600	22"x10"	100 - 575	694 - 1050
22"x22"	550 - 1875	2206 - 3200	22"x22"	200 - 1150	1388 - 2100

SEE BACK SUPPLEMENT FOR DESIGN INFO

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- S80P - Steel, perforated return
- S580P - Aluminum, perforated return

FEATURES

- 3/16" diameter holes on 1/4" staggered centers
- 51% free area
- 48"x48" maximum single unit size (S80P only)
- 48"x36" maximum single unit size (S580P only)

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²
- F98 - Narrow-T ³

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes, knurled knob ⁴, or 1/4-turn fasteners ⁴
- 5FF - Filter frame to fit 1" or 2" filter by others (8"x8" to 48"x36" or 36"x48")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh) ⁵

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

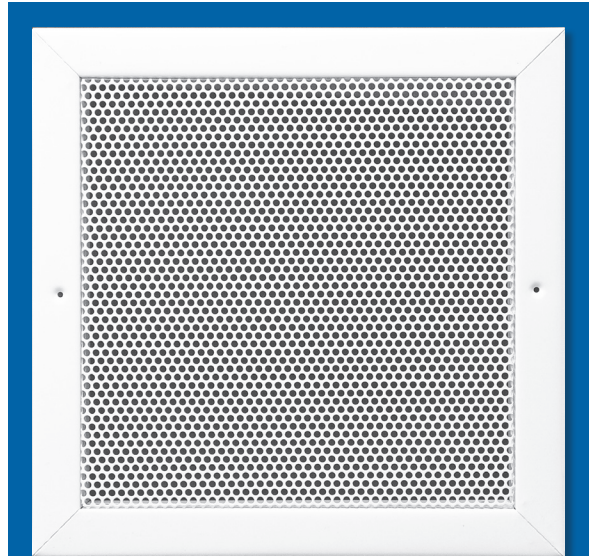
¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

² Minimum of 4" difference required between inlet and panel size for F23.

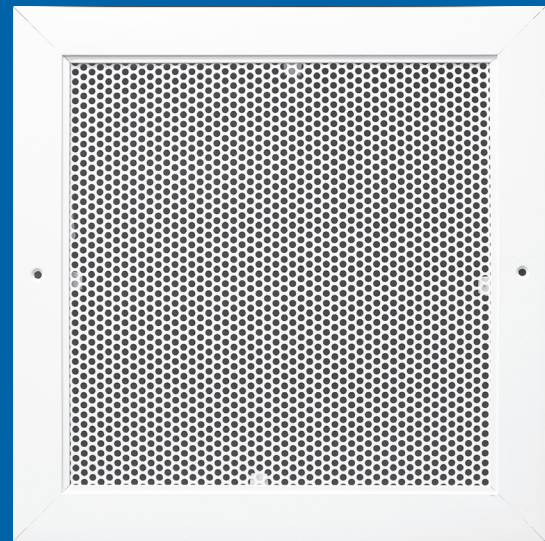
³ F98 only available with 24"x12" and 24"x24" panels.

⁴ Knurled knob and 1/4 turn fastening methods are only available with filter frame accessory.

⁵ Only available with model S585.



S80P



S580P

GRILLES | RETURN

S80P / S580P

WEB SEARCH: S80P or S580P

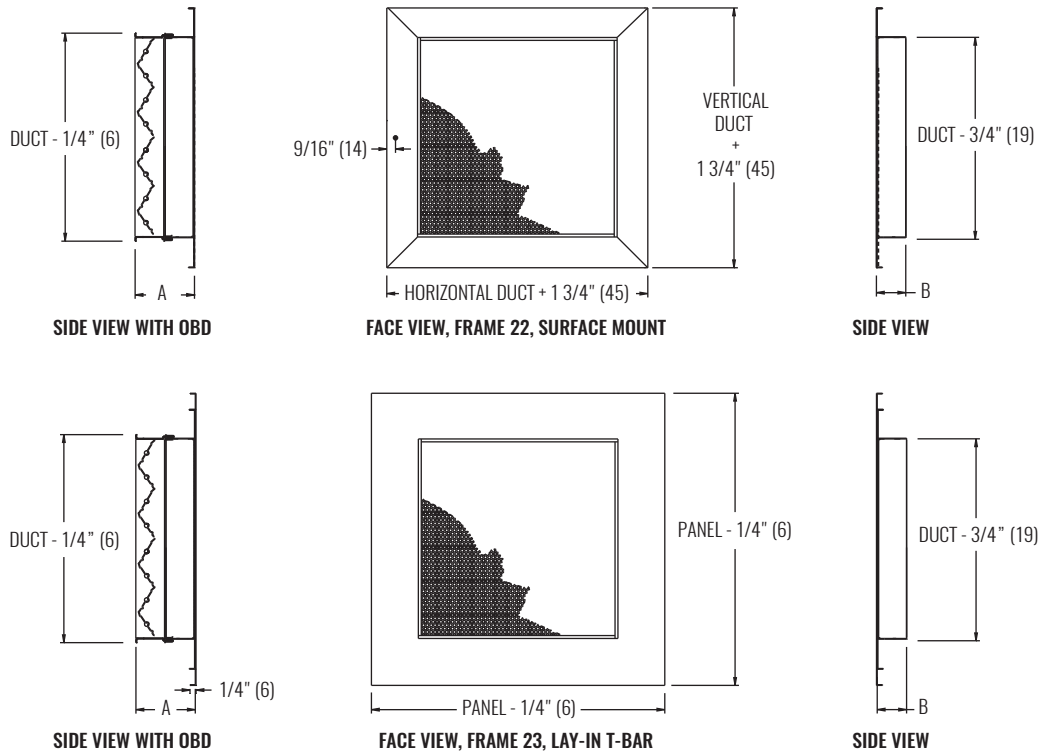


S80P / S580P

Return Grille, Perforated Face



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE DATA

SIZE	PERFORMANCE		DIMENSIONS		
	NC (< 25)	NC (25 - 40)	MODEL	A	B
NOMINAL	CFM	CFM			
6"x6"	25 - 150	213 - 525	S80P	2 3/4" (70)	1 1/4" (32)
8"x8"	25 - 334	438 - 850	S580P	2 1/4" (57)	1" (25)
10"x10"	25 - 438	541 - 850	SEE BACK SUPPLEMENT FOR DESIGN INFORMATION		
12"x12"	25 - 616	813 - 1600	NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10 ⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.		
14"x14"	125 - 594	828 - 2000			
16"x16"	100 - 700	1000 - 2500			
20"x20"	100 - 1375	1800 - 3500			
22"x22"	100 - 1563	2050 - 4000			
22"x10"	100 - 625	888 - 2200			
24"x12"	100 - 750	1075 - 2700			
30"x30"	100 - 2500	3300 - 6500			
34"x22"	100 - 2163	2850 - 5600			

MODEL

- S480 - Steel, heavy duty return

FEATURES

- Steel, heavy duty construction
- Horizontal (H) or vertical (V) blades
- 1/2" 14 gauge blade spacing at 38° blade fixed deflection
- 3/8" blade spacing at 0° blade fixed deflection
- 16 gauge frame
- 48"x48" maximum single unit size

GRILLE SIZES¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount

COMPATIBLE OPTIONS AND ACCESSORIES

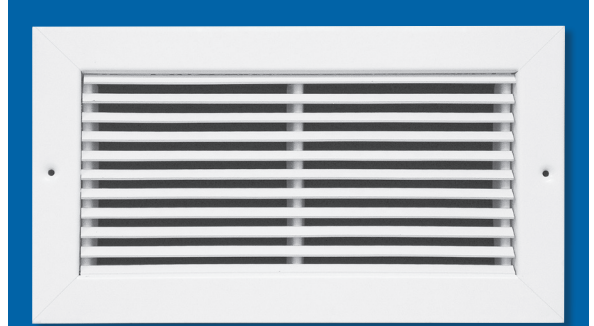
- Compatible options and accessories
- Screw holes, concealed fastening², knurled knob³, or 1/4-turn fasteners³
- 5FF - Filter frame to fit 1" filter by others (8"x8" to 24"x24")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

² Concealed fastening available in max 36"x36" size.

³ Knurled knob and 1/4 turn fastening methods are only available with filter frame accessory.

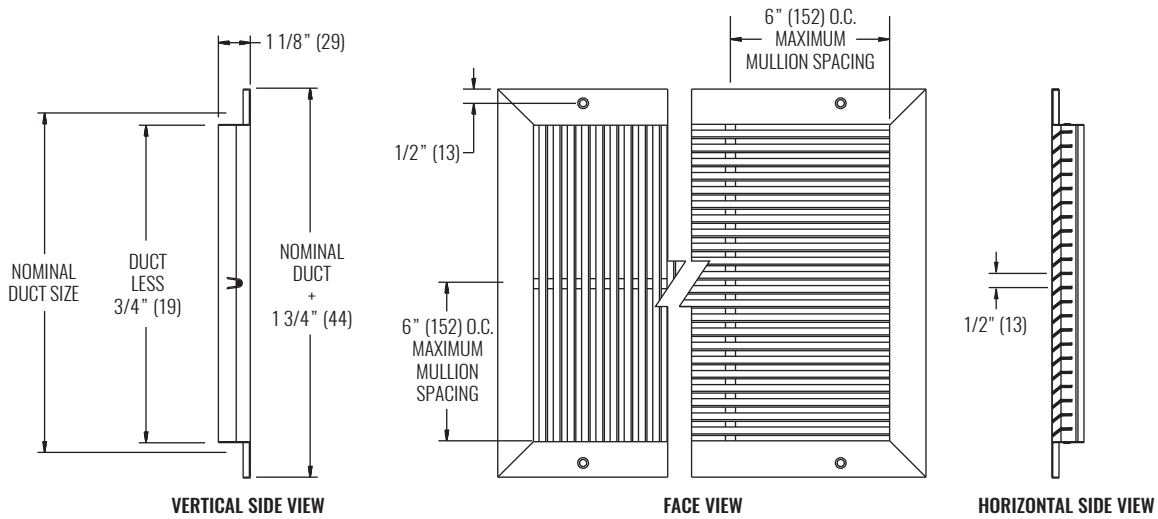


S480

Return Grille, Heavy Duty, Steel



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration shown for 38° deflection.

PERFORMANCE DATA

SIZE	PERFORMANCE		SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)		NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM	NOMINAL	CFM	CFM
0° DEFLECTION			38° DEFLECTION		
8"x8"	50 - 275	300 - 500	8"x8"	50 - 200	238 - 350
10"x6"	50 - 250	300 - 525	10"x6"	25 - 519	630 - 964
10"x10"	75 - 400	450 - 825	10"x10"	25 - 288	353 - 550
12"x6"	25 - 250	325 - 625	12"x6"	25 - 213	259 - 400
12"x8"	50 - 400	425 - 800	12"x8"	25 - 275	338 - 525
12"x12"	100 - 550	600 - 1150	12"x12"	25 - 388	478 - 750
16"x16"	100 - 900	1000 - 1900	16"x16"	50 - 650	800 - 1250
18"x18"	300 - 1100	1200 - 2300	18"x18"	75 - 788	966 - 1500
22"x22"	400 - 1550	1700 - 3200	22"x22"	125 - 1113	1359 - 2100
24"x12"	200 - 1000	1100 - 2050	24"x12"	100 - 725	881 - 1350
24"x24"	500 - 1800	2000 - 3700	24"x24"	200 - 1350	1638 - 2500
48"x48"	2000 - 5700	6100 - 11700	48"x48"	700 - 4350	5263 - 8000

SEE BACK SUPPLEMENT FOR DESIGN INFO

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- S5480 - Aluminum, heavy duty return

FEATURES

- Aluminum, heavy duty construction
- Horizontal (H) or vertical (V) blades
- Fixed deflection, heavy duty construction
- 30° or 0° blade deflection
- 1/2" blade spacing

GRILLE SIZES¹

- Width: 6" - 96" (1/4" increments)
- Height: 4" - 96" (1/4" increments)

FRAME STYLES

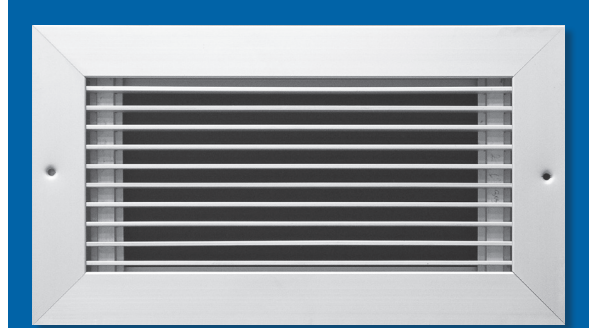
- F22 - Surface mount

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes
- S5480OBD - Aluminum, painted, heavy duty damper

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 96"x96". Units over 96"x48" provided in multiple sections.

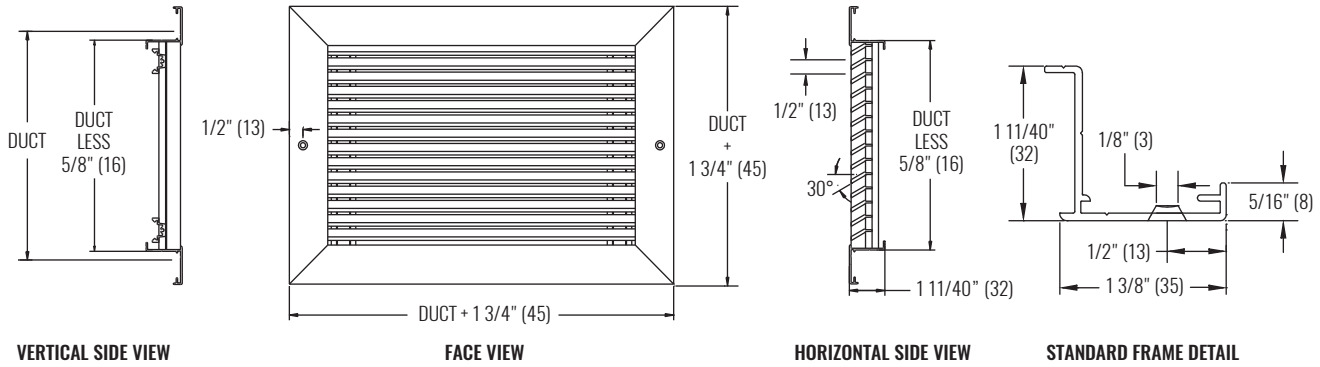


S5480

Return Grille, Heavy Duty, Aluminum



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration shown for 30° deflection.

PERFORMANCE DATA

SIZE	PERFORMANCE		SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)		NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM	NOMINAL	CFM	CFM
0° DEFLECTION			30° DEFLECTION		
8"x8"	50 - 225	269 - 400	8"x8"	75 - 200	231 - 325
10"x6"	75 - 213	247 - 350	10"x6"	75 - 175	200 - 275
10"x10"	100 - 375	444 - 650	10"x10"	125 - 313	359 - 500
12"x6"	50 - 250	300 - 450	12"x6"	75 - 213	247 - 350
12"x8"	75 - 350	419 - 625	12"x8"	125 - 300	344 - 475
12"x12"	125 - 550	656 - 975	12"x12"	150 - 450	525 - 750
14"x14"	200 - 775	919 - 1350	14"x14"	200 - 600	700 - 1000
20"x8"	150 - 600	713 - 1050	20"x8"	150 - 475	556 - 800
22"x22"	500 - 1900	2250 - 3300	22"x22"	500 - 1400	1625 - 2300
24"x12"	300 - 1125	1331 - 1950	24"x12"	300 - 850	988 - 1400
24"x24"	500 - 2200	2625 - 3900	24"x24"	600 - 1650	1913 - 2700
32"x24"	700 - 2900	3450 - 5100	32"x24"	700 - 2100	2450 - 3500

SEE BACK SUPPLEMENT FOR DESIGN INFO

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- AFS580 - Aluminum, fixed airfoil blade return

FEATURES

- Horizontal (H) or vertical (V) extruded aluminum airfoil blades
- 45° (H/V) or 0° (HZ/VZ) blade deflection
- 3/4" blade spacing
- Extruded aluminum frame

GRILLE SIZES

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES ¹

- F22 - Surface mount
- F23 - Lay-in T-bar ²
- F98 - Narrow-T ³
- FTB - Channel frame ⁴

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes, concealed fastening ⁵, knurled knob ⁶, or 1/4-turn fasteners ⁶
- 5FF - Filter frame to fit 1" or 2" filter by others (8"x8" to 48"x36" or 36"x48")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh)

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections

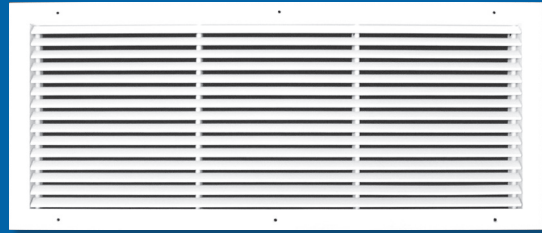
² Minimum of 4" difference required between inlet and panel size for F23.

³ F98 only available with 24"x12" and 24"x24" panels

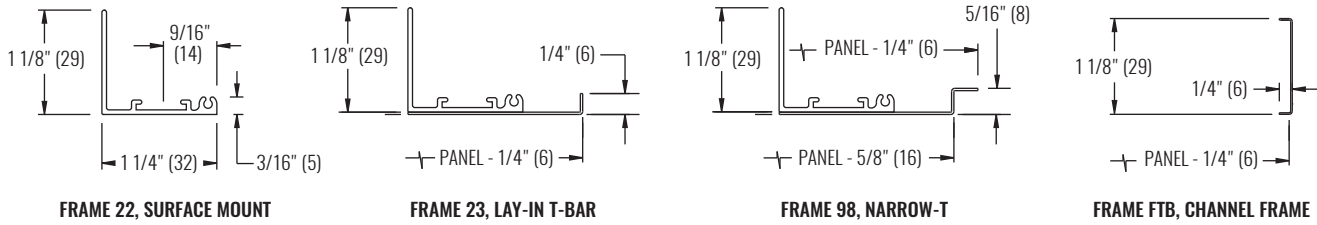
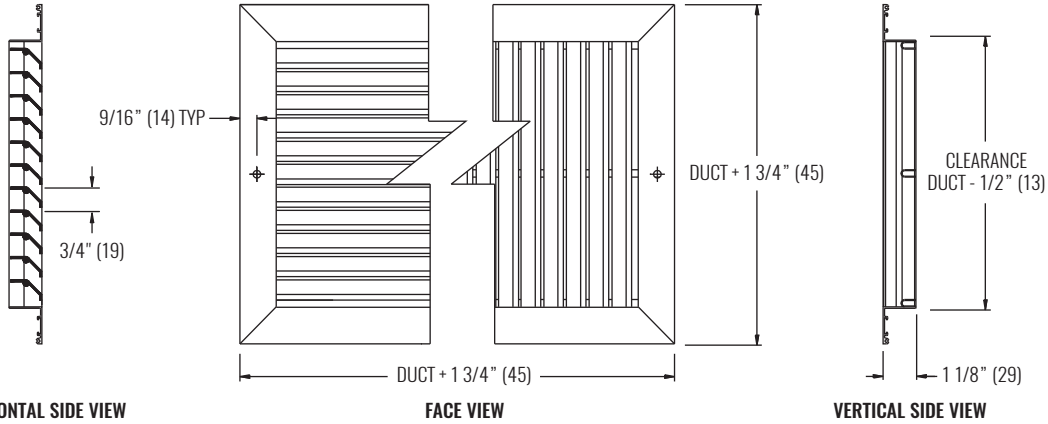
⁴ FTB frame available in 6"x6" to 48"x48" only, no panel

⁵ Concealed fastening available in max 36"x36" size. Not available with 45° deflection.

⁶ Knurled knob and 1/4 turn fastening methods are only available with filter frame accessory.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration (top) shown for 45° deflection.

PERFORMANCE DATA

SIZE	PERFORMANCE		SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)		NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM	NOMINAL	CFM	CFM
0° DEFLECTION			45° DEFLECTION		
6"x6"	50 - 163	191 - 275	6"x6"	25 - 100	119 - 175
8"x6"	75 - 225	263 - 375	8"x6"	25 - 125	150 - 225
8"x7"	75 - 250	294 - 425	8"x7"	25 - 125	181 - 275
8"x8"	75 - 288	341 - 500	8"x8"	25 - 163	197 - 300
10"x6"	100 - 275	319 - 450	10"x6"	25 - 150	181 - 275
10"x10"	125 - 438	516 - 750	10"x10"	50 - 250	300 - 450
12"x6"	100 - 25	381 - 550	12"x6"	25 - 175	213 - 325
12"x12"	175 - 613	722 - 1050	12"x12"	50 - 338	409 - 625
18"x18"	350 - 1263	1491 - 2175	18"x18"	100 - 688	834 - 1275
20"x8"	200 - 675	794 - 1150	20"x8"	50 - 238	284 - 425
22"x10"	250 - 888	1047 - 1525	22"x10"	75 - 488	591 - 900
22"x22"	500 - 1800	2125 - 3100	22"x22"	100 - 950	1163 - 1800

SEE BACK SUPPLEMENT FOR DESIGN INFO

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- AFS585 - Aluminum fixed airfoil blade return

FEATURES

- Horizontal (H) or vertical (V) extruded aluminum airfoil blades
- 45° (H/V) or 0° (HZ/VZ) blade deflection
- 1/2" blade spacing
- Extruded aluminum frame

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²
- F98 - Narrow-T ³
- FTB - Channel frame ⁴

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes, concealed fastening ⁵, knurled knob ⁶, or 1/4-turn fasteners ⁶
- 5FF - Filter frame to fit 1" or 2" filter by others (8"x8" to 48"x36" or 36"x48")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh)

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

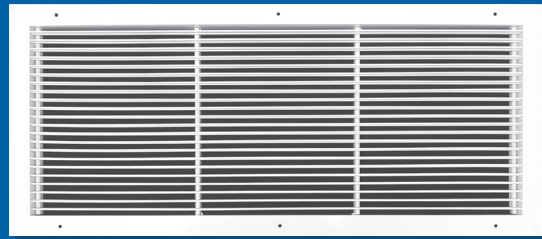
² Minimum of 4" difference required between inlet and panel size for F23.

³ F98 only available with 24"x12" and 24"x24" panels.

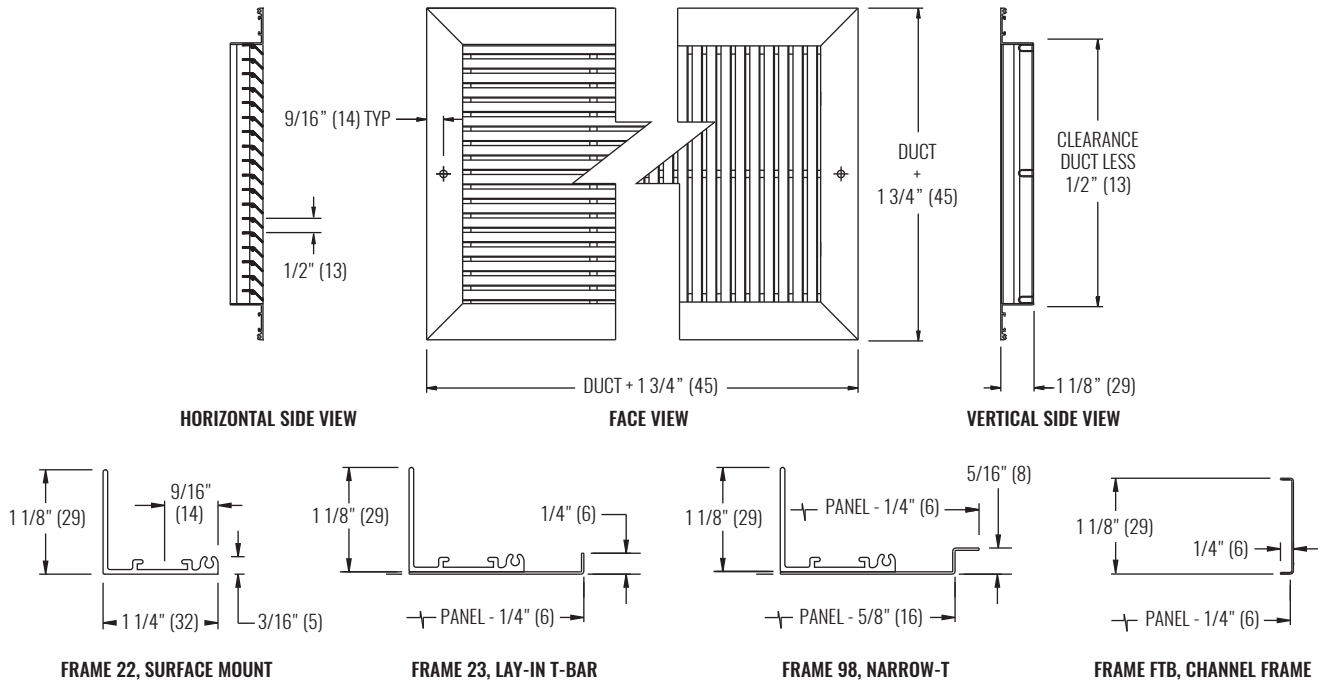
⁴ FTB frame available in 6"x6" to 48"x48" only, no panel.

⁵ Concealed fastening available in max 36"x36" size. Not available with 45° deflection.

⁶ Knurled knob and 1/4 turn fastening methods are only available with filter frame accessory.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration (top) shown for 45° deflection.

PERFORMANCE DATA

SIZE	PERFORMANCE		SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)		NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM	NOMINAL	CFM	CFM
0° DEFLECTION			45° DEFLECTION		
6"x6"	50 - 163	191 - 275	6"x6"	25 - 100	119 - 175
8"x6"	75 - 225	263 - 375	8"x6"	25 - 125	150 - 225
8"x7"	75 - 250	294 - 425	8"x7"	25 - 125	181 - 275
8"x8"	75 - 288	341 - 500	8"x8"	25 - 163	197 - 300
10"x6"	100 - 275	319 - 450	10"x6"	25 - 150	181 - 275
10"x10"	125 - 438	516 - 750	10"x10"	50 - 250	300 - 450
12"x6"	100 - 25	381 - 550	12"x6"	25 - 175	213 - 325
12"x12"	175 - 613	722 - 1050	12"x12"	50 - 338	409 - 625
18"x18"	350 - 1263	1491 - 2175	18"x18"	100 - 688	834 - 1275
20"x8"	200 - 675	794 - 1150	20"x8"	50 - 238	284 - 425
22"x10"	250 - 888	1047 - 1525	22"x10"	75 - 488	591 - 900
22"x22"	500 - 1800	2125 - 3100	22"x22"	100 - 950	1163 - 1800

SEE BACK SUPPLEMENT FOR DESIGN INFO

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- AFCS80 - Steel, fixed curved blade return

FEATURES

- Steel construction
- Horizontal (H) or vertical (V) blades
- Curved blades
- 3/4" blade spacing
- 45° deflection

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²
- F98 - Narrow-T ³
- FTB - Channel frame ⁴

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes, concealed fastening ⁵, knurled knob ⁶, or 1/4-turn fasteners ⁶
- 5FF - Filter frame to fit 1" or 2" filter by others (8"x8" to 48"x36" or 36"x48")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh)

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

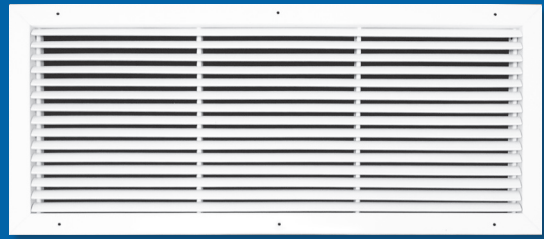
² Minimum of 4" difference required between inlet and panel size for F23.

³ F98 only available with 24"x12" and 24"x24" panels.

⁴ FTB frame available in 6"x6" to 48"x48" only, no panel.

⁵ Concealed fastening available in max 36"x36" size.

⁶ Knurled knob and 1/4 turn fastening methods are only available with filter frame accessory.

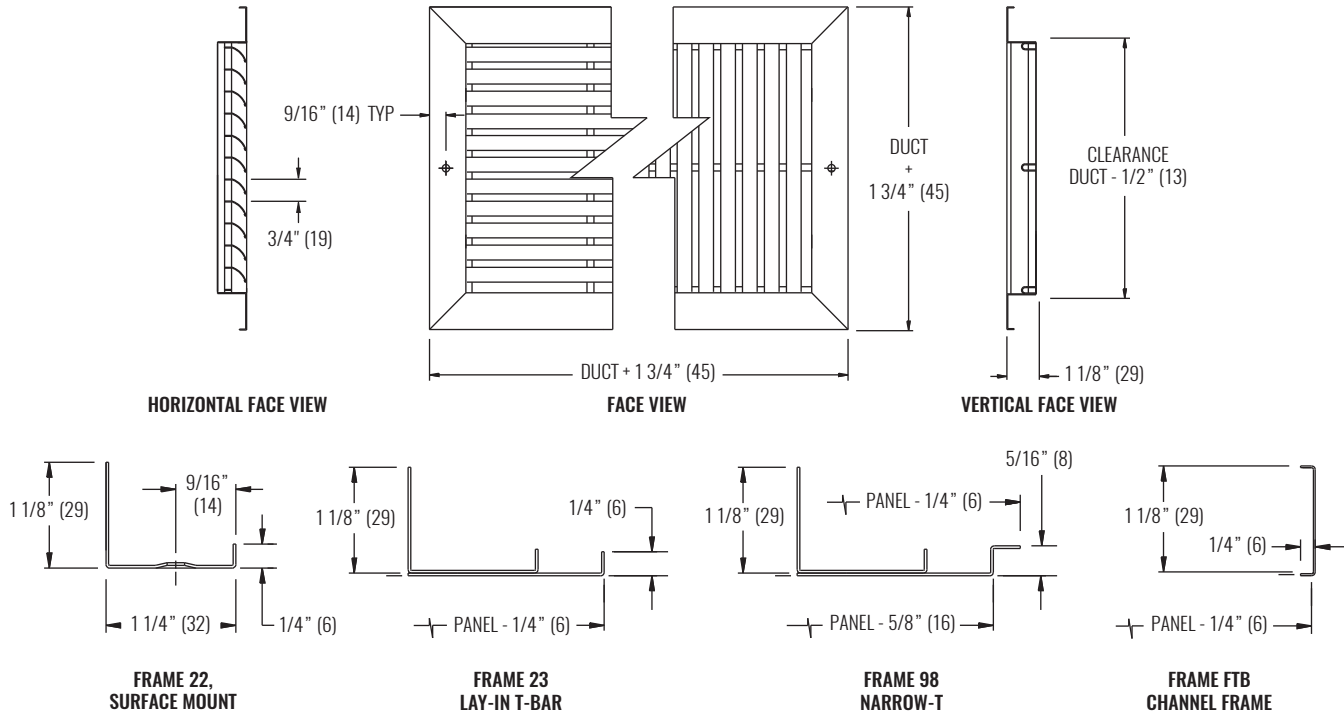


AFCS80

Return Grille, Architectural, 45° Curved Blade



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration (top) shown for 45° deflection.

PERFORMANCE DATA

SIZE NOMINAL	PERFORMANCE	
	NC (< 25) CFM	NC (25 - 40) CFM
6"x6"	57 - 89	120 - 182
8"x8"	25 - 163	197 - 300
10"x10"	50 - 250	300 - 450
12"x8"	142 - 219	297 - 375
12"x12"	50 - 338	409 - 625
14"x14"	100 - 450	538 - 800
18"x6"	157 - 244	330 - 417
20"x20"	463 - 733	1004 - 1274
22"x10"	125 - 416	513 - 900
22"x22"	200 - 963	1153 - 1725
24"x12"	100 - 613	741 - 1125
24"x24"	200 - 1100	1325 - 2000

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- AFCS85 - Steel, fixed curved blade return

FEATURES

- Steel construction
- Horizontal (H) or vertical (V) blades
- Curved blades
- 1/2" blade spacing
- 30° deflection

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar ²
- F98 - Narrow-T ³
- FTB - Channel frame ⁴

PANEL SIZES

- 24"x12"
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes, concealed fastening ⁵, knurled knob ⁶, or 1/4-turn fasteners ⁶
- 5FF - Filter frame to fit 1" or 2" filter by others (8"x8" to 48"x36" or 36"x48")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh)

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

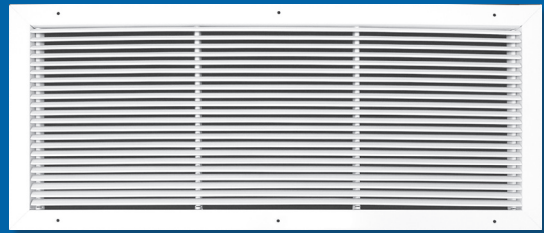
² Minimum of 4" difference required between inlet and panel size for F23.

³ F98 only available with 24"x12" and 24"x24" panels.

⁴ FTB frame available in 6"x6" to 48"x48" only, no panel.

⁵ Concealed fastening available in max 36"x36" size.

⁶ Knurled knob and 1/4 turn fastening methods are only available with filter frame accessory.

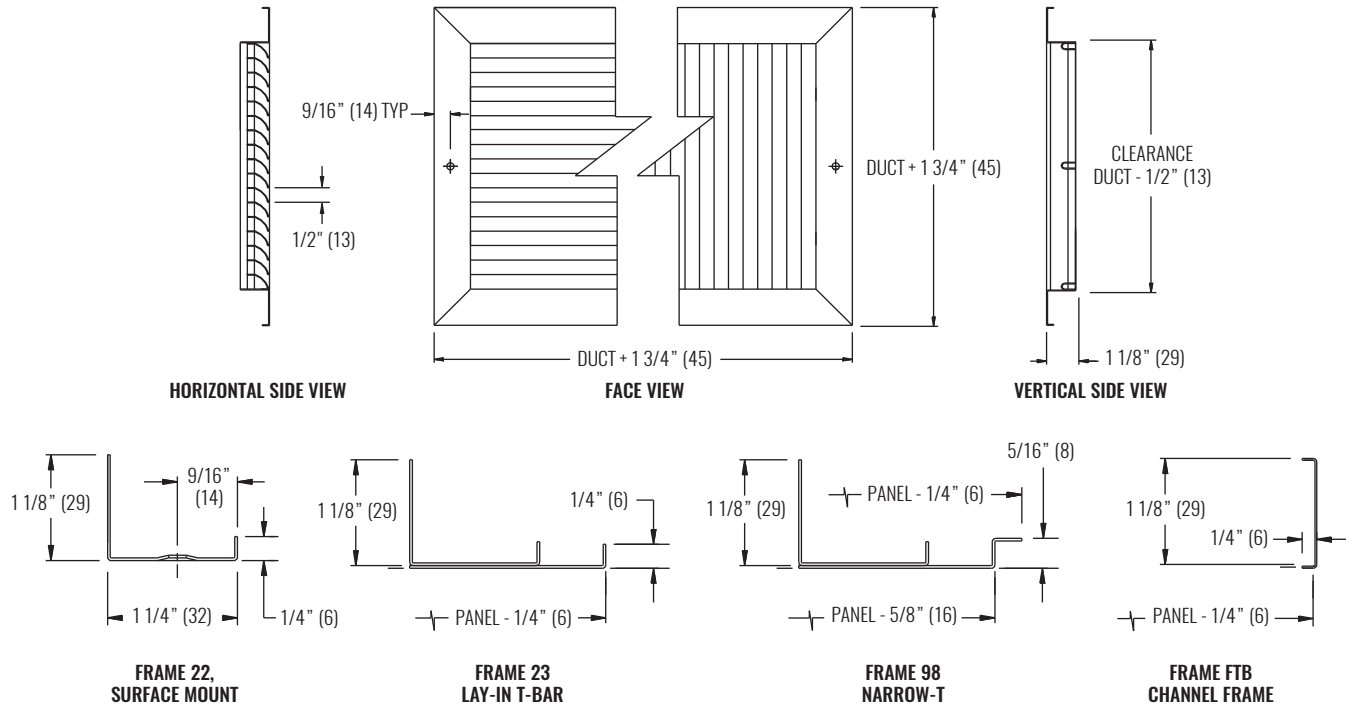


AFCS85

Return Grille, Architectural, 30° Curved Blade



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration (top) shown for 30° deflection.

PERFORMANCE DATA

SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)
NOMINAL	CFM	GFM
6"x6"	75 - 125	138 - 175
8"x8"	150 - 225	244 - 300
10"x10"	225 - 350	381 - 475
12"x12"	325 - 500	544 - 675
14"x14"	400 - 663	728 - 925
18"x18"	650 - 1063	1166 - 1475
20"x20"	800 - 1300	1425 - 1800
22"x6"	275 - 438	478 - 600
22"x10"	450 - 738	809 - 1025
22"x22"	950 - 1538	1684 - 2125
24"x14"	650 - 1088	1197 - 1525
40"x6"	475 - 763	834 - 1050

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- EG5 - 1/2"x1/2"x1/2" aluminum cube core return grille, channel frame or core only
- EG10 - 1"x1"x1" aluminum cube core return grille, channel frame or core only
- EG15 - 1/2"x1/2"x1" aluminum cube core return grille, channel frame or core only

FEATURES

- Aluminum construction

GRILLE SIZES

- Width: 6" - 48" (1" increments)
- Height: 4" - 48" (1" increments)

FRAME STYLES

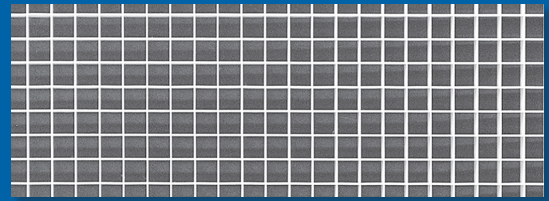
- F23 - Lay-in T-bar (core only) ¹
- FTB - Channel frame for lay-in T-bar ²

PANEL SIZES

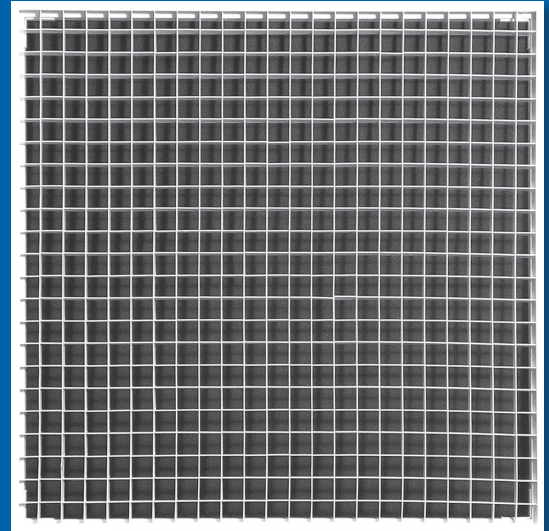
- 12"x12"
- 24"x12"
- 24"x24"
- 48"x12"
- 48"x24"

NOTES:

- ¹ F23 is loose core only with no frame. WxH must match panel size.
- ² FTB channel frame not available with panel.



EG5, FRAME 23



EG10, FRAME FTB

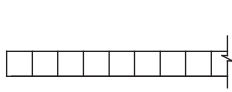


EG5 / EG10 / EG15

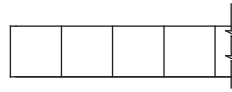
Return Grille, Egg Crate Core



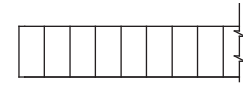
DIMENSIONAL DATA



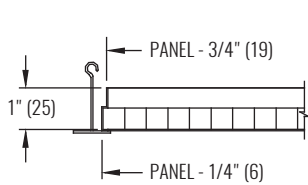
EG5 FRAME 23, LAY-IN T-BAR
1/2" x 1/2" x 1/2"
(13 x 13 x 13)



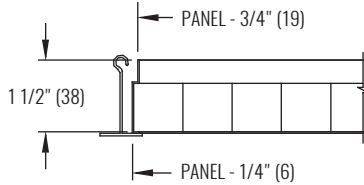
EG10 FRAME 23, LAY-IN T-BAR
1" x 1" x 1"
(25 x 25 x 25)



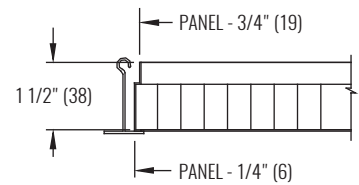
EG15 FRAME 23, LAY-IN T-BAR
1/2" x 1/2" x 1"
(13 x 13 x 25)



EG5 FRAME FTB, CHANNEL FRAME



EG10 FRAME FTB, CHANNEL FRAME



EG15 FRAME FTB, CHANNEL FRAME

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE		SIZE	PERFORMANCE		SIZE	PERFORMANCE	
NOMINAL	NC (< 25)	NC (25 - 40)	NOMINAL	NC (< 25)	NC (25 - 40)	NOMINAL	NC (< 25)	NC (25 - 40)
	CFM	CFM		CFM	CFM		CFM	CFM
MODEL: EG5			MODEL: EG10			MODEL: EG15		
6"x6"	100 - 225	256 - 350	6"x6"	75 - 188	216 - 300	6"x6"	100 - 225	256 - 350
8"x8"	150 - 375	431 - 600	8"x8"	150 - 375	431 - 600	8"x8"	150 - 375	431 - 600
10"x10"	200 - 550	638 - 900	10"x10"	250 - 575	656 - 900	10"x10"	250 - 575	656 - 900
12"x12"	300 - 775	894 - 1250	12"x6"	200 - 425	481 - 650	10"x22"	500 - 1150	1313 - 1800
14"x14"	400 - 1025	1181 - 1650	12"x12"	350 - 800	913 - 1250	12"x12"	350 - 800	913 - 1250
16"x16"	500 - 1300	1500 - 2100	14"x14"	450 - 800	914 - 1257	14"x14"	450 - 1050	1200 - 1650
18"x18"	600 - 1600	1850 - 2600	16"x16"	600 - 1350	1538 - 2100	16"x16"	600 - 1350	1538 - 2100
20"x20"	800 - 1950	2238 - 3100	20"x20"	900 - 2000	2275 - 3100	20"x8"	400 - 875	994 - 1350
22"x10"	450 - 1125	1294 - 1800	22"x10"	500 - 1150	1313 - 1800	20"x20"	925 - 2013	2284 - 3100
22"x22"	900 - 2300	2650 - 3700	22"x22"	1000 - 2350	2688 - 3700	22"x10"	500 - 1150	1313 - 1800
24"x12"	600 - 1450	1663 - 2300	24"x24"	1200 - 2750	3138 - 4300	22"x22"	1000 - 2350	2688 - 3700
24"x24"	1100 - 2700	3100 - 4300	30"x30"	1800 - 4150	4738 - 6500	24"x24"	1200 - 2750	3138 - 4300

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- EGC5 - 1/2"x1/2"x1/2" aluminum cube core egg crate return
- EGC10 - 1"x1"x1" aluminum cube core egg crate return
- EGC15 - 1/2"x1/2"x1" aluminum cube core egg crate return

FEATURES

- Aluminum construction
- 1 1/4" flange

GRILLE SIZES ¹

- Width: 6" - 240" (1/4" increments)
- Height: 4" - 240" (1/4" increments)

FRAME STYLES

- F22 - Surface mount, aluminum
- F23 - Lay-in T-bar, aluminum ²
- F98 - Narrow-T ³
- S22 - Surface mount, steel frame
- S23 - Lay-in T-bar, steel frame ^{2 4}

PANEL SIZES

- 12"x12"
- 24"x12"
- 24"x24"
- 48"x24"
- 48"x48"

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes, concealed fastening ⁵, knurled knob ⁶, or 1/4-turn fasteners ⁶
- 5FF - Filter frame to fit 1" or 2" filter by others (8"x8" to 48"x36" or 36"x48")
- 8PF - Steel plaster frame (48"x36" or 36"x48" max)
- 58PF - Aluminum plaster frame (48"x36" or 36"x48" max)
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh)

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Max ordered size is 240"x96" or 96"x240". Units over 48"x48" provided in multiple sections.

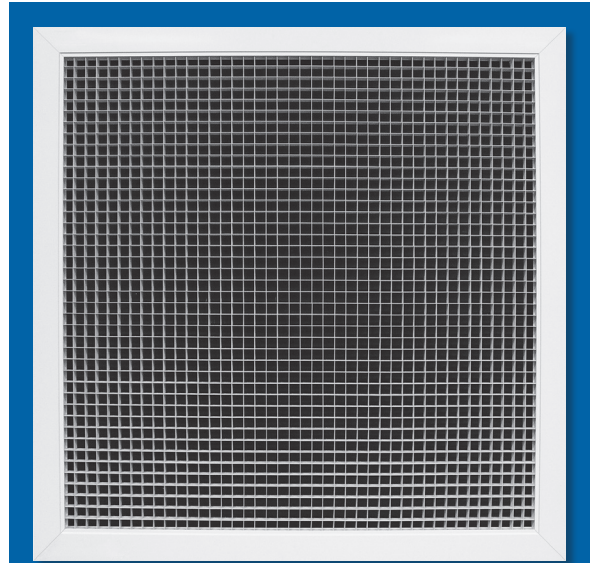
² Minimum of 4" difference required between inlet and panel size.

³ F98 only available with EGC5 and 24"x12" or 24"x24" panels.

⁴ Frame S23 only available with panel sizes 24"x24" and 48"x24".

⁵ Concealed fastening available in max 36"x36" size.

⁶ Knurled knob and 1/4 turn fastening methods are only available with EGC5 and filter frame accessory.



EGC5

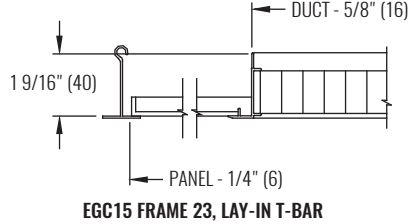
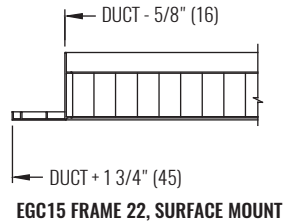
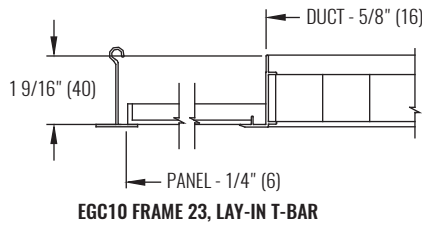
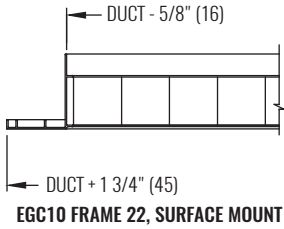
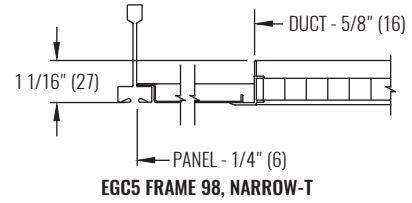
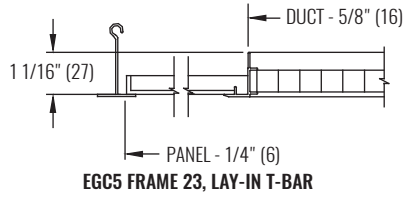
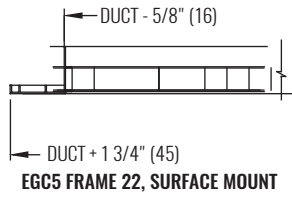


EGC5 / EGC10 / EGC15

Return Grille, Egg Crate



DIMENSIONAL DATA



NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

PERFORMANCE DATA

SIZE	PERFORMANCE		SIZE	PERFORMANCE		SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)		NC (< 25)	NC (25 - 40)		NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM	NOMINAL	CFM	CFM	NOMINAL	CFM	CFM
MODEL: EGC5			MODEL: EGC10			MODEL: EGC15		
6"x6"	100 - 225	256 - 350	6"x6"	75 - 188	216 - 300	6"x6"	100 - 225	256 - 350
8"x8"	150 - 375	431 - 600	8"x8"	150 - 375	431 - 600	8"x8"	150 - 375	431 - 600
10"x10"	200 - 550	638 - 900	10"x10"	250 - 575	656 - 900	10"x10"	250 - 575	656 - 900
12"x12"	300 - 775	894 - 1250	12"x6"	200 - 425	481 - 650	10"x22"	500 - 1150	1313 - 1800
14"x14"	400 - 1025	1181 - 1650	12"x12"	350 - 800	913 - 1250	12"x12"	350 - 800	913 - 1250
16"x16"	500 - 1300	1500 - 2100	14"x14"	450 - 800	914 - 1257	14"x14"	450 - 1050	1200 - 1650
18"x18"	600 - 1600	1850 - 2600	16"x16"	600 - 1350	1538 - 2100	16"x16"	600 - 1350	1538 - 2100
20"x20"	800 - 1950	2238 - 3100	20"x20"	900 - 2000	2275 - 3100	20"x8"	400 - 875	994 - 1350
22"x10"	450 - 1125	1294 - 1800	22"x10"	500 - 1150	1313 - 1800	20"x20"	925 - 2013	2284 - 3100
22"x22"	900 - 2300	2650 - 3700	22"x22"	1000 - 2350	2688 - 3700	22"x10"	500 - 1150	1313 - 1800
24"x12"	600 - 1450	1663 - 2300	24"x24"	1200 - 2750	3138 - 4300	22"x22"	1000 - 2350	2688 - 3700
24"x24"	1100 - 2700	3100 - 4300	30"x30"	1800 - 4150	4738 - 6500	24"x24"	1200 - 2750	3138 - 4300

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

MODEL

- EGC545 - Deterred sight egg crate return

FEATURES

- 1/2"x1/2"x1/2", 45° aluminum cube core
- 1 1/4" flange

GRILLE SIZES

- 10" x 10"
- 22" x 10"
- 22" x 22"
- 46" x 22"

FRAME STYLES

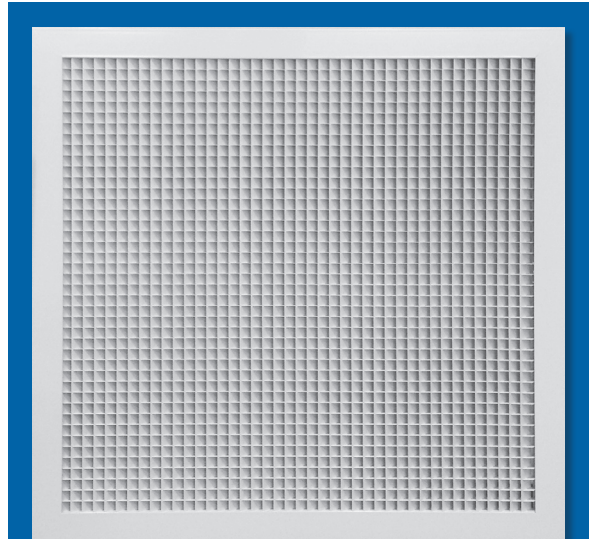
- F22 - Surface mount ¹

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh)

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Sized to fit lay-in T-bar ceiling applications. Choose no screw holes for lay-in.

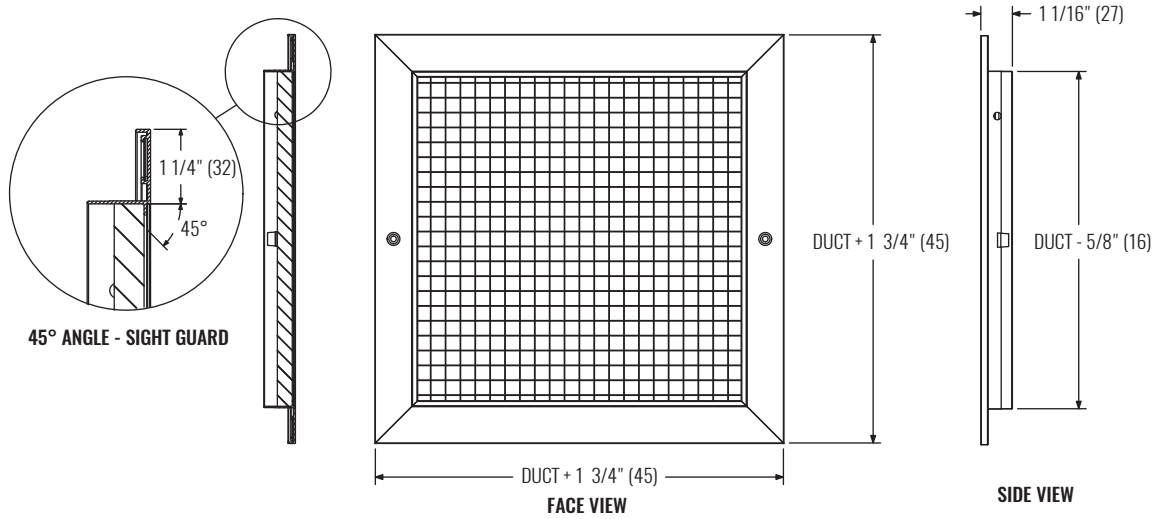


EGC545

Return Grille, 45° Deterred Sight Egg Crate



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM
10"x10"	149 - 273	282 - 628
22"x10"	341 - 511	546 - 956
22"x22"	549 - 985	1019 - 1826
46"x22"	1169 - 1770	1903 - 3315

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10^{-12} Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- EGCX - Sightproof egg crate return

FEATURES

- 1/2"x1/2"x1" completely sightproof aluminum cube core
- 1 1/4" flange
- Specifiable, industry exclusive!

GRILLE SIZES

- 10" x 10"
- 22" x 10"
- 22" x 22"
- 46" x 22"

FRAME STYLES

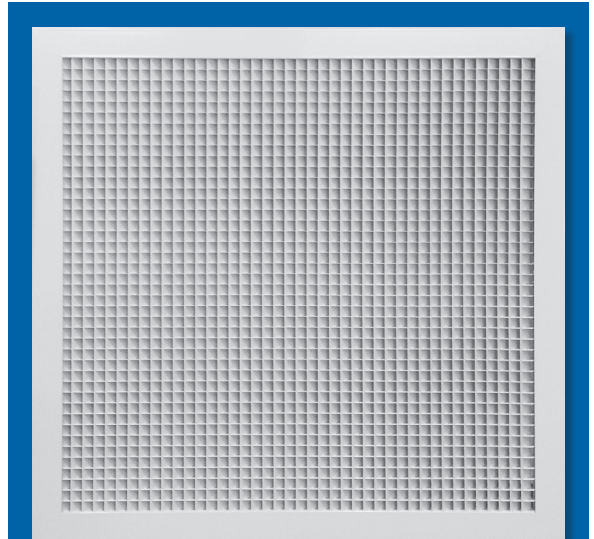
- F22 - Surface mount ¹

COMPATIBLE OPTIONS AND ACCESSORIES

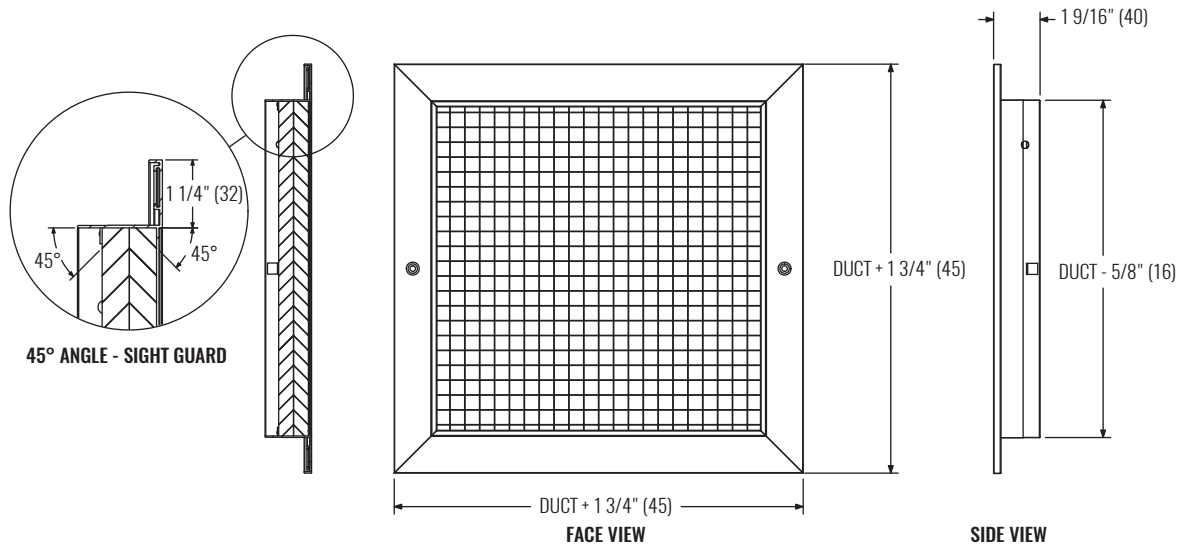
- Screw holes
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh)

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ Sized to fit lay-in T-bar ceiling applications. Choose no screw holes for lay-in.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM
10"x10"	119 - 178	191 - 297
22"x10"	273 - 378	399 - 615
22"x22"	549 - 784	843 - 1254
46"x22"	1002 - 1502	1627 - 2504

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5810 - Fixed blade, removable, reversible core, aluminum return

FEATURES

- Field adjustable 5° or 15°, up or down deflection
- Horizontal (H) or vertical (V) front blades
- Available as core only

GRILLE SIZES

- Width: 6" - 48" (1/4" increments)
- Height: 4" - 48" (1/4" increments)
- Core Only Width: 6" - 72" (1/4" increments)
- Core Only Height: 4" - 24" (1/4" increments)

FRAME STYLES

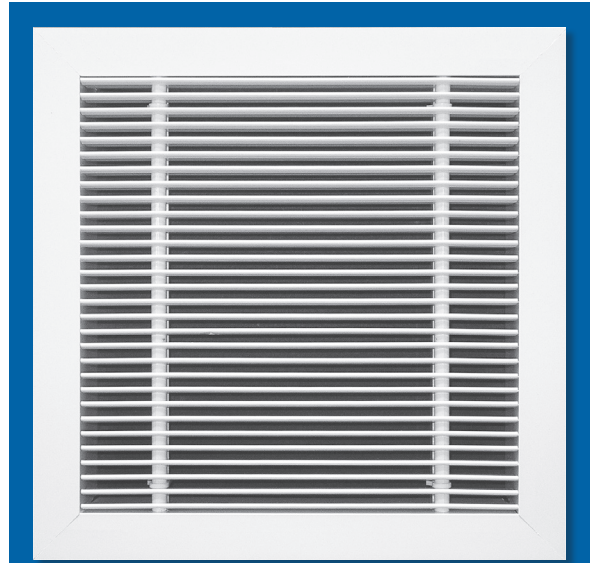
- F00 - Core only ¹
- F22 - Surface mount

COMPATIBLE OPTIONS AND ACCESSORIES

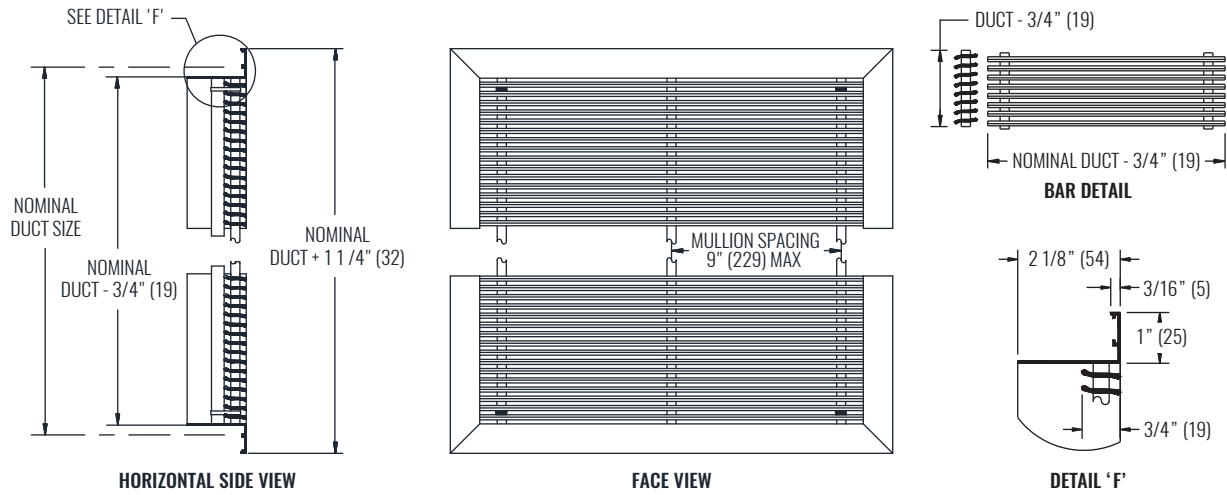
- Flat frame
- Screw holes
- OBD - Steel, square or rectangular damper
- 5OBD - Aluminum, square or rectangular damper
- POBD - Steel, square or rectangular painted damper
- SRAC325 - Steel, square to round adapter
- DS - Debris screen (1/4" mesh) or IS - Insect screen (1/16" mesh)

NOTES: Not all options available with all configurations. Many options not compatible with other options. Size limitations on accessories. See website for complete compatibility.

¹ F00 (core only) not available with screw holes, frame, dampers, or debris/insect screens.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM
6"x6"	50 - 150	175 - 250
8"x6"	50 - 200	238 - 350
8"x8"	75 - 263	309 - 450
10"x4"	50 - 163	191 - 275
10"x10"	125 - 400	469 - 675
12"x8"	125 - 388	453 - 650
12"x12"	150 - 550	650 - 950
14"x14"	200 - 725	856 - 1250
16"x16"	250 - 925	1094 - 1600
22"x22"	500 - 1650	1938 - 2800
22.5"x22.5"	500 - 1700	2000 - 2900
36"x24"	700 - 2650	3138 - 4600

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 1500 - Supply or return pl grille for ceiling, sidewall, or sill applications

FEATURES

- Extruded aluminum construction
- 0°, 15°, or 30° blade deflection
- 1/2" (normal) or 7/16" (pencil proof) bar spacing ¹
- 7/32" blade thickness
- Section lengths range from 6" to 72" long; units longer than 72" will consist of sections butted together

GRILLE SIZES

- Length: 6" - 999" (1/16" increments)
- Width: 2" - 24" (1/4" increments)

FRAME STYLES

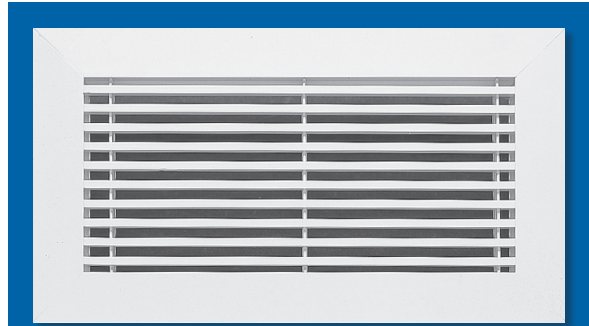
- A - 1 1/4" flange
- B - 1" flange
- C - 3/4" flange
- D - 1/2" flange
- R - 1/4" flange
- AE - 1 1/4" flange with subframe
- BE - 1" flange with subframe
- CE - 3/4" flange with subframe
- DS - 1/2" flange with subframe
- RG - 3/8" flange with subframe

COMPATIBLE OPTIONS AND ACCESSORIES

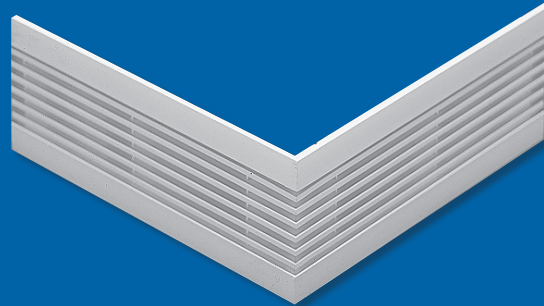
- Custom curving, available on request
- Screw holes, spring clips, or concealed mount
- Mitered corners (model 1500MC)
- Optional access door
- LOBD - Steel, linear opposed blade damper
- 5LOBD - Aluminum, linear opposed blade damper
- SBD - Steel, single blade damper
- 5SBD - Aluminum, single blade damper
- BOS - Blank-off strip
- LSG - Linear straightening grid

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ 15° deflection is only available with normal spacing. 30° deflection is only available with pencil proof spacing.



1500



CORRESPONDING MITERED CORNER, 1500MC. WO CONSTRUCTION SHOWN.

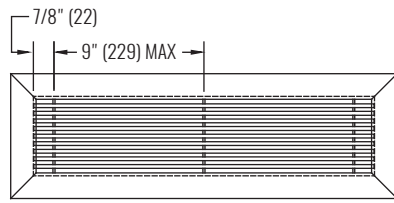


1500

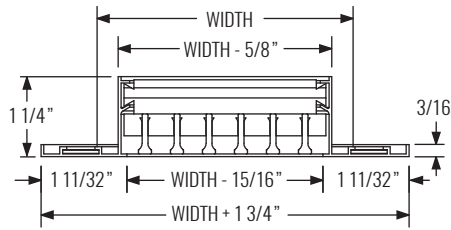
Linear Bar Grille for Ceiling, Sidewall, or Sill (7/32" Blade Thickness)



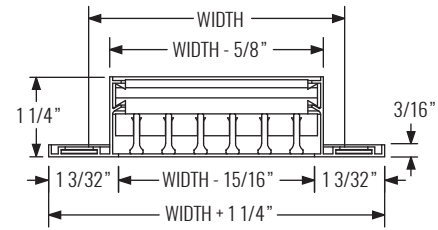
DIMENSIONAL DATA



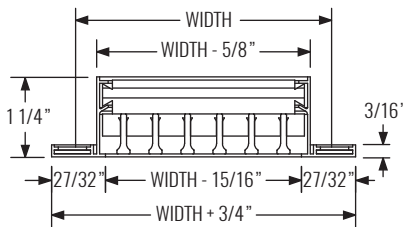
FACE VIEW



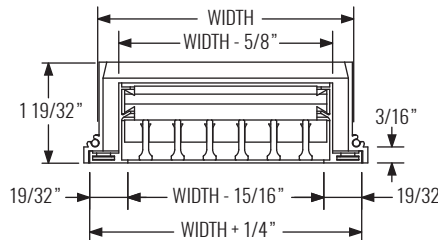
FRAME A



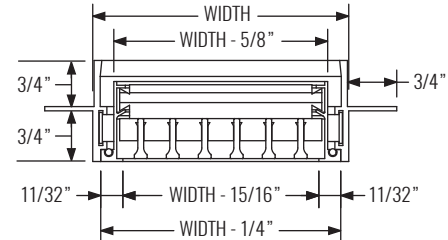
FRAME B



FRAME C



FRAME DS



FRAME RG

NOTES: Dimensions in parentheses are millimeters (mm). See website for complete 1500 grille length and width dimensional information.

PERFORMANCE DATA

SIZE	PERFORMANCE - 48" UNIT LENGTH															
	0° DEFL, 7/32" BARS, 1/2" SPACING				0° DEFL, 7/32" BARS, 7/16" SPACING				15° DEFL, 7/32" BARS, 1/2" SPACING				30° DEFL, 7/32" BARS, 7/16" SPACING			
	NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)	
WIDTH	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)
2"	40-55	18-21	70-115	24-31	40-70	18-24	85-130	27-33	40-50	18-20	60-90	22-27	40-50	18-20	60-90	22-27
3"	70-95	24-28	120-170	32-38	60-110	22-30	135-210	33-42	70-85	24-27	100-145	29-35	50-80	20-26	95-140	28-34
4"	90-150	27-35	180-240	39-45	90-160	27-36	195-265	40-47	90-110	27-30	130-210	33-42	70-120	24-32	145-195	35-40
5"	100-180	28-39	220-300	43-50	100-190	28-40	235-325	44-52	100-130	29-33	160-250	36-46	80-140	24-34	170-260	38-46
6"	120-220	30-43	270-370	47-55	110-220	28-43	275-385	48-56	120-155	31-36	190-295	40-49	90-170	24-38	210-290	42-49
7"	135-245	31-45	300-440	49-60	135-260	31-47	320-460	52-61	125-190	30-40	245-340	44-52	115-195	28-40	235-335	44-52
8"	150-270	32-47	330-510	52-65	160-300	34-50	370-510	55-65	130-230	29-44	280-380	48-56	140-220	32-43	260-380	46-56
9"	160-300	32-49	365-570	55-68	170-330	34-53	410-570	58-68	140-250	29-46	305-445	50-60	150-250	32-45	300-450	49-61
10"	175-325	33-52	400-625	58-72	180-360	34-55	450-630	61-72	150-270	29-47	330-510	52-65	160-280	33-48	340-520	53-66
12"	200-380	34-56	470-650	62-73	220-420	37-59	520-820	66-82	175-315	31-51	385-595	56-70	180-320	33-51	390-600	57-70
15"	245-470	37-62	570-855	69-84	240-500	36-64	640-900	72-87	225-395	35-58	480-690	63-76	210-395	34-57	490-670	63-74
22"	450-725	55-77	850-1200	84-100	335-715	42-77	900-1275	86-103	425-540	54-67	655-1000	74-91	275-540	37-67	670-940	75-88

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). Throw measured at same angle of bar deflection with 0° being perpendicular to the grille face. NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- 1800 - Supply or return linear bar grille with lay-in, removable core for floor applications

FEATURES

- Extruded aluminum construction
- 0°, 15°, or 30° blade deflection
- 1/2" (normal) or 7/16" (pencil proof) bar spacing ¹
- 7/32" blade thickness
- Removable core
- Section lengths range from 6" to 72" long; units longer than 72" will consist of sections butted together

GRILLE SIZES

- Length: 6" - 999" (1/16" increments)
- Width: 2" - 12" (1/4" increments)

FRAME STYLES

- H - 1 1/4" curved flange
- M - 1" flange
- N - 3/16" flange ²

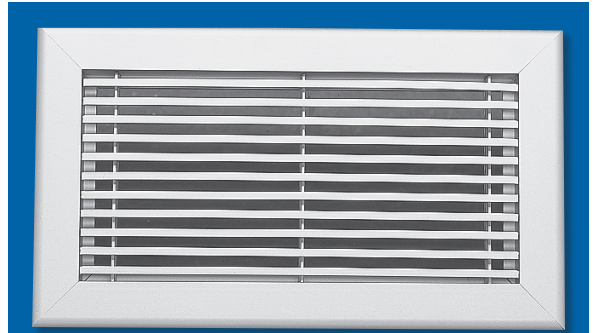
COMPATIBLE OPTIONS AND ACCESSORIES

- Custom curving, available on request
- Screw holes or spring clip fastening
- Core clips or snap clips
- Mitered corners (model 1800MC)
- LOBD - steel linear opposed blade damper
- 5LOBD - aluminum linear opposed blade damper
- SBD - steel single blade damper
- 5SBD - aluminum single blade damper
- BOS - Blank-off strip
- LSG - Linear straightening grid

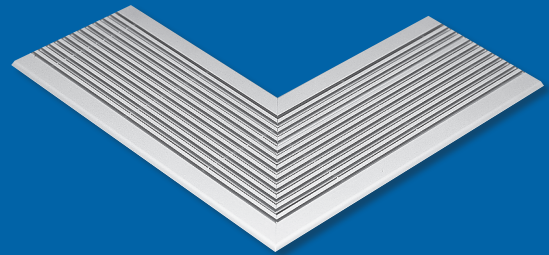
NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ 15° deflection is only available with normal spacing. 30° deflection is only available with pencil proof spacing.

² Fastening methods not available with Frame N.



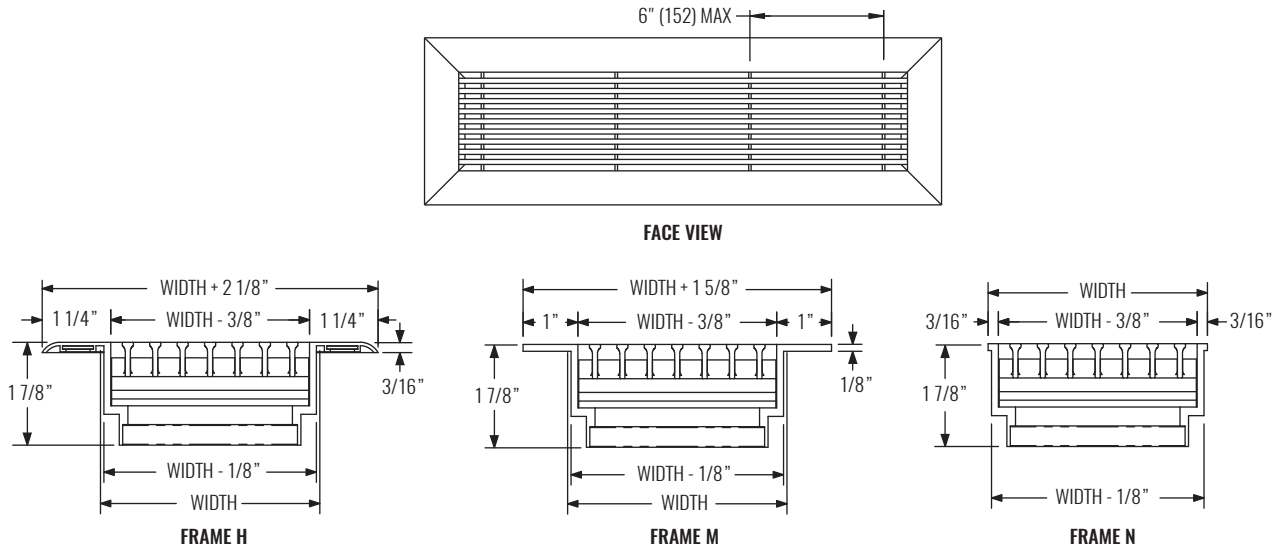
1800



CORRESPONDING MITERED CORNER, 1800MC. CO CONSTRUCTION SHOWN.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Nominal duct equals ordered size. See website for complete 1800 grille length and width dimensional information. Suggested floor opening for spring clip fastening is nominal width + 1/4". Suggested floor opening for all other fastening is nominal duct + 1/16". Frame N intended to be installed flush with floor and supported from below by others.

PERFORMANCE DATA

SIZE	PERFORMANCE - 48" UNIT LENGTH															
	0° DEFL, 7/32" BARS, 1/2" SPACING				0° DEFL, 7/32" BARS, 7/16" SPACING				15° DEFL, 7/32" BARS, 1/2" SPACING				30° DEFL, 7/32" BARS, 7/16" SPACING			
	NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)	
WIDTH	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)
2"	40-55	18-21	70-115	24-31	40-70	18-24	85-130	27-33	40-50	18-20	60-90	22-27	40-50	18-20	60-90	22-27
3"	70-95	24-28	120-170	32-38	60-110	22-30	135-210	33-42	70-85	24-27	100-145	29-35	50-80	20-26	95-140	28-34
4"	90-150	27-35	180-240	39-45	90-160	27-36	195-265	40-47	90-110	27-30	130-210	33-42	70-120	24-32	145-195	35-40
5"	100-180	28-39	220-300	43-50	100-190	28-40	235-325	44-52	100-130	29-33	160-250	36-46	80-140	24-34	170-260	38-46
6"	120-220	30-43	270-370	47-55	110-220	28-43	275-385	48-56	120-155	31-36	190-295	40-49	90-170	24-38	210-290	42-49
7"	135-245	31-45	300-440	49-60	135-260	31-47	320-460	52-61	125-190	30-40	245-340	44-52	115-195	28-40	235-335	44-52
8"	150-270	32-47	330-510	52-65	160-300	34-50	370-510	55-65	130-230	29-44	280-380	48-56	140-220	32-43	260-380	46-56
9"	160-300	32-49	365-570	55-68	170-330	34-53	410-570	58-68	140-250	29-46	305-445	50-60	150-250	32-45	300-450	49-61
10"	175-325	33-52	400-625	58-72	180-360	34-55	450-630	61-72	150-270	29-47	330-510	52-65	160-280	33-48	340-520	53-66
12"	200-380	34-56	470-650	62-73	220-420	37-59	520-820	66-82	175-315	31-51	385-595	56-70	180-320	33-51	390-600	57-70

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). Throw measured at same angle of bar deflection with 0° being perpendicular to the grille face. NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 1600 - Supply or return linear bar grille for ceiling, sidewall, or sill applications

FEATURES

- Extruded aluminum construction
- 0° or 15° blade deflection
- 1/4" (normal) or 1/2" (every other) bar spacing ¹
- 1/8" blade thickness
- Section lengths range from 6" to 72" long; units longer than 72" will consist of sections butted together

GRILLE SIZES

- Length: 6" - 999" (1/16" increments)
- Width: 2" - 24" (1/4" increments)

FRAME STYLES

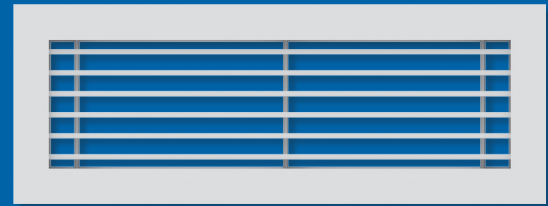
- A - 1 1/4" flange
- B - 1" flange
- C - 3/4" flange
- D - 1/2" flange
- R - 1/4" flange
- AE - 1 1/4" flange with subframe
- BE - 1" flange with subframe
- CE - 3/4" flange with subframe
- DS - 1/2" flange with subframe
- RG - 3/8" flange with subframe

COMPATIBLE OPTIONS AND ACCESSORIES

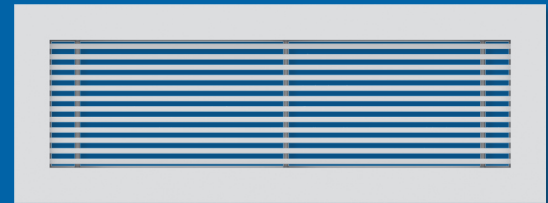
- Custom curving, available on request
- Access door
- Screw holes, spring clips, or concealed mount
- Mitered corners (model 1600MC)
- LOBD - Steel, linear opposed blade damper
- 5LOBD - Aluminum, linear opposed blade damper
- SBD - Steel, single blade damper
- 5SBD - Aluminum, single blade damper
- BOS - Blank-off strip
- LSG - Linear straightening grid

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

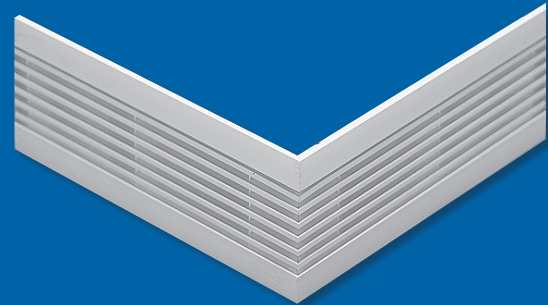
¹ Normal spacing not available with concealed fastening.



1600 E



1600 N



CORRESPONDING MITERED CORNER, 1600MC. WO CONSTRUCTION SHOWN.

WEB SEARCH: 1600

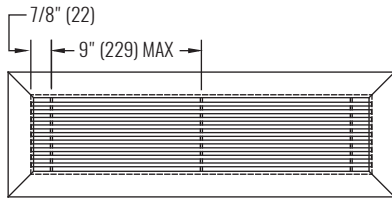


1600

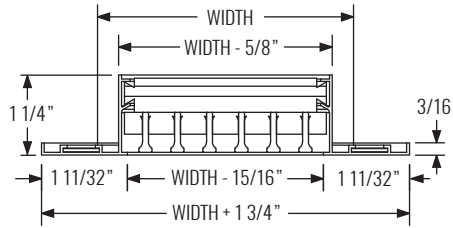
Linear Bar Grille for Ceiling, Sidewall, or Sill (1/8" Blade Thickness)



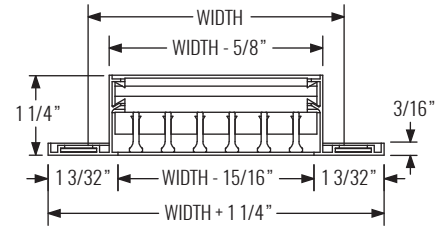
DIMENSIONAL DATA



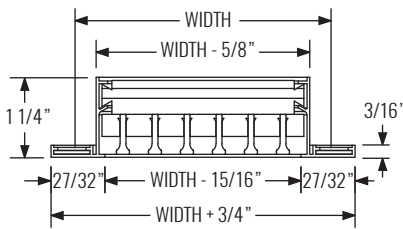
FACE VIEW



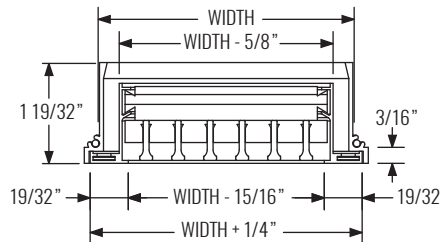
FRAME A



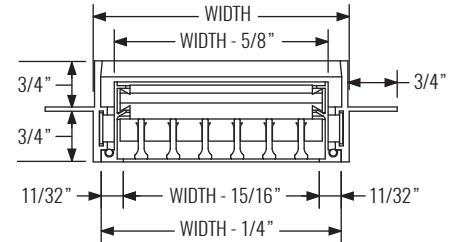
FRAME B



FRAME C



FRAME DS



FRAME RG

NOTES: Dimensions in parentheses are millimeters (mm). See website for complete 1600 grille length and width dimensional information.

PERFORMANCE DATA

SIZE	PERFORMANCE - 48" UNIT LENGTH															
	0° DEFL, 1/8" BARS, 1/4" SPACING				0° DEFL, 1/8" BARS, 1/2" SPACING				15° DEFL, 1/8" BARS, 1/4" SPACING				15° DEFL, 1/8" BARS, 1/2" SPACING			
	NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)	
	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)
2"	20-60	11-22	80-100	26-29	40-80	18-26	100-140	29-34	30-50	16-20	60-90	22-27	40-70	18-24	85-115	27-31
3"	60-100	22-29	120-180	32-39	60-140	22-34	180-220	39-43	40-80	16-26	100-140	29-34	80-120	26-32	140-200	34-41
4"	70-130	24-32	160-250	36-46	100-190	29-40	235-325	44-52	50-110	17-30	140-200	34-41	100-160	29-36	190-280	40-48
5"	130-190	33-40	220-310	43-51	140-240	34-45	290-390	49-57	60-140	18-34	180-260	39-46	120-200	32-41	240-320	45-51
6"	140-220	34-43	260-380	46-56	150-270	35-47	330-510	52-65	80-160	22-36	200-320	41-51	140-240	34-45	290-390	49-57
7"	170-250	37-46	305-440	50-60	175-315	38-51	385-555	56-67	90-190	22-39	240-360	44-54	170-280	37-48	335-445	52-60
8"	200-300	41-50	350-500	54-64	200-360	41-55	440-600	60-70	100-220	23-43	280-400	48-58	200-320	41-51	380-500	56-64
9"	200-325	41-52	385-535	56-66	250-380	45-56	470-700	62-75	120-250	26-45	315-445	51-61	210-350	41-54	420-560	59-68
10"	200-350	41-54	425-575	59-69	300-400	50-58	500-800	64-81	140-280	29-48	350-490	54-64	220-380	42-56	460-620	62-72
12"	220-380	40-56	460-700	62-76	350-550	54-67	650-950	73-89	180-320	34-51	390-600	57-70	250-430	44-60	520-790	66-81
15"	310-500	51-64	590-875	68-83	450-590	61-69	730-1150	77-97	200-420	34-59	530-750	66-78	325-550	50-67	660-935	73-88
22"	375-650	50-73	785-1200	80-100	750-915	78-87	1080-1575	94-114	260-530	36-66	665-1005	74-91	550-695	67-76	840-1275	83-103

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). Throw measured at same angle of bar deflection with 0° being perpendicular to the grille face. NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- 1850 - Supply or return linear bar grille with lay-in, removable core for floor applications

FEATURES

- Extruded aluminum construction
- 0° or 15° blade deflection
- 1/4" (normal) or 1/2" (every other) bar spacing
- 1/8" blade thickness
- Removable core
- Section lengths range from 6" to 72" long; units longer than 72" will consist of sections butted together.

GRILLE SIZES

- Length: 6" - 999" (1/16" increments)
- Width: 2" - 24" (1/4" increments)

FRAME STYLES

- H - 1 1/4" curved flange
- M - 1" flange
- N - 3/16" flange ¹

COMPATIBLE OPTIONS AND ACCESSORIES

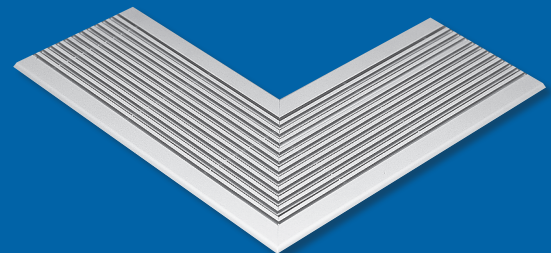
- Custom curving, available on request
- Screw holes or spring clips
- Mitered corners (model 1850MC)
- Core clips or snap clips
- LOBD - Steel, linear opposed blade damper
- 5LOBD - Aluminum, linear opposed blade damper
- SBD - Steel, single blade damper
- 5SBD - Aluminum, single blade damper
- LSG - Linear straightening grid
- BOS - Blank-off strip

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

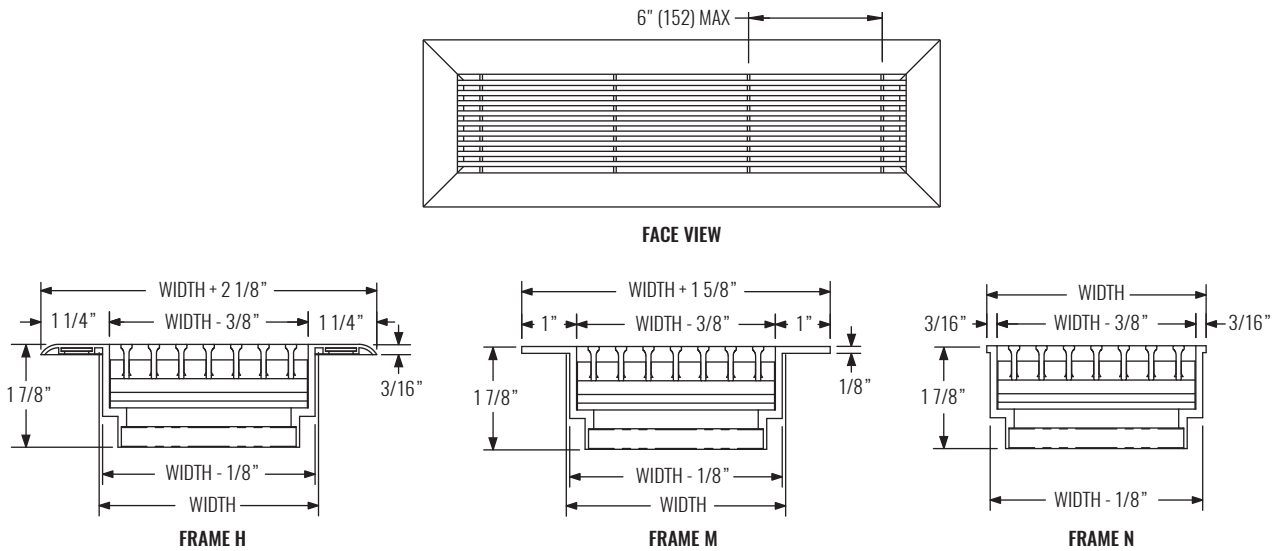
¹ Fastening methods not available with Frame N.



1850

CORRESPONDING MITERED CORNER, 1850MC.
CO CONSTRUCTION SHOWN.

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Nominal duct equals ordered size. See website for complete 1850 grille length and width dimensional information. Suggested floor opening for spring clip fastening is nominal width + 1/4". Suggested floor opening for all other fastening is nominal duct + 1/16". Frame N intended to be installed flush with floor and supported from below by others.

PERFORMANCE DATA

SIZE	PERFORMANCE - 48" UNIT LENGTH															
	0° DEFL, 1/8" BARS, 1/4" SPACING				0° DEFL, 1/8" BARS, 1/2" SPACING				15° DEFL, 1/8" BARS, 1/4" SPACING				15° DEFL, 1/8" BARS, 1/2" SPACING			
	NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)	
	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)	CFM/ft	THROW (ft)
2"	20-60	11-22	80-100	26-29	40-80	18-26	100-140	29-34	30-50	16-20	60-90	22-27	40-70	18-24	85-115	27-31
3"	60-100	22-29	120-180	32-39	60-140	22-34	180-220	39-43	40-80	16-26	100-140	29-34	80-120	26-32	140-200	34-41
4"	70-130	24-32	160-250	36-46	100-190	29-40	235-325	44-52	50-110	17-30	140-200	34-41	100-160	29-36	190-280	40-48
5"	130-190	33-40	220-310	43-51	140-240	34-45	290-390	49-57	60-140	18-34	180-260	39-46	120-200	32-41	240-320	45-51
6"	140-220	34-43	260-380	46-56	150-270	35-47	330-510	52-65	80-160	22-36	200-320	41-51	140-240	34-45	290-390	49-57
7"	170-250	37-46	305-440	50-60	175-315	38-51	385-555	56-67	90-190	22-39	240-360	44-54	170-280	37-48	335-445	52-60
8"	200-300	41-50	350-500	54-64	200-360	41-55	440-600	60-70	100-220	23-43	280-400	48-58	200-320	41-51	380-500	56-64
9"	200-325	41-52	385-535	56-66	250-380	45-56	470-700	52-75	120-250	26-45	315-445	51-61	210-350	41-54	420-560	59-68
10"	200-350	41-54	425-575	59-69	300-400	50-58	500-800	64-81	140-280	29-48	350-490	54-64	220-380	42-56	460-620	62-72
12"	220-380	40-56	460-700	62-76	350-550	54-67	650-950	73-89	180-320	34-51	390-600	57-70	250-430	44-60	520-790	66-81

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). Throw measured at same angle of bar deflection with 0° being perpendicular to the grille face. NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 1700 - Linear louvered grille

FEATURES

- Available with 1-way or 2-way deflection
- Extruded aluminum construction
- Removable core
- Section lengths range from 6" to 72" long; units longer than 72" will consist of sections butted together

GRILLE SIZES

- Length: 6" - 999" (1/16" increments)
- Width: 3 1/2" - 12 1/2" (3/4" increments, 1-way configuration)
- Width: 6 1/4" - 12 1/4" (1 1/2" increments, 2-way configuration)

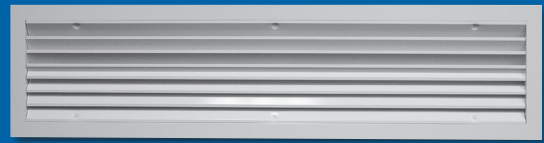
FRAME STYLES

- LA - 1" flange
- LB - 1/2" flange

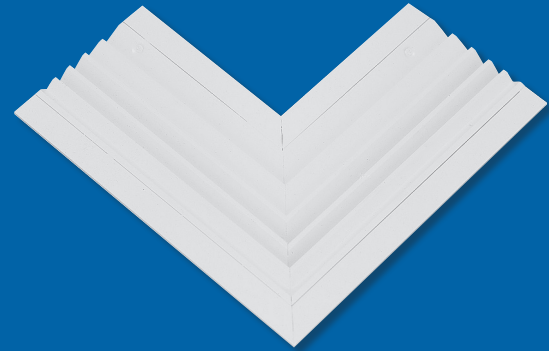
COMPATIBLE OPTIONS AND ACCESSORIES

- Mitered corners (model 1700MC)
- LOBD - Steel, linear opposed blade damper
- 5LOBD - Aluminum, linear opposed blade damper
- LSG - Linear straightening grid
- BOS - Blank-off strip

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.



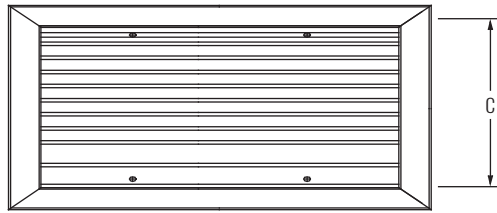
1700



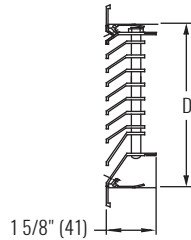
CORRESPONDING MITERED CORNER, 1700MC. CI CONSTRUCTION SHOWN.



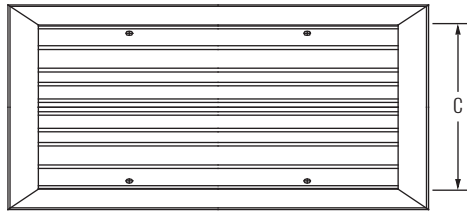
DIMENSIONAL DATA



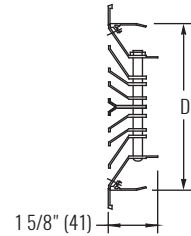
FACE VIEW, 1-WAY THROW



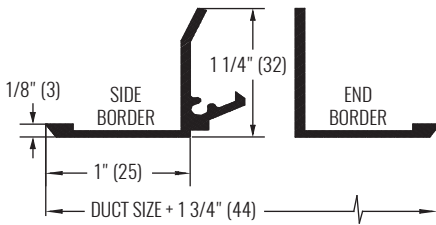
FACE VIEW, 1-WAY THROW



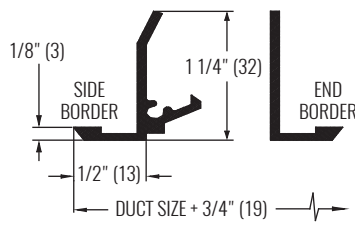
FACE VIEW, 2-WAY THROW



FACE VIEW, 2-WAY THROW



FRAME LA



FRAME LB

NOTES: Dimensions in parentheses are millimeters (mm).

1-WAY THROW DIMENSIONS

NOMINAL	DUCT D	C
3 1/2" (89)	3 5/8" (92)	3 3/8" (86)
4 1/4" (108)	4 3/8" (111)	4 1/8" (105)
5" (127)	5 1/8" (130)	4 7/8" (124)
5 3/4" (146)	5 7/8" (149)	5 5/8" (143)
6 1/2" (165)	6 5/8" (168)	6 3/8" (162)
7 1/4" (184)	7 3/8" (187)	7 1/8" (181)
8" (203)	8 1/8" (206)	7 7/8" (200)
8 3/4" (222)	8 7/8" (225)	8 5/8" (219)
9 1/2" (241)	9 5/8" (244)	9 3/8" (238)
10 1/4" (260)	10 3/8" (264)	10 1/8" (257)
11" (279)	11 1/8" (283)	10 7/8" (276)
11 3/4" (298)	11 7/8" (302)	11 5/8" (295)
12 1/2" (318)	12 5/8" (321)	12 3/8" (314)

2-WAY THROW DIMENSIONS

NOMINAL	DUCT D	C
6 1/4" (159)	6 3/8" (162)	6 1/8" (155)
7 3/4" (197)	7 7/8" (200)	7 5/8" (194)
9 1/4" (235)	9 3/8" (238)	9 1/8" (232)
10 3/4" (273)	10 7/8" (276)	10 5/8" (270)
12 1/4" (311)	12 3/8" (314)	12 1/8" (308)

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL, 1-WAY THROW, 48" UNIT LENGTH			
	NC (< 25)		NC (25 - 40)	
	CFM/ft	THROW	CFM/ft	THROW
3.5"	10 - 30	8 - 17	40 - 60	20 - 24
4.25"	20 - 40	12 - 20	50 - 70	22 - 26
5"	35 - 55	18 - 23	65 - 95	25 - 30
5.75"	35 - 65	16 - 25	80 - 110	28 - 33
6.5"	40 - 80	16 - 28	100 - 140	31 - 37
8"	50 - 100	17 - 31	125 - 175	35 - 41
9.5"	60 - 120	19 - 34	150 - 240	38 - 48
11.75"	80 - 160	22 - 39	200 - 320	44 - 56

SIZE	PERFORMANCE - HORIZONTAL, 2-WAY THROW, 48" UNIT LENGTH			
	NC (< 25)		NC (25 - 40)	
	CFM/ft	THROW	CFM/ft	THROW
6.25"	20 - 50	8 - 15	65 - 95	17 - 21
7.75"	30 - 70	9 - 18	90 - 130	20 - 24
9.25"	40 - 90	10 - 20	115 - 165	23 - 27
10.75"	50 - 110	12 - 22	140 - 200	25 - 30
12.25"	60 - 130	13 - 24	165 - 235	27 - 33

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Drawings and performance data shown are abbreviated. Throw values are given for isothermal conditions and terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. See website for complete information.

MODEL

- 1500MC - Aluminum mitered corner for model 1500
- 1600MC - Aluminum mitered corner for model 1600
- 1800MC - Aluminum mitered corner for model 1800
- 1850MC - Aluminum mitered corner for model 1850
- 1700MC - Aluminum mitered corner for model 1700

FEATURES

- 90° or 135° included angle ¹
- Choice of inward, outward, or 0° deflection
- Choice of flat face angle or inside or outside corner angle
- 1700MC available in 1-way and 2-way deflection
- Bar/louver configuration to match straight linear sections
- Butt cut ends to line up with butt cut straight linear sections for continuous look

GRILLE SIZES

- Length: 12" or 18" nominal leg length based on width
- Available in widths to match straight linear section

FRAME STYLES

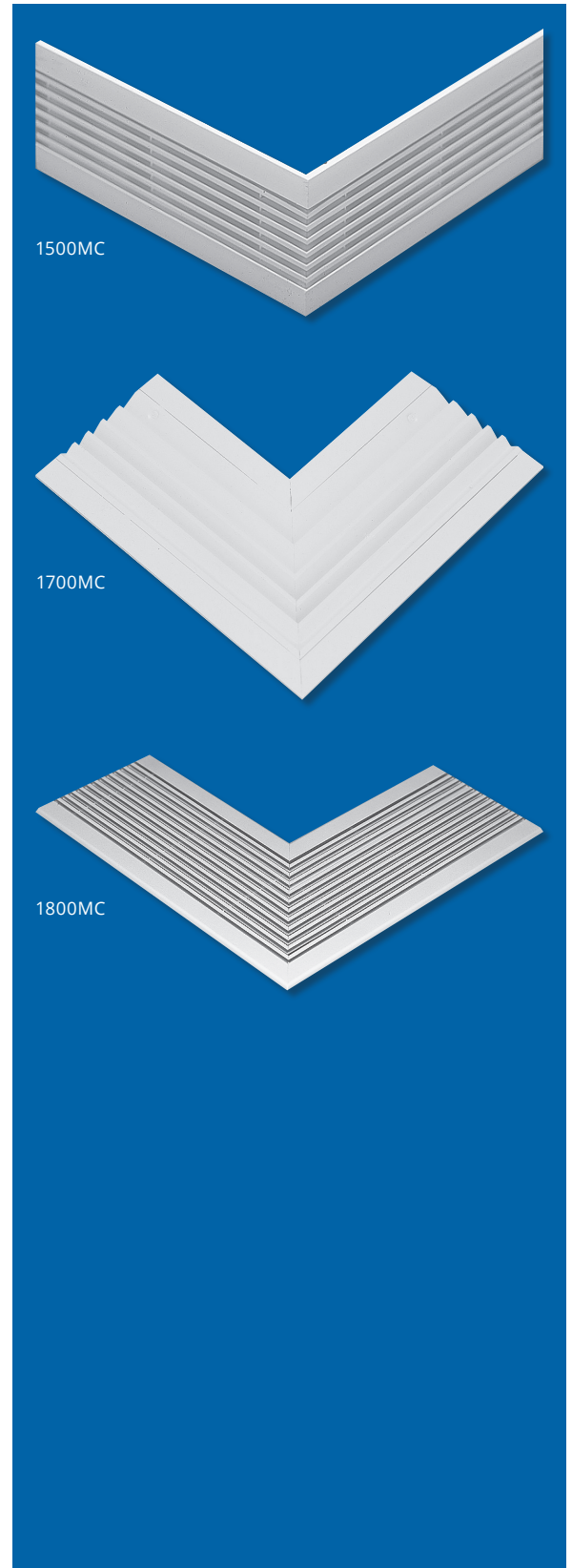
- Available in frames styles to match straight linear sections

COMPATIBLE OPTIONS AND ACCESSORIES

- Spring clip, screw hole, or concealed mounting

NOTES: Not all options available with all configurations or one another. See website for complete compatibility.

¹ Custom angles available upon request.



WEB SEARCH: MITER

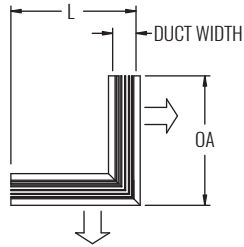


MITERED CORNERS

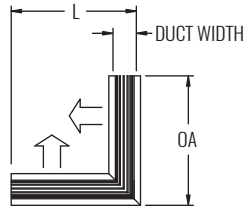
Linear Bar Grilles, Corresponding Mitered Corner Models



DIMENSIONAL DATA



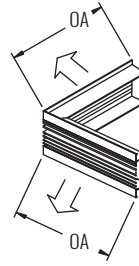
OUTWARD DEFLECTION 'CO'



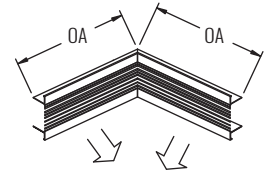
INWARD DEFLECTION 'CI'

90° MITER ANGLE - 01

1800MC, 1850MC - FLOOR OR SILL APPLICATION
1500MC, 1600MC - CEILING OR SILL APPLICATION
[OPTION "S" PROVIDES 0° BLADE DEFLECTION]



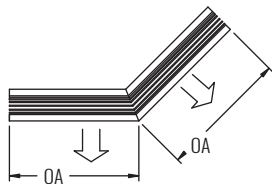
OUTWARD DEFLECTION 'WO'



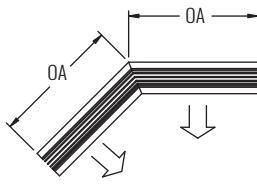
INWARD DEFLECTION 'WI'

90° MITER ANGLE - 01

1500MC, 1600MC - SIDEWALL APPLICATION
[NOT AVAILABLE WITH 1800MC, 1850MC]



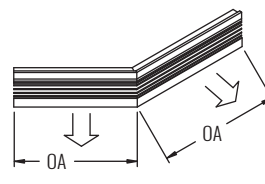
OUTWARD DEFLECTION 'CO'



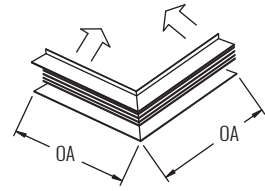
INWARD DEFLECTION 'CI'

135° MITER ANGLE - 02

1800MC, 1850MC - FLOOR OR SILL APPLICATION
1500MC, 1600MC - CEILING OR SILL APPLICATION
[OPTION "S" PROVIDES 0° BLADE DEFLECTION]



OUTWARD DEFLECTION 'WO'



INWARD DEFLECTION 'WI'

135° MITER ANGLE - 02

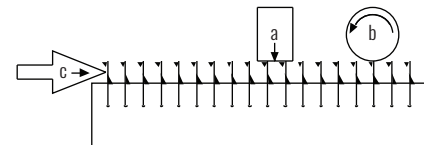
1500MC, 1600MC - SIDEWALL APPLICATION
[NOT AVAILABLE WITH 1800MC, 1850MC]

OVERALL DIMENSIONS BY FRAMESTYLE

DUCT WIDTH	DUCT L	1500/1600 FRAMES							1800/1850 FRAMES			1700 FRAMES	
		A	B	C	D	R	DS	RG	H	M	N	LA	LB
2" - 4" (OTHERS) ¹	12"	12 7/8"	12 5/8"	12 3/8"	12 1/8"	11 7/8"	12 3/16"	12"	12 7/8"	12 13/16"	12"	13"	12 3/4"
3 1/2" (MODEL 1700MC)	(305)	(327)	(321)	(314)	(308)	(302)	(310)	(305)	(327)	(325)	(305)	(330)	(224)
4 1/2" - 12" (OTHERS) ¹	18"	18 7/8"	18 5/8"	18 3/8"	18 1/8"	17 7/8"	18 3/16"	18"	18 7/8"	18 13/16"	18"	19"	18 3/4"
1/4" - 12 1/2" (MODEL 1700MC)	(457)	(479)	(473)	(467)	(460)	(454)	(462)	(457)	(479)	(478)	(457)	(483)	(476)

MAXIMUM FLOOR LOADING

MODEL	BLADE	SPACING	MAX VERTICAL DISTRIBUTED LOAD (a)	MAX VERTICAL LIVE LOAD (b)	MAX HORIZONTAL LOAD (c)
			lbs/in ²	lbs/ft ²	lbs
1800 NORMAL	7/32" (6)	1/2" (13)	250	250	50
1800 PENCIL PROOF	7/32" (6)	7/16" (11)	250	250	50



FLOOR LOADING ILLUSTRATION
REFER TO TABLE (LEFT)

SEE PREVIOUS PAGES FOR PERFORMANCE INFORMATION

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm).

¹ "Others" include 1500MC, 1600MC, 1800MC, and 1850MC models. See corresponding straight models on previous pages for related performance data.

MODEL

- 1310 - Maximum security steel grille with 3/16" thick, 46% free area, perforated face with 5/16" holes on 7/16" staggered centers

FEATURES

- 3/16" thick steel stitch welded sleeve
- Suitable for supply or return applications

GRILLE SIZE

- Width: 6" - 30" (2" increments), 9" ¹
- Height: 4" - 30" (2" increments), 9" ¹
- Sleeve Length: 6" - 18" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

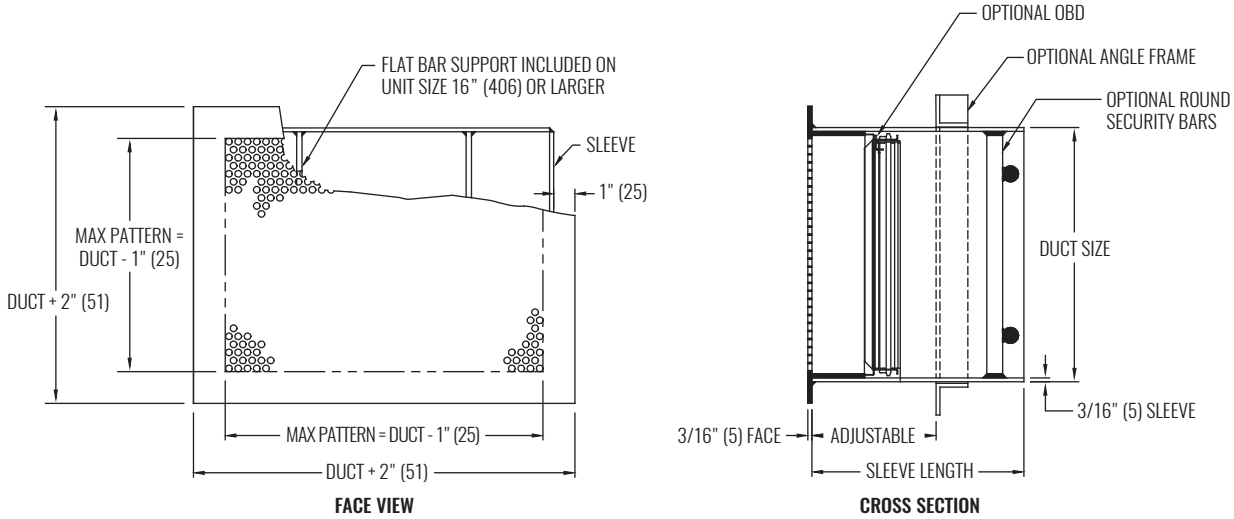
- Steel angle frame shipped loose and unpainted, constructed of 1 1/2"x1 1/2"x3/16" angle ²
- Steel security bars on 6" centers, constructed of 3/4" diameter bars welded in sleeve
- Steel anchor bars, constructed of 3"x3/4" diameter bars
- Two loose steel angles shipped loose and unpainted, constructed of 1 1/2"x1 1/2"x3/16" angle ²
- Front or rear operated OBD ³

NOTES:

- ¹ If selecting 9" width, height must also be 9".
- ² Steel angle frame is not compatible with the two loose angles.
- ³ Damper welded in sleeve.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Recommended opening = duct size + 1/2". Optional angle frame or loose angles to be field welded for mounting.

PERFORMANCE DATA

SIZE	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
NOMINAL	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	25 - 100	5 - 16	125 - 200	17 - 22
8"x6"	33 - 133	6 - 18	167 - 233	20 - 25
8"x8"	44 - 178	6 - 21	222 - 311	23 - 29
8"x10"	56 - 222	7 - 23	278 - 389	26 - 31
9"x9"	56 - 225	7 - 23	281 - 394	26 - 31
10"x6"	50 - 185	2 - 6	190 - 300	7 - 8
10"x10"	69 - 278	8 - 26	347 - 486	29 - 34
12"x6"	50 - 200	2 - 7	225 - 350	7 - 9
12"x12"	100 - 400	10 - 31	500 - 600	35 - 38
16"x16"	178 - 533	13 - 36	711 - 1067	41 - 51
22"x10"	200 - 575	5 - 11	600 - 950	12 - 15
22"x22"	336 - 1008	18 - 49	1176 - 1681	53 - 64

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 51310 - Medium security aluminum grille with 1/8" thick, 46% free area, perforated face with 5/16" holes on 7/16" staggered centers

FEATURES

- 1/8" thick aluminum stitch welded sleeve
- All welded construction
- Suitable for supply or return applications

GRILLE SIZE

- Width: 6" - 30" (2" increments), 9" ¹
- Height: 4" - 30" (2" increments), 9" ¹
- Sleeve Length: 6" - 18" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

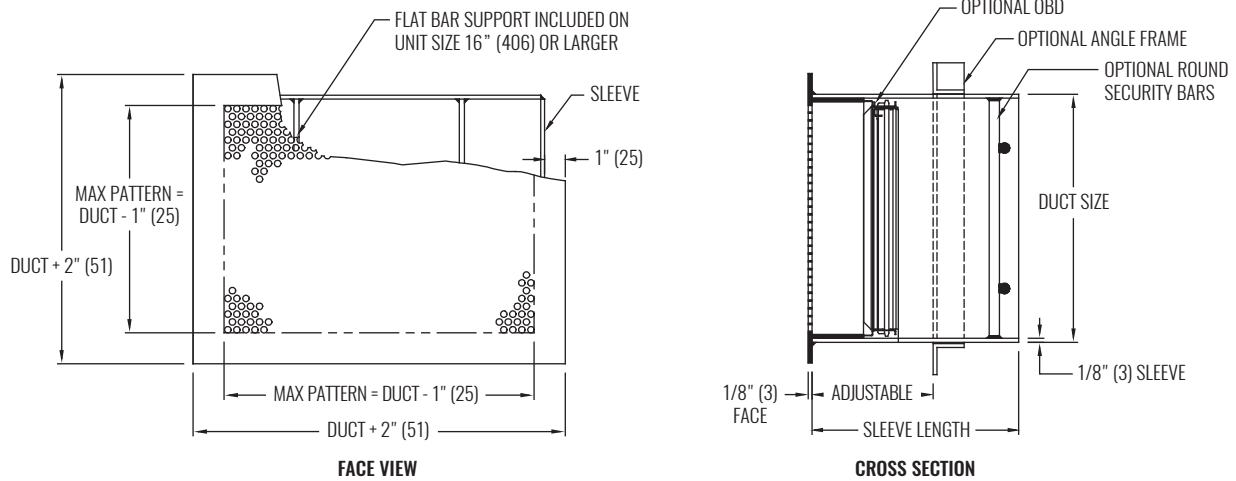
- Aluminum angle frame shipped loose and unpainted, constructed of 1 1/2"x1 1/2"x1/8" angle ²
- Aluminum security bars on 6" centers, constructed of 1/2" diameter bars welded in sleeve
- Aluminum anchor bars, constructed of 3"x1/2" diameter bars
- Two loose aluminum angles shipped loose and unpainted, constructed of 1 1/2"x1 1/2"x1/8" angle ²
- Front or rear operated OBD ³

NOTES:

- ¹ If selecting 9" width, height must also be 9".
- ² Steel angle frame is not compatible with the two loose angles.
- ³ Damper welded in sleeve.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Recommended opening = duct size + 1/2". Optional angle frame or loose angles to be field welded for mounting.

PERFORMANCE DATA

SIZE NOMINAL	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	25 - 100	5 - 16	125 - 200	17 - 22
8"x6"	33 - 133	6 - 18	167 - 233	20 - 25
8"x8"	44 - 178	6 - 21	222 - 311	23 - 29
8"x10"	56 - 222	7 - 23	278 - 389	26 - 31
9"x9"	56 - 225	7 - 23	281 - 394	26 - 31
10"x6"	50 - 185	2 - 6	190 - 300	7 - 8
10"x10"	69 - 278	8 - 26	347 - 486	29 - 34
12"x6"	50 - 200	2 - 7	225 - 350	7 - 9
12"x12"	100 - 400	10 - 31	500 - 600	35 - 38
16"x16"	178 - 533	13 - 36	711 - 1067	41 - 51
22"x10"	200 - 575	5 - 11	600 - 950	12 - 15
22"x22"	336 - 1008	18 - 49	1176 - 1681	53 - 64

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 1310TF - Maximum security steel transfer grille with two 3/16" thick, 46% free area, perforated faces with 5/16" holes on 7/16" staggered centers (one on each end)

FEATURES

- 3/16" thick steel stitch welded sleeve

GRILLE SIZE

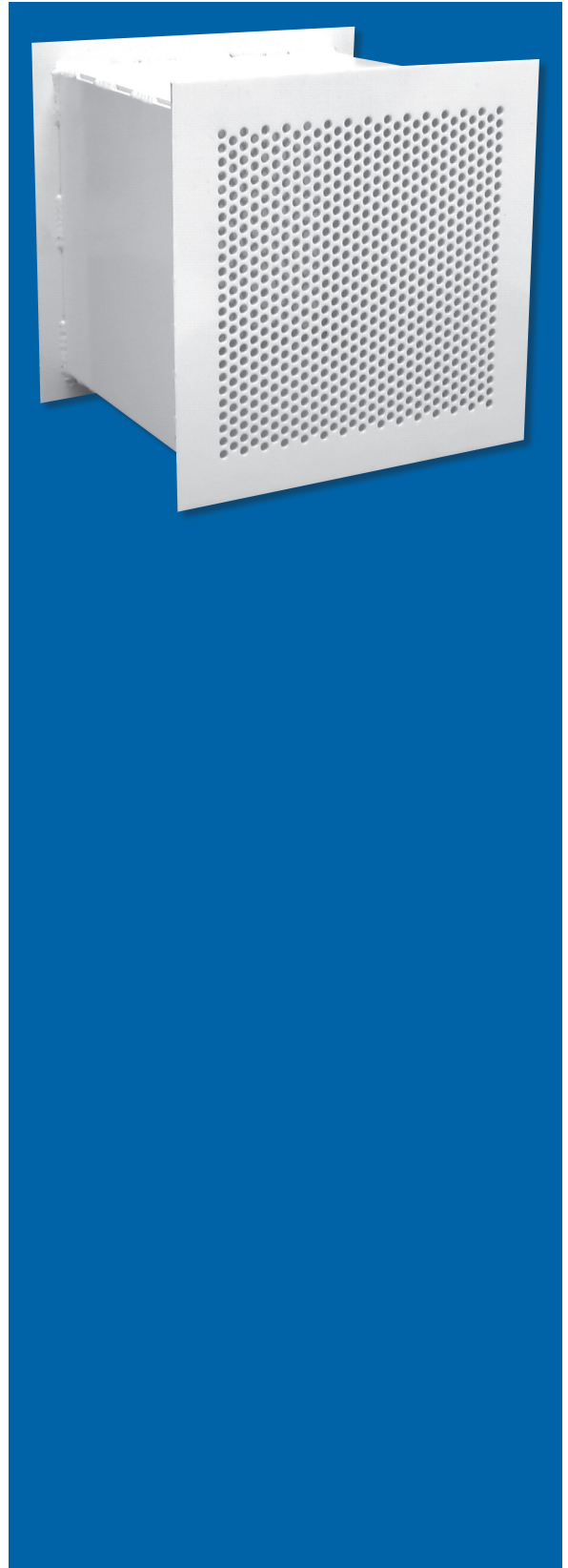
- Width: 6" - 30" (2" increments), 9" ¹
- Height: 4" - 30" (2" increments), 9" ¹
- Sleeve Length: 6" - 18" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- Steel security bars on 6" centers, constructed of 3/4" diameter bars welded in sleeve
- Steel anchor bars, constructed of 3"x3/4" diameter bars

NOTES: Wall will be constructed around grille or backfill.

¹ If selecting 9" width, height must also be 9".

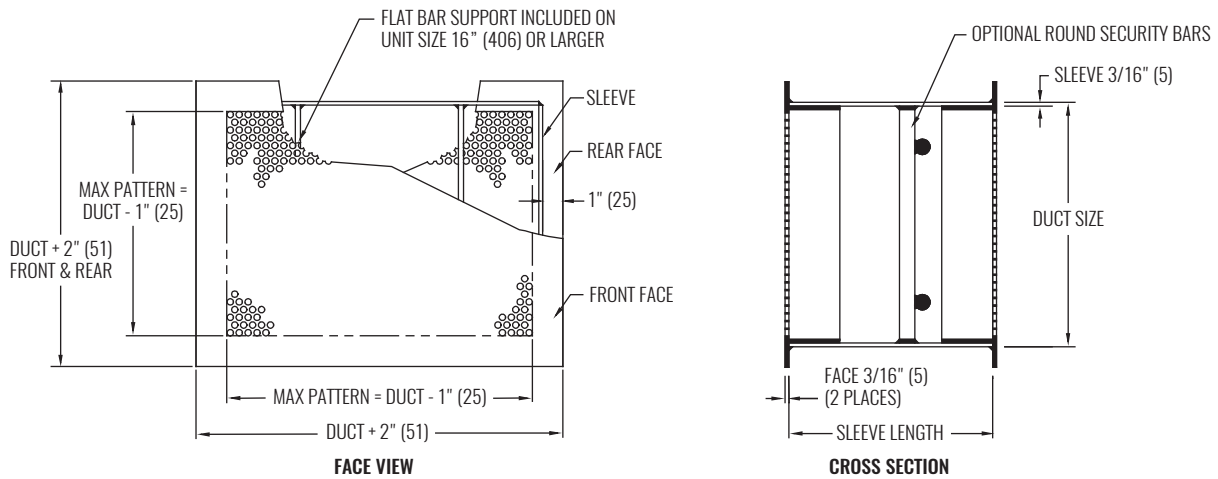


1310TF

Perforated Transfer Security Grille



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Recommended opening = duct size + 1/2". Optional angle frame or loose angles to be field welded for mounting.

PERFORMANCE DATA

SIZE	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
NOMINAL	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	25 - 100	5 - 16	125 - 200	17 - 22
8"x6"	33 - 133	6 - 18	167 - 233	20 - 25
8"x8"	44 - 178	6 - 21	222 - 311	23 - 29
8"x10"	56 - 222	7 - 23	278 - 389	26 - 31
9"x9"	56 - 225	7 - 23	281 - 394	26 - 31
10"x6"	50 - 185	2 - 6	190 - 300	7 - 8
10"x10"	69 - 278	8 - 26	347 - 486	29 - 34
12"x6"	50 - 200	2 - 7	225 - 350	7 - 9
12"x12"	100 - 400	10 - 31	500 - 600	35 - 38
16"x16"	178 - 533	13 - 36	711 - 1067	41 - 51
22"x10"	200 - 575	5 - 11	600 - 950	12 - 15
22"x22"	336 - 1008	18 - 49	1176 - 1681	53 - 64

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 13SD - Steel, anti-ligature security grille

FEATURES

- Anti-ligature construction
- 3/16" thick steel stitch welded sleeve
- 3/16" thick perforated face
- 3/16" holes on 9/32" staggered centers for 40% free area
- Excellent solution for maximum security applications
- Suitable for supply and return applications

GRILLE SIZE

- Width: 6" - 30" (2" increments), 9" ¹
- Height: 4" - 30" (2" increments), 9" ¹
- Sleeve Length: 6" - 18" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

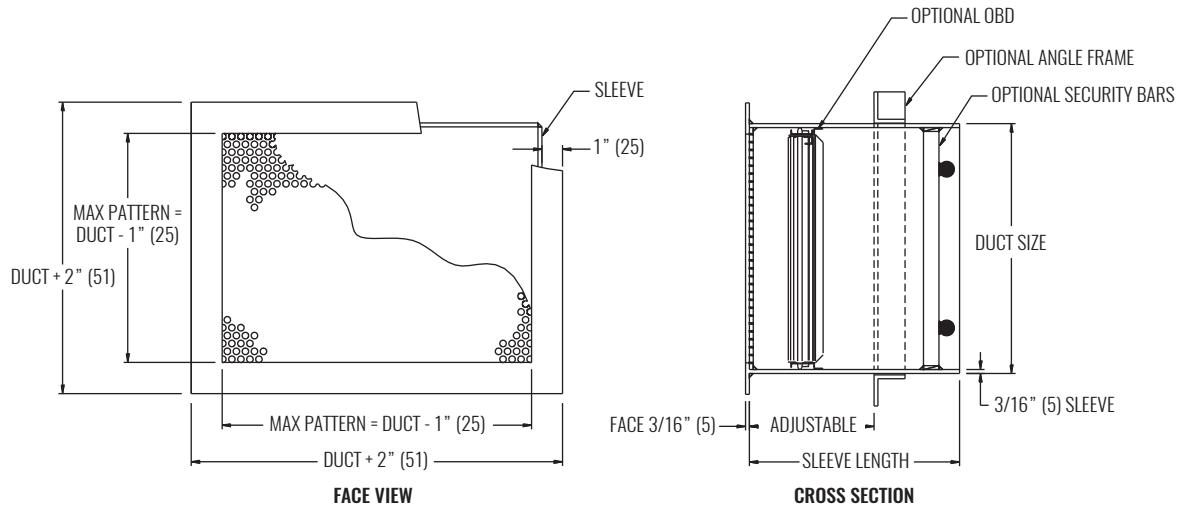
- Unpainted steel angle frame shipped loose for field installation, constructed of 1 1/2"x1 1/2"x3/16" angle ²
- Steel 3/4" diameter security bars on 6" centers welded in sleeve
- Steel 3"x3/4" diameter anchor bars
- Two unpainted loose steel angles shipped loose for field installation; constructed of 1 1/2"x1 1/2"x3/16" angle ²
- Rear operated OBD ³

NOTES:

- ¹ If selecting 9" width, height must also be 9".
- ² Steel angle frame is not compatible with the two loose angles.
- ³ Damper welded in sleeve.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Recommended opening = duct size + 1/2". Optional angle frame or loose angles to be field welded for mounting.

PERFORMANCE DATA

SIZE NOMINAL	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	25 - 100	5 - 16	125 - 175	17 - 21
8"x8"	44 - 178	6 - 21	222 - 267	23 - 25
9"x9"	56 - 169	7 - 20	225 - 338	23 - 29
10"x10"	69 - 208	8 - 22	278 - 417	26 - 32
12"x10"	100 - 300	10 - 27	350 - 500	29 - 35
12"x12"	100 - 300	10 - 27	400 - 600	31 - 38
14"x14"	136 - 408	11 - 31	544 - 681	36 - 41
16"x16"	178 - 533	13 - 36	711 - 889	41 - 46
22"x10"	200 - 525	15 - 36	606 - 580	38 - 45
22"x22"	336 - 1008	18 - 49	1176 - 1681	53 - 64
24"x24"	400 - 1000	19 - 48	1200 - 1600	54 - 62
30"x30"	625 - 1563	24 - 60	1875 - 2500	67 - 78

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 1320 - Maximum security steel grille with wire mesh sandwiched between two 3/16" thick plates with 2"x2" square holes and a 1" fret

FEATURES

- 10 gauge x #2 wire steel mesh deters insertion of contraband
- 3/16" thick steel stitch welded sleeve
- Suitable for supply and return applications

GRILLE SIZE

- Width: 6" - 30" (2" increments), 9" ¹
- Height: 4" - 30" (2" increments), 9" ¹
- Sleeve Length: 6" - 18" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

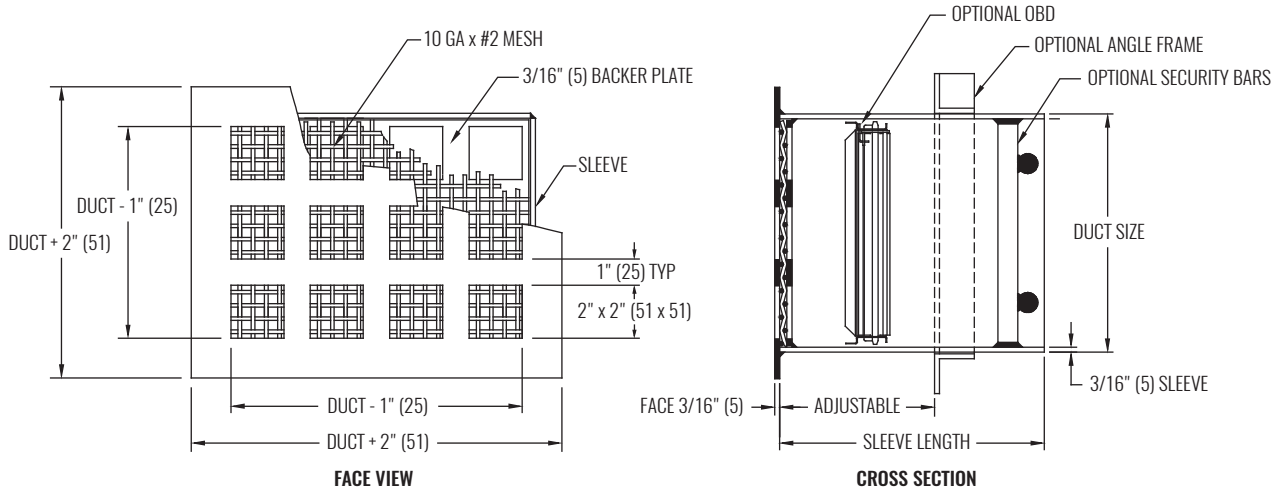
- Unpainted steel angle frame shipped loose for field installation, constructed of 1 1/2"x1 1/2"x3/16" angle ²
- Steel 3/4" diameter security bars on 6" centers welded in sleeve
- Steel 3"x3/4" diameter anchor bars
- Two unpainted loose steel angles shipped loose for field installation, constructed of 1 1/2"x1 1/2"x3/16" angle ²
- Front or rear operated OBD ³

NOTES:

- ¹ If selecting 9" width, height must also be 9".
- ² Steel angle frame is not compatible with the two loose angles.
- ³ Damper welded in sleeve.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Recommended opening = duct size + 1/2". Optional angle frame or loose angles to be field welded for mounting.

PERFORMANCE DATA

SIZE NOMINAL	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	25 - 88	7 - 16	100 - 150	17 - 21
8"x8"	44 - 133	10 - 20	156 - 222	21 - 25
9"x9"	56 - 169	11 - 22	197 - 281	24 - 28
10"x6"	60 - 122	13 - 19	143 - 225	20 - 25
10"x10"	69 - 208	12 - 24	243 - 347	26 - 32
12"x6"	75 - 163	15 - 22	184 - 250	23 - 27
12"x10"	75 - 238	12 - 26	278 - 400	28 - 34
12"x12"	100 - 250	15 - 27	300 - 450	29 - 36
14"x14"	136 - 340	17 - 31	408 - 613	34 - 42
16"x16"	178 - 444	20 - 36	533 - 800	39 - 48
20"x20"	278 - 694	25 - 45	833 - 1111	49 - 57
24"x24"	400 - 800	30 - 48	1000 - 1600	54 - 68

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 1330 - Heavy duty, medium/minimum security bar grille with wire mesh

FEATURES

- 16 gauge frame
- 14 gauge fixed blades set at 40° deflection on 3/8" centers
- 10 gauge x #2 wire steel mesh deters insertion of contraband
- 14 gauge steel sleeve with wrap around corner construction and stitch welded seams

GRILLE SIZE

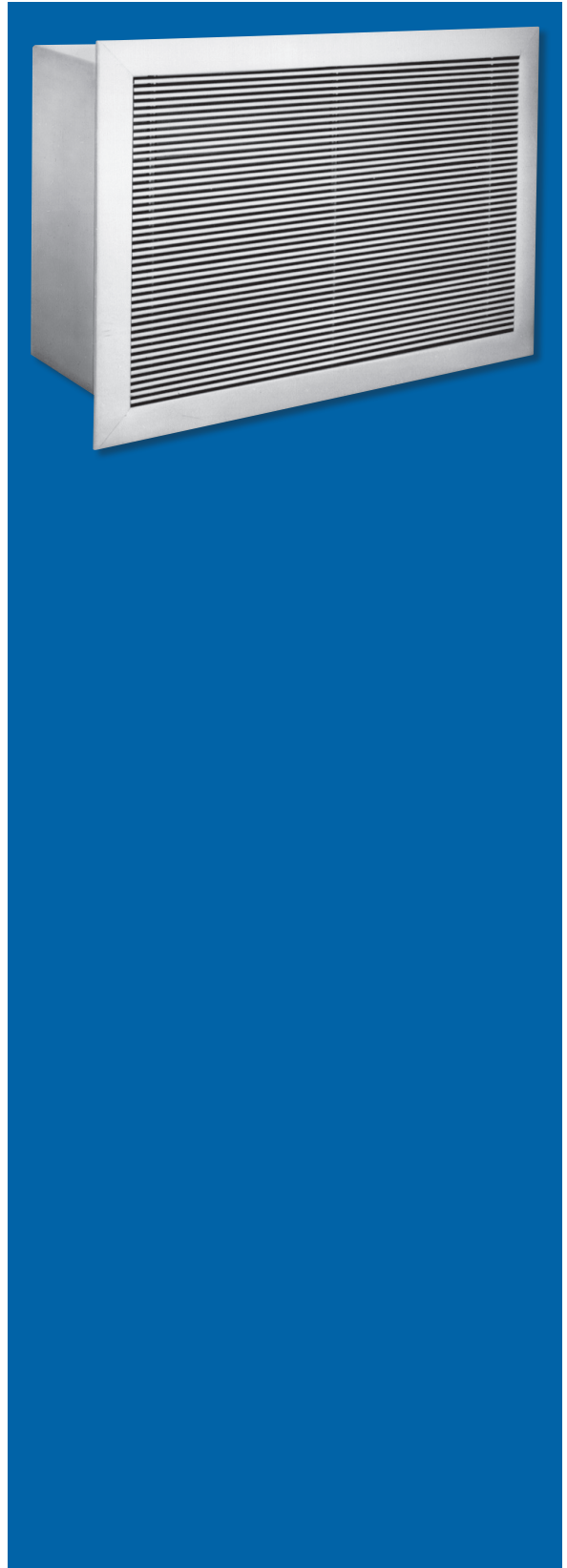
- Width: 6" - 30" (2" increments), 9" ¹
- Height: 4" - 30" (2" increments), 9" ¹
- Sleeve Length: 6" - 18" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

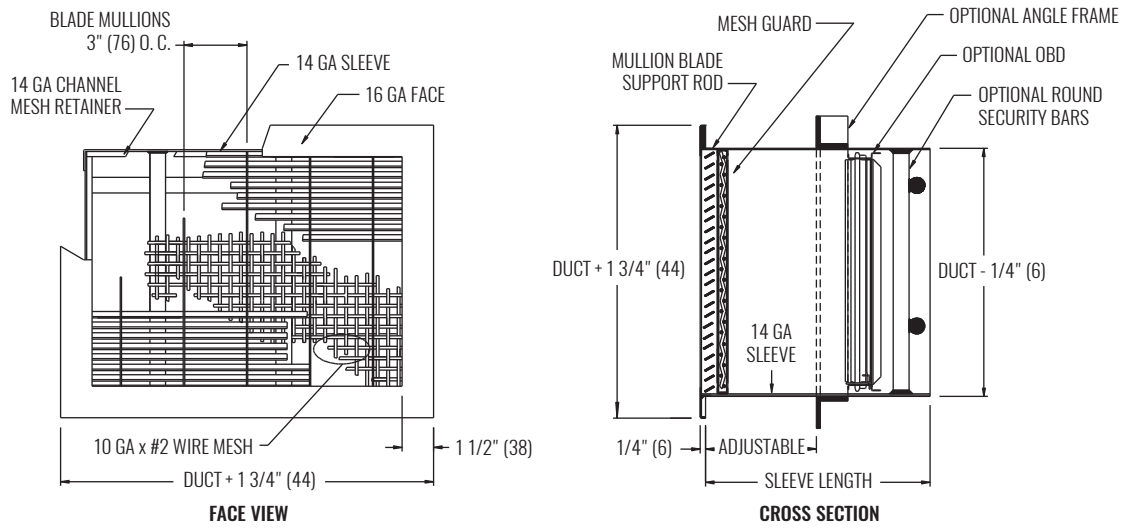
- Unpainted steel angle frame shipped loose for field installation, constructed of 1 1/2"x1 1/2"x3/16" angle ²
- Steel 3/4" diameter security bars on 6" centers welded in sleeve
- Steel 3"x3/4" diameter anchor bars
- Two unpainted loose steel angles shipped loose for field installation, constructed of 1 1/2"x1 1/2"x3/16" angle ²
- Front or rear operated OBD ³

NOTES:

- ¹ If selecting 9" width, height must also be 9".
- ² Steel angle frame is not compatible with the two loose angles.
- ³ Damper welded in sleeve.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Recommended opening = duct size + 1/2". Optional angle frame or loose angles to be field welded for mounting.

PERFORMANCE DATA

SIZE NOMINAL	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	50 - 125	11 - 18	150 - 225	20 - 24
8"x6"	67 - 167	13 - 21	200 - 300	23 - 28
8"x8"	89 - 222	15 - 24	267 - 356	26 - 30
10"x10"	139 - 278	19 - 27	347 - 556	30 - 38
12"x12"	100 - 400	12 - 32	500 - 700	36 - 42
14"x14"	136 - 544	14 - 37	681 - 953	42 - 49
16"x4"	125 - 219	18 - 24	250 - 375	25 - 31
18"x4"	125 - 238	18 - 25	275 - 425	27 - 33
18"x18"	300 - 925	28 - 49	1081 - 1550	53 - 63
20"x30"	500 - 1563	35 - 63	1828 - 2625	68 - 82
22"x22"	336 - 1008	22 - 51	1344 - 2017	59 - 72
30"x12"	350 - 1025	30 - 51	1194 - 1700	55 - 66

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 1340 - Minimum security steel louvered supply diffuser with 12 gauge lattice face

FEATURES

- 12 gauge steel lattice face has 13/16" square holes with a 3/16" fret
- 1, 2, 3, or 4-way discharge air patterns

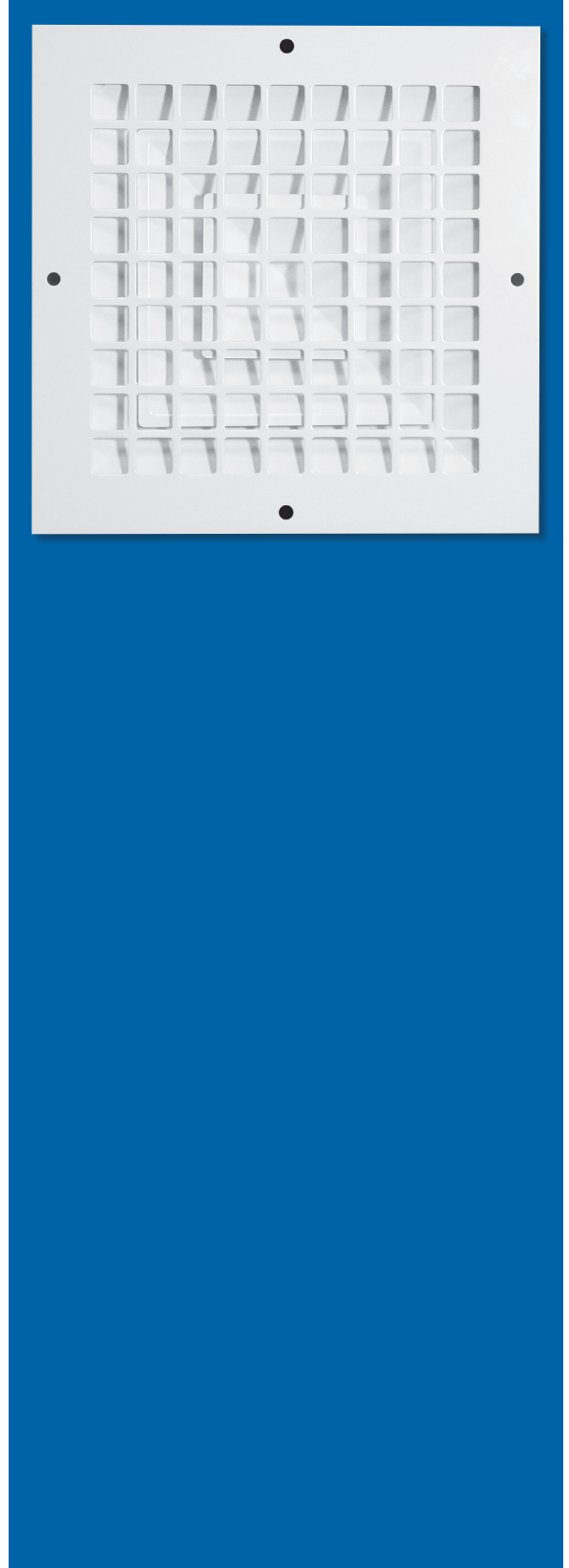
DIFFUSER SIZE

- Width: 6" - 24" (3" increments)
- Height: 6" - 24" (3" increments)

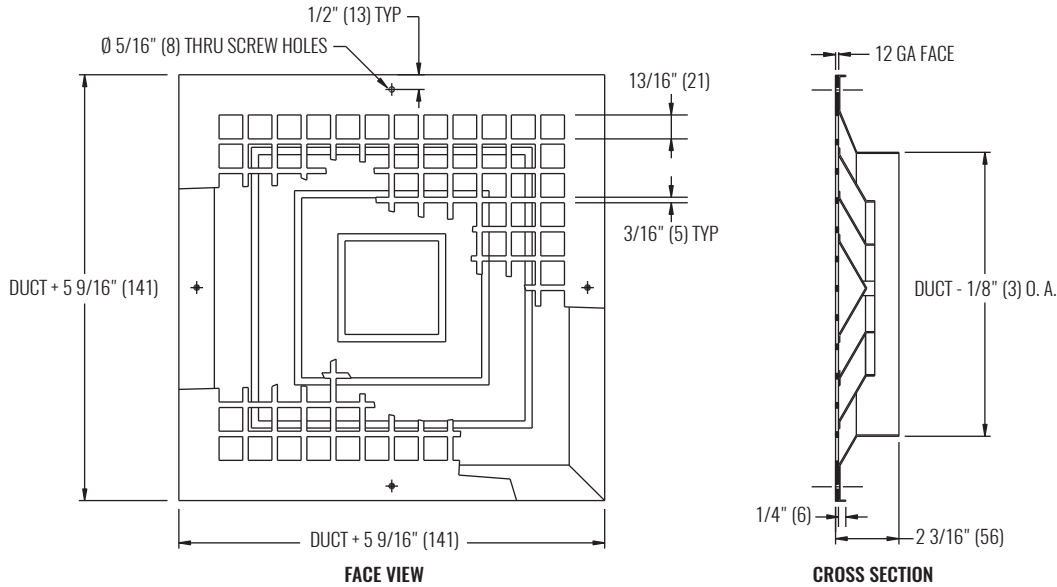
COMPATIBLE OPTIONS AND ACCESSORIES

- Duct mounted OBD

NOTES: Mounting security screws provided by others.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE							
	NC (< 25)				NC (25 - 40)			
NOMINAL	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	4-WAY THROW (ft)	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	4-WAY THROW (ft)
6"x6"	50 - 125	7 - 12	4 - 6	4 - 10	150 - 200	13 - 15	6 - 7	11 - 13
9"x9"	113 - 225	11 - 16	6 - 8	7 - 13	281 - 394	18 - 21	9 - 10	15 - 18
12"x12"	200 - 300	15 - 18	7 - 9	9 - 13	400 - 600	21 - 26	10 - 13	18 - 22
15"x15"	313 - 469	19 - 23	9 - 11	11 - 17	625 - 859	26 - 31	13 - 15	22 - 27
18"x18"	563 - 675	25 - 27	12 - 14	17 - 20	788 - 1125	30 - 35	15 - 18	23 - 30
21"x21"	550 - 766	25 - 29	12 - 15	14 - 19	919 - 1378	32 - 39	16 - 19	23 - 34
24"x24"	800 - 1000	30 - 33	15 - 17	18 - 22	1200 - 1600	37 - 42	18 - 21	26 - 35

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 51350 - Minimum security aluminum grille with fixed 3/16" x 3/4" blades set at 0° on 1/2" centers

FEATURES

- Extruded aluminum frame
- 5/16" Diameter tube is expanded to lock blades in place and reinforced full length by 1/4" diameter aluminum rod (mandrel construction)
- 1/8" thick aluminum stitch welded sleeve

GRILLE SIZE

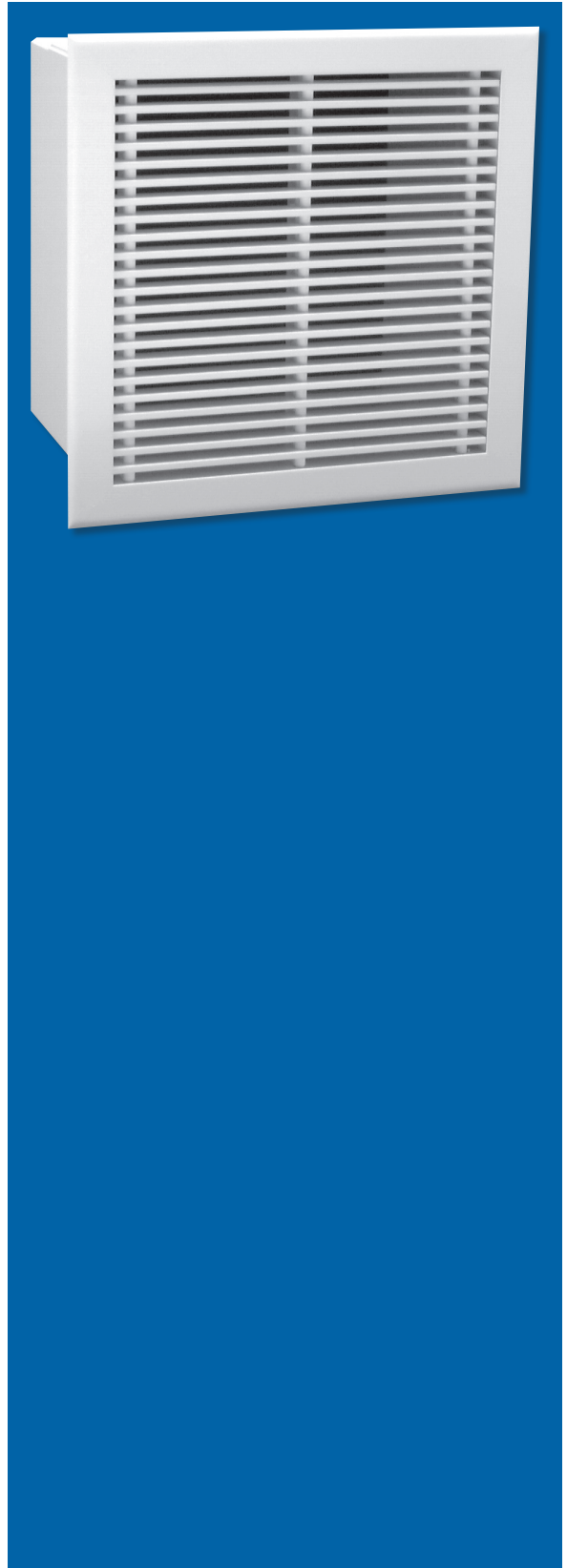
- Width: 6" - 30" (2" increments), 9" ¹
- Height: 4" - 30" (2" increments), 9" ¹
- Sleeve Length: 6" - 18" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- Unpainted aluminum angle frame shipped loose for field installation, constructed of 1 1/2"x1 1/2"x1/8" angle ²
- Aluminum 1/2" diameter security bars on 6" centers welded in sleeve
- Aluminum 3"x1/2" diameter anchor bars
- Two unpainted loose aluminum angles shipped loose for field installation, constructed of 1 1/2"x1 1/2"x 1/8" angle ²
- Front or rear operated OBD ³

NOTES:

- ¹ If selecting 9" width, height must also be 9".
- ² Steel angle frame is not compatible with the two loose angles.
- ³ Damper welded in sleeve.

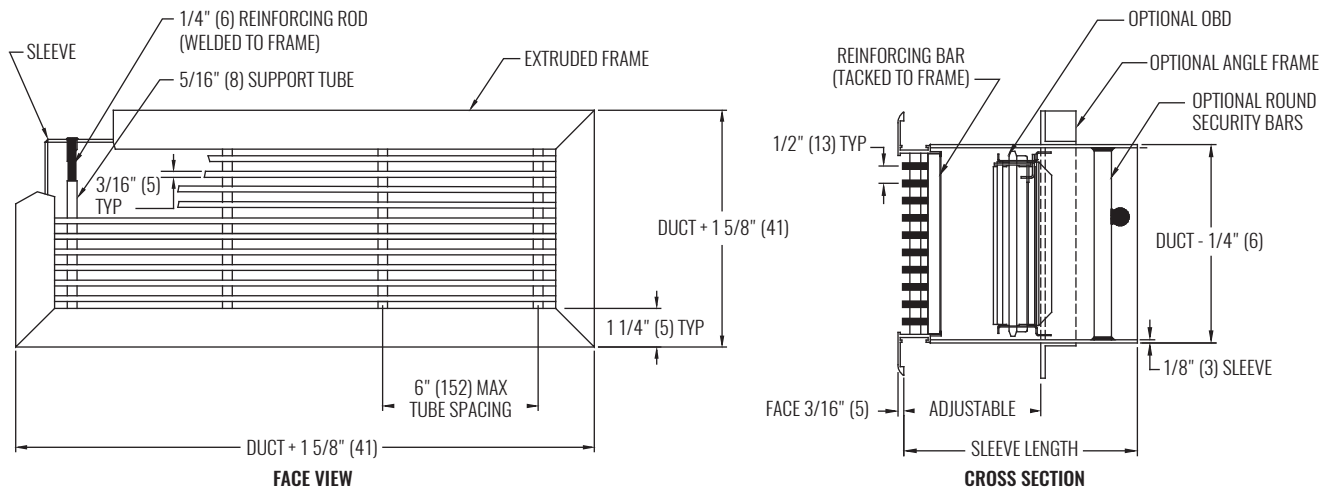


51350

Minimum Security, Heavy Duty, Aluminum Bar Grille



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Recommended opening = duct size + 1/2". Optional angle frame or loose angles to be field welded for mounting.

PERFORMANCE DATA

SIZE	PERFORMANCE - HORIZONTAL THROW, 48" UNIT LENGTH			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	25 - 125	8 - 21	150 - 175	23 - 24
8"x8"	44 - 222	10 - 27	267 - 356	30 - 35
10"x10"	69 - 278	12 - 31	347 - 556	34 - 43
12"x12"	200 - 400	26 - 37	600 - 800	41 - 52
16"x8"	100 - 413	16 - 37	491 - 725	41 - 50
18"x6"	100 - 350	17 - 34	413 - 600	37 - 45
20"x18"	300 - 1075	27 - 60	1269 - 1850	65 - 79
22"x22"	336 - 1344	26 - 67	1681 - 2353	75 - 89
24"x24"	400 - 1600	28 - 74	2000 - 2800	82 - 97
26"x26"	469 - 1878	31 - 80	2347 - 2817	89 - 98
30"x10"	250 - 900	25 - 55	1063 - 1550	60 - 72
30"x30"	625 - 1875	35 - 80	2500 - 3750	92 - 113

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 1380 - Steel, minimum security supply or return grille with 12 gauge face
- 51380 - Aluminum, minimum security supply or return grille with 1/8" thick face

FEATURES

- Steel (1380) or aluminum (51380) construction
- L pattern features a lattice face plate with 13/16" square holes and 3/16" fret (66% free area)
- P pattern features a perforated face plate with 5/16" round holes on 7/16" staggered centers (46% free area)

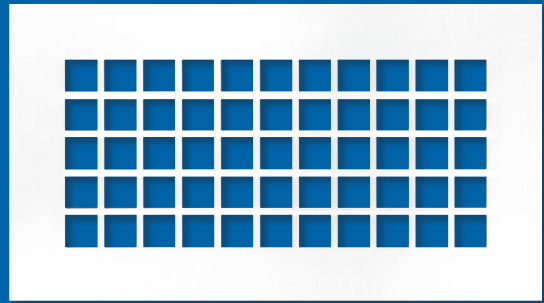
GRILLE SIZE

- Width: 6" - 30" (2" increments), 9" ¹
- Height: 4" - 30" (2" increments), 9" ¹

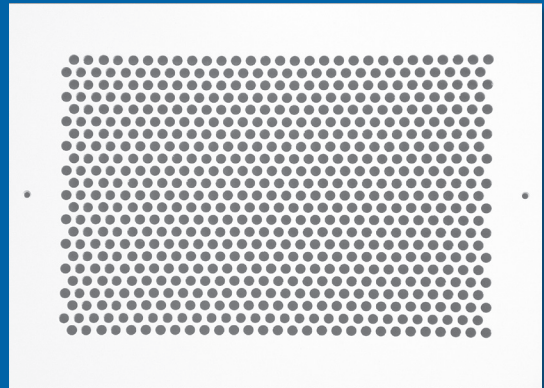
COMPATIBLE OPTIONS AND ACCESSORIES

- Countersunk or straight screw holes
- Front operated aluminum or steel OBD
- 8PF - Steel plaster frame
- 58PF - Aluminum plaster frame

NOTES: Mounting security screws provided by others.
¹ If selecting 9" width, height must also be 9".



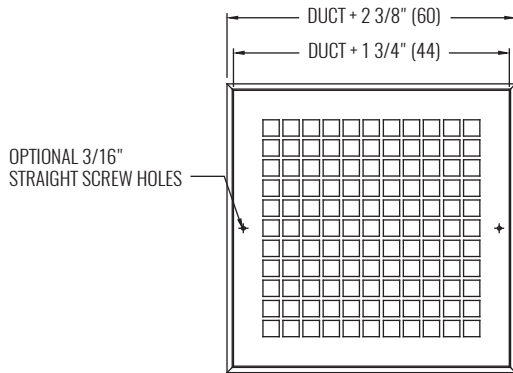
1380L



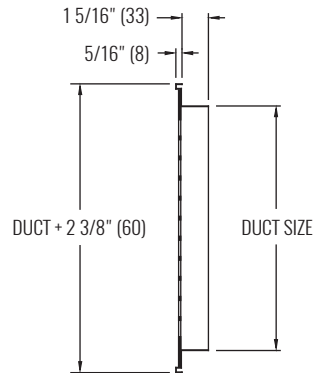
1380P



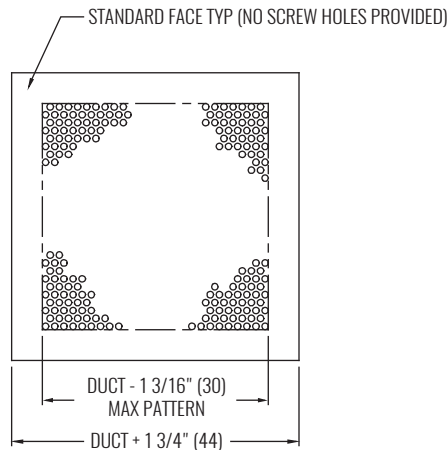
DIMENSIONAL DATA



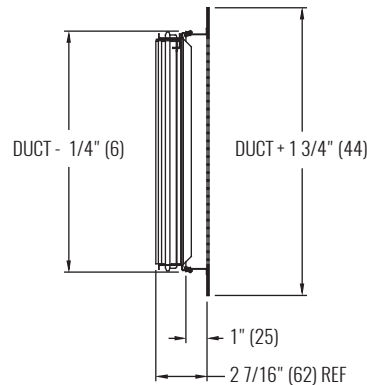
LATTICE FACE PLATE
SHOWN WITH OPTIONAL
PLASTER FRAME



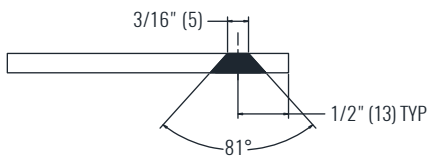
SIDE VIEW
SHOWN WITH OPTIONAL
PLASTER FRAME



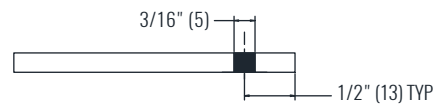
PERFORATED FACE PLATE



SIDE VIEW
SHOWN WITH OPTIONAL OBD



COUNTERSUNK SCREW HOLE DETAIL



STRAIGHT SCREW HOLE DETAIL

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm).

MODEL

- 1390 - Steel security grille with security bars (no sleeve)

FEATURES

- 3/4" diameter vertical and 2 1/2"x1/4" flat horizontal bars
- 30"x30" maximum single unit size

GRILLE SIZE

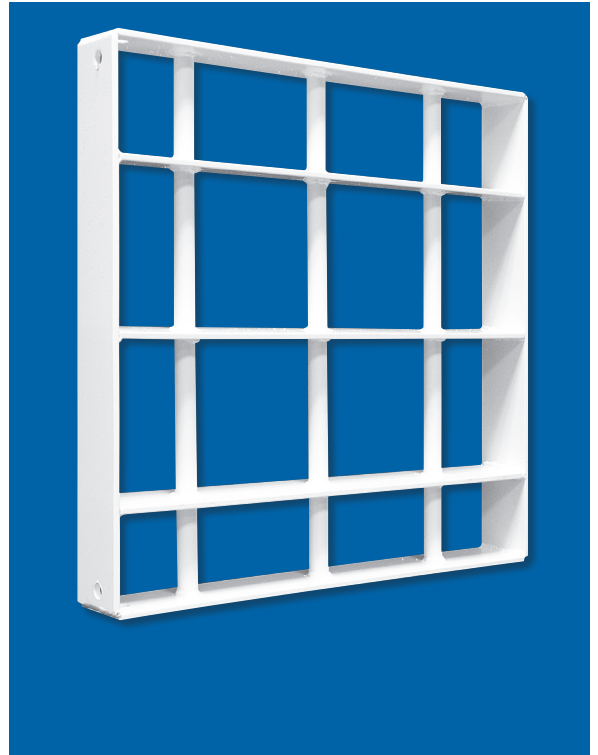
- Width: 6" - 30" (1" increments), 9"¹
- Height: 4" - 30" (1" increments), 9"¹

COMPATIBLE OPTIONS AND ACCESSORIES

- 2 1/2"x1/4" flat horizontal bars on 6" centers (no vertical round bars)
- 3/4" diameter vertical bars on 6" centers (no horizontal flat bars)

NOTES:

- ¹ If selecting 9" width, height must also be 9".

**WEB SEARCH: 1390****MODEL**

- 1390F - Steel security grille with security bars (sleeve)

FEATURES

- 30"x30" maximum single unit size
- Two unpainted steel angle frames shipped loose for field installation, constructed of 1 1/2"x1 1/2"x3/16" angle

GRILLE SIZE

- Width: 6" - 30" (2" increments), 9"¹
- Height: 4" - 30" (2" increments), 9"¹
- Sleeve Length: 6", 8", 10", 12", 14", 16", or 18"

NOTES:

- ¹ If selecting 9" width, height must also be 9".

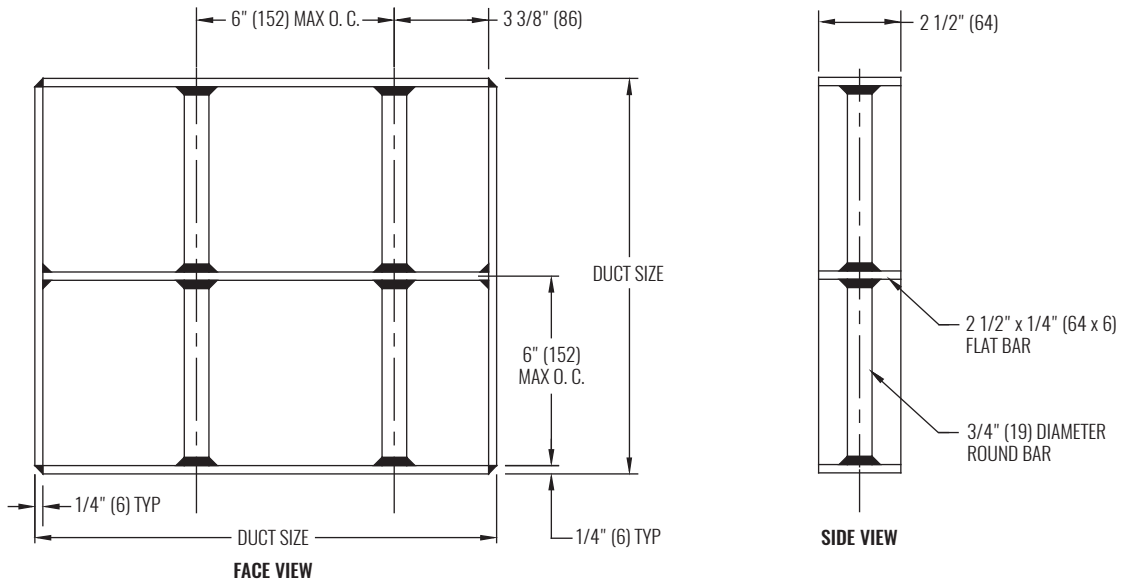
**WEB SEARCH: 1390F**

1390 / 1390F

Minimum Security Bars

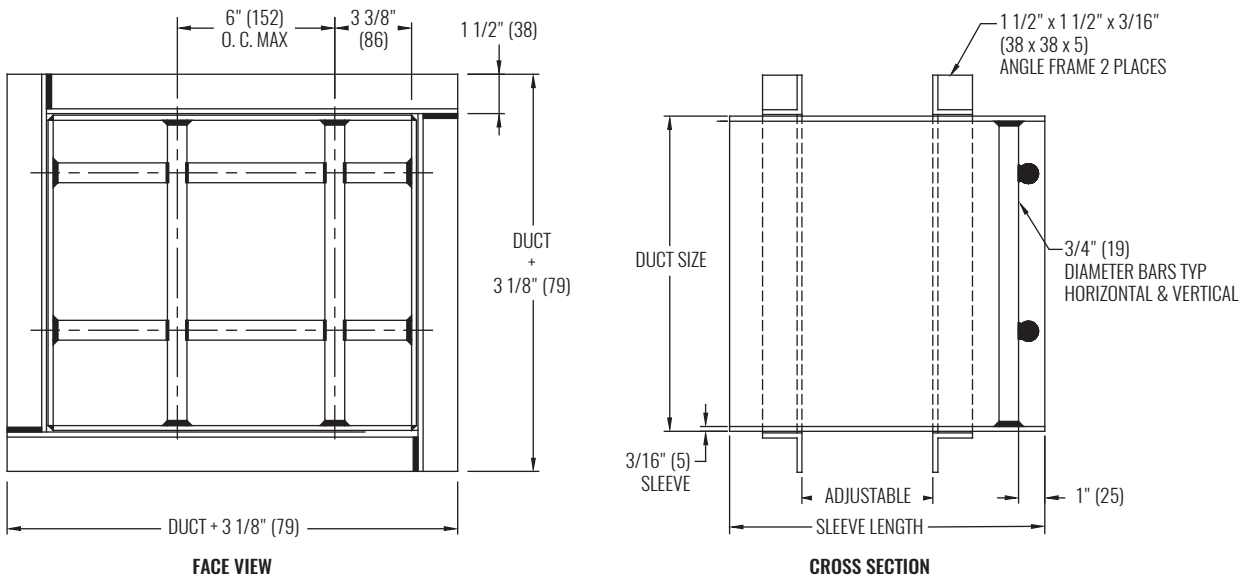


DIMENSIONAL DATA: 1390



NOTES: Dimensions in parentheses are millimeters (mm).

DIMENSIONAL DATA: 1390F



NOTES: Dimensions in parentheses are millimeters (mm).

MODEL

- 680 - Single deflection industrial supply grille with steel frame construction
- 5680 - Single deflection industrial supply grille with extruded aluminum frame construction

FEATURES

- Individually adjustable extruded aluminum airfoil blades
- Horizontal or vertical blades
- Border: 1 1/4"
- Blade Spacing: 1 1/4", 2", 3"²

GRILLE SIZE

- Width: 6" - 48" (1" increments)¹
- Height: 6" - 48" (1" increments)¹

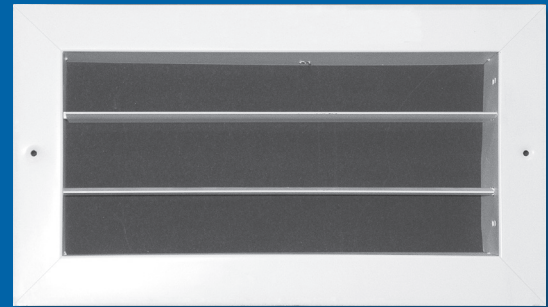
COMPATIBLE OPTIONS AND ACCESSORIES

- 3/16" diameter countersunk screw holes
- OBDHD - Heavy duty opposed blade damper

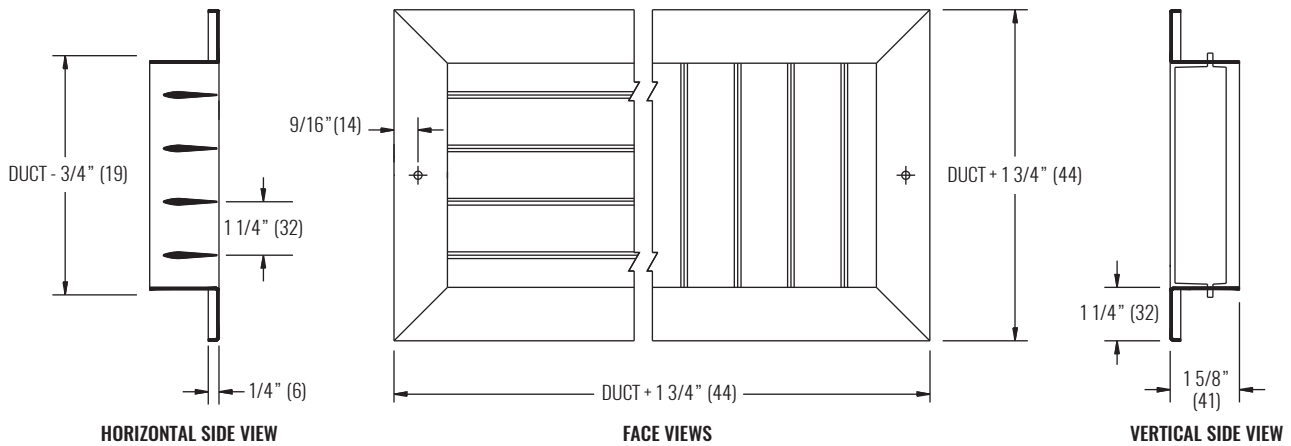
NOTES: Mounting hardware is to be provided by others.

¹ Use multiple sections for larger sizes.

² Minimum width and height for 3" blade spacing is 12".



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration shows 1 1/4" blade spacing.

PERFORMANCE DATA

SIZE		PERFORMANCE							
BLADE SPACING	L x W	NC (< 25)				NC (25 - 40)			
		CFM	0° DEFL THROW (ft)	15° DEFL THROW (ft)	30° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	15° DEFL THROW (ft)	30° DEFL THROW (ft)
1.25"	8"x8"	142 - 381	29 - 48	26 - 43	23 - 39	396 - 630	49 - 61	44 - 56	40 - 50
	18"x8"	384 - 804	48 - 69	43 - 63	39 - 57	833 - 1329	71 - 89	64 - 81	58 - 73
	18"x18"	1095 - 1696	81 - 101	73 - 91	66 - 83	1755 - 2802	103 - 130	93 - 117	84 - 106
	24"x14"	1188 - 1747	84 - 102	76 - 93	69 - 84	1806 - 2887	104 - 131	94 - 119	85 - 108
	26"x15"	1188 - 1997	84 - 109	76 - 99	69 - 90	2066 - 3300	111 - 141	101 - 127	91 - 115
	28"x19"	1717 - 2638	101 - 126	92 - 114	83 - 103	2729 - 4359	128 - 162	116 - 146	105 - 132
2"	18"x10"	676 - 1060	64 - 80	58 - 72	52 - 65	1098 - 1752	81 - 102	73 - 93	66 - 84
	30"x12"	1280 - 1977	88 - 109	79 - 98	72 - 89	2046 - 3267	111 - 140	100 - 127	91 - 115
	28"x20"	1822 - 2954	104 - 133	95 - 120	86 - 109	3055 - 4880	135 - 171	122 - 155	111 - 140
3"	30"x10"	1023 - 1671	78 - 100	71 - 91	64 - 82	1729 - 2761	102 - 129	92 - 116	83 - 105
	20"x36"	2154 - 3686	114 - 149	103 - 134	93 - 122	3813 - 6090	151 - 191	137 - 173	124 - 156

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 6880 - Double deflection industrial supply grille with steel frame construction
- 56880 - Double deflection industrial supply grille with extruded aluminum frame construction

FEATURES

- Individually adjustable extruded aluminum airfoil blades
- Horizontal or vertical front blades
- Border: 1 1/4"
- Blade Spacing: 1 1/4", 2", 3"²

GRILLE SIZE

- Width: 6" - 48" (1" increments)¹
- Height: 6" - 48" (1" increments)¹

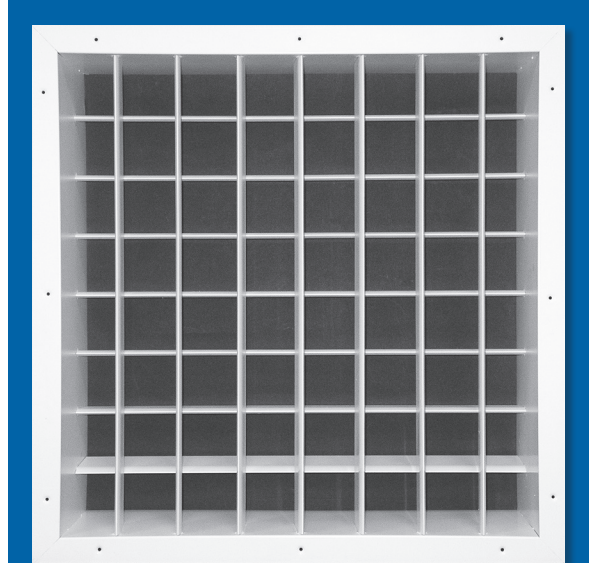
COMPATIBLE OPTIONS AND ACCESSORIES

- 3/16" diameter countersunk screw holes
- OBDHD - Heavy duty opposed blade damper

NOTES: Mounting hardware is to be provided by others.

¹ Use multiple sections for larger sizes.

² Minimum width and height for 3" blade spacing is 12".

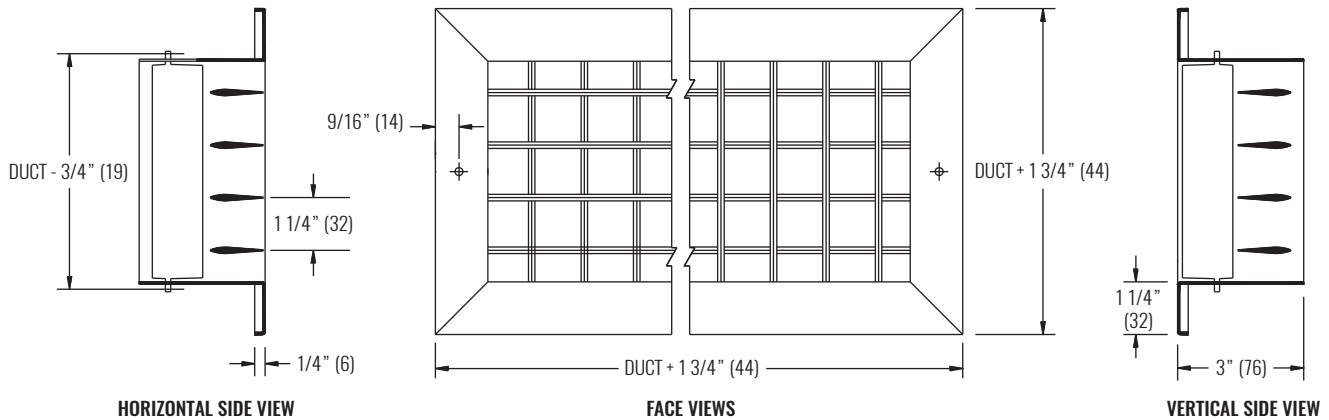


6880 / 56880

Industrial Airfoil Grilles, Double Deflection



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). Illustration shows 1 1/4" blade spacing.

PERFORMANCE DATA

SIZE		PERFORMANCE							
BLADE SPACING	SIZE	NC (< 25)				NC (25 - 40)			
		CFM	0° DEFL THROW (ft)	15° DEFL THROW (ft)	30° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	15° DEFL THROW (ft)	30° DEFL THROW (ft)
1.25"	8"x8"	142 - 381	29 - 48	26 - 43	23 - 39	396 - 630	49 - 61	44 - 56	40 - 50
	18"x8"	384 - 804	48 - 69	43 - 63	39 - 57	833 - 1329	71 - 89	64 - 81	58 - 73
	18"x18"	1095 - 1696	81 - 101	73 - 91	66 - 83	1755 - 2802	103 - 130	93 - 117	84 - 106
	24"x14"	1188 - 1747	84 - 102	76 - 93	69 - 84	1806 - 2887	104 - 131	94 - 119	85 - 108
	26"x15"	1188 - 1997	84 - 109	76 - 99	69 - 90	2066 - 3300	111 - 141	101 - 127	91 - 115
	28"x19"	1717 - 2638	101 - 126	92 - 114	83 - 103	2729 - 4359	128 - 162	116 - 146	105 - 132
	48"x20"	2322 - 4436	118 - 163	107 - 148	92 - 133	4588 - 7329	166 - 210	150 - 190	136 - 172
2"	18"x10"	676 - 1060	64 - 80	58 - 72	52 - 65	1098 - 1752	81 - 102	73 - 93	66 - 84
	30"x12"	1280 - 1977	88 - 109	79 - 98	72 - 89	2046 - 3267	111 - 140	100 - 127	91 - 115
	28"x20"	1822 - 2954	104 - 133	95 - 120	86 - 109	3055 - 4880	135 - 171	122 - 155	111 - 140
3"	30"x10"	1023 - 1671	78 - 100	71 - 91	64 - 82	1729 - 2761	102 - 129	92 - 116	83 - 105
	20"x36"	2154 - 3686	114 - 149	103 - 134	93 - 122	3813 - 6090	151 - 191	137 - 173	124 - 156

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 680MP - Industrial supply grille with fully adjustable front blades and gang operated rear blades with steel frame construction
- 5680MP - Industrial supply grille with fully adjustable front blades and gang operated rear blades with extruded aluminum frame construction

FEATURES

- Extruded aluminum airfoil blades
- Horizontal or vertical front blades
- Individually adjustable front blades
- Steel gang operated multi-louver rear blades
- Border: 1 1/4"
- Blade Spacing: 3/4" front and 1" rear

GRILLE SIZE

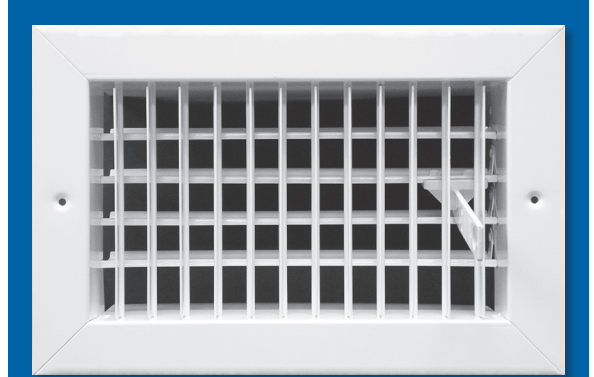
- Width: 10" - 40" (1" increments)¹
- Height: 6" - 36" (1" increments)¹

COMPATIBLE OPTIONS AND ACCESSORIES

- OBD – Steel opposed blade damper
- POBD – Painted steel opposed blade damper
- 5OBD – Aluminum opposed blade damper

NOTES: Mounting hardware is to be provided by others.

¹ Use multiple sections for larger sizes.



WEB SEARCH: [680MP](#) or [5680MP](#)

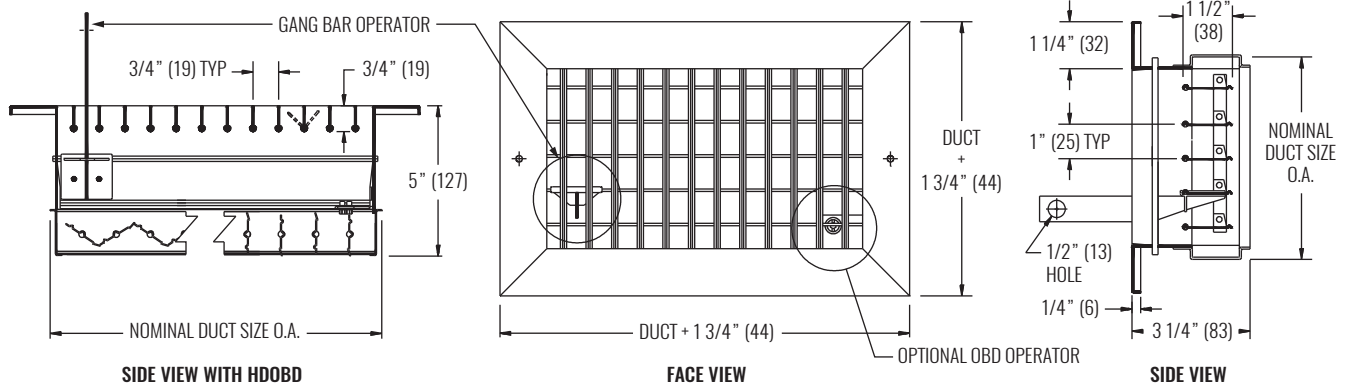


680MP / 5680MP

Industrial Airfoil Grilles, Double Deflection, Gang Operated



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE							
	NC (< 25)				NC (25 - 40)			
SIZE	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
12"x6"	164 - 352	24 - 34	18 - 27	11 - 16	365 - 582	35 - 44	27 - 34	16 - 20
18"x4"	164 - 337	24 - 34	18 - 26	11 - 15	349 - 556	34 - 43	27 - 34	15 - 20
10"x8"	193 - 393	36 - 36	20 - 28	11 - 16	407 - 649	37 - 47	29 - 36	17 - 21
12"x8"	227 - 465	28 - 40	21 - 31	12 - 18	482 - 769	40 - 51	31 - 40	18 - 23
14"x8"	239 - 535	28 - 43	22 - 33	13 - 19	556 - 885	43 - 55	34 - 42	20 - 25
18"x10"	443 - 829	39 - 53	30 - 41	17 - 24	858 - 1369	54 - 68	42 - 53	24 - 31
24"x8"	488 - 869	41 - 54	31 - 42	18 - 24	899 - 1436	55 - 70	43 - 54	25 - 31
32"x10"	642 - 1382	47 - 68	36 - 53	21 - 31	1450 - 2284	70 - 88	54 - 68	32 - 40
34"x10"	686 - 1458	48 - 70	37 - 54	22 - 32	1509 - 2409	71 - 90	55 - 70	32 - 41
36"x12"	836 - 1814	53 - 78	41 - 61	24 - 35	1877 - 2998	80 - 101	62 - 78	36 - 45
22"x22"	929 - 2029	56 - 83	43 - 64	25 - 37	2099 - 3353	84 - 106	65 - 83	38 - 48
30"x30"	1782 - 3517	78 - 109	60 - 84	35 - 49	3637 - 5810	111 - 140	86 - 109	50 - 63

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Unless otherwise noted, throw value ranges provided are for a horizontal discharge air pattern at isothermal conditions and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- DPL - Drum louver
- DPL2 - Drum louver with split vanes

FEATURES

- Extruded aluminum frame, blade, and drum construction
- Individually adjustable heavy duty extruded aluminum blades
- Up to 60° of drum rotation
- Ideal for large spaces with long throw requirements

GRILLE SIZE

- Width: 9", 12", 15", 18", 20", 24", 25", 30", 35", 36", 40", 48", 50", 60", 70"
- Height: 4", 6", 10", 12", 15"
- Louver Vane Spacing:
 - 3" (4" and 6" height only)
 - 5" (10", 12", and 15" height only)

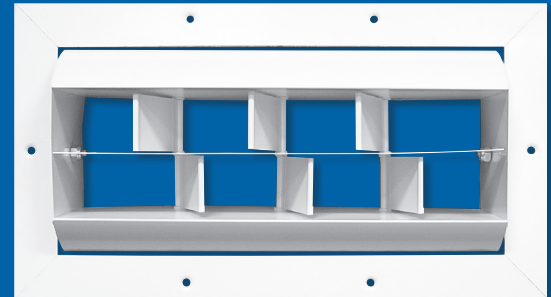
COMPATIBLE OPTIONS AND ACCESSORIES

- DOBHD - Steel, heavy duty opposed blade damper

NOTES: Width must be greater than or equal to height.



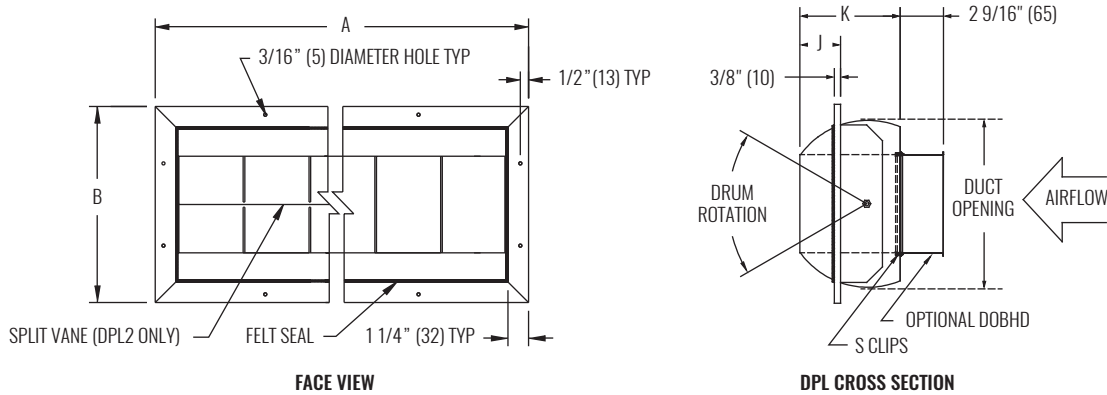
DPL



DPL2



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE W x H	PERFORMANCE - FREE JET THROW				DIMENSIONS						
	NC (< 25)				DUCT OPENING	A	B	J	K	VANES	
CFM	THROW (ft)	CFM	THROW (ft)								
6"x9"	183 - 263	24 - 29	271 - 400	30 - 36	6 5/8" x 10 1/8" (168 x 257)	11 11/16" (297)	8 3/16" (208)	1 21/32" (42)	3 5/8" (92)	2	
6"x12"	240 - 341	28 - 33	361 - 515	34 - 41	6 5/8" x 13 1/8" (168 x 333)	14 11/16" (373)	8 3/16" (208)	1 21/32" (42)	3 5/8" (92)	3	
6"x18"	333 - 483	33 - 40	531 - 738	41 - 49	6 5/8" x 19 1/8" (168 x 486)	20 11/16" (525)	8 3/16" (208)	1 21/32" (42)	3 5/8" (92)	5	
6"x24"	440 - 631	38 - 46	669 - 956	47 - 56	6 5/8" x 25 1/8" (168 x 638)	26 11/16" (678)	8 3/16" (208)	1 21/32" (42)	3 5/8" (92)	7	
6"x30"	547 - 775	42 - 50	821 - 1163	51 - 61	6 5/8" x 31 1/8" (168 x 791)	32 11/16" (830)	8 3/16" (208)	1 21/32" (42)	3 5/8" (92)	9	
10"x20"	584 - 837	44 - 52	888 - 1268	53 - 64	10 3/8" x 21 1/8" (264 x 537)	22 11/16" (576)	11 15/16" (303)	2 7/16" (62)	6" (152)	3	
10"x30"	812 - 1176	51 - 62	1259 - 1787	64 - 76	10 3/8" x 31 1/8" (264 x 791)	32 11/16" (830)	11 15/16" (303)	2 7/16" (62)	6" (152)	5	
12"x20"	698 - 989	48 - 57	1047 - 1484	58 - 69	12 3/8" x 21 1/8" (314 x 537)	22 11/16" (576)	13 15/16" (354)	3" (76)	6" (152)	3	
12"x30"	972 - 1361	56 - 67	1491 - 2138	69 - 83	12 3/8" x 31 1/8" (314 x 791)	32 11/16" (830)	13 15/16" (354)	3" (76)	6" (152)	5	
12"x40"	1289 - 1784	65 - 76	1893 - 2701	78 - 94	12 3/8" x 41 1/8" (314 x 1045)	42 11/16" (1084)	13 15/16" (354)	3" (76)	6" (152)	7	
15"x50"	1869 - 2684	78 - 93	2847 - 4071	96 - 115	15 3/8" x 51 1/8" (391 x 1299)	52 11/16" (1338)	17" (432)	3 3/16" (81)	8 1/8" (206)	9	

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5DMGSR - Single deflection spiral duct supply grille with end caps, curved to fit a specific duct diameter

FEATURES

- All aluminum construction
- Horizontal (H) or vertical (V) blades
- 3/4" blade spacing

GRILLE SIZE

- Width: 10" - 48" (1" increments)
- Height Min Width Duct Diameter

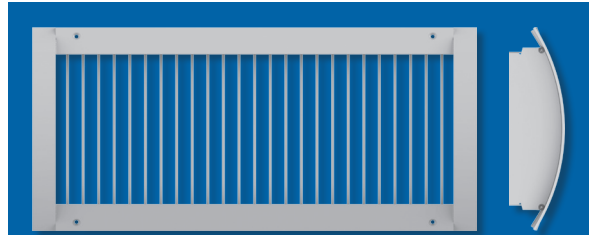
3"	10"	6" - 36"
4"	10"	6" - 36"
6"	10"	8" - 36"
8"	10"	10" - 36"
10"	10"	12" - 36"
12"	12"	14" - 36"
- Duct diameter available in 2" increments

COMPATIBLE OPTIONS AND ACCESSORIES

- Damper/Extractor ¹

NOTES:

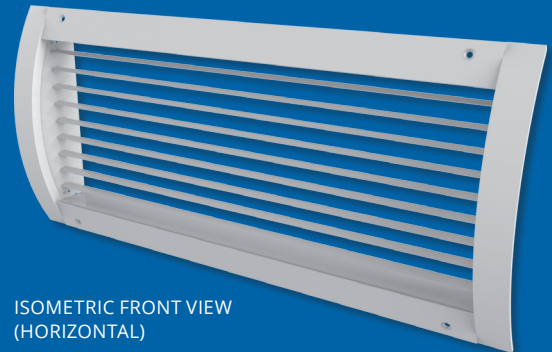
¹ Damper/Extractor must be ordered with the product; cannot be retrofitted.



FACE AND SIDE VIEW (VERTICAL)



FACE AND SIDE VIEW (HORIZONTAL)



ISOMETRIC FRONT VIEW (HORIZONTAL)

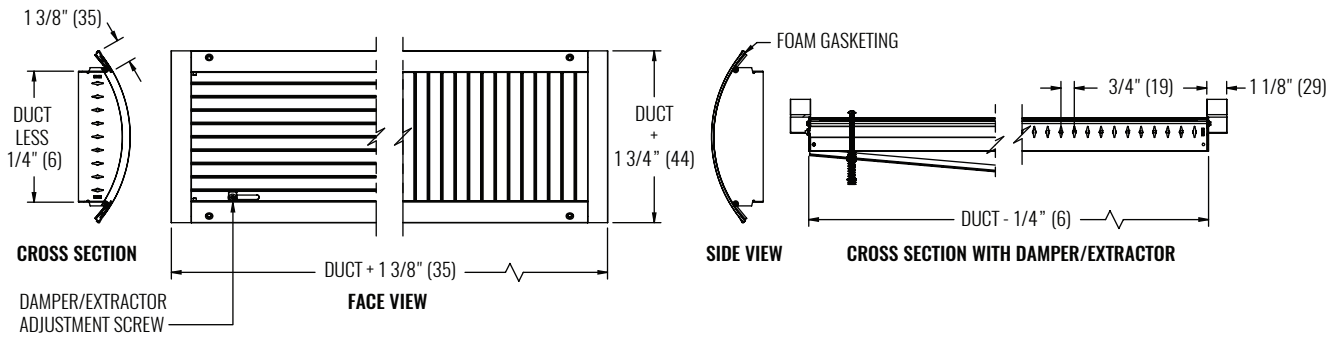


5DMGSR

Spiral Duct Grille, Single Deflection, Radius Endcap



DIMENSIONAL DATA



AVAILABLE SIZES AND MINIMUM DUCT DIAMETER

DESCRIPTION	HEIGHT					
	3" (76)	4" (102)	6" (152)	8" (203)	10" (254)	12" (305)
WIDTH MIN / MAX	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	12" (305) / 48" (1219)
DUCT DIAMETER MIN / MAX	6" (152) / 36" (914)	6" (152) / 36" (914)	8" (203) / 36" (914)	10" (254) / 36" (914)	12" (305) / 36" (914)	14" (356) / 36" (914)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - FREE JET THROW									
	CFM	NC (< 25)			CFM	NC (25 - 40)				
		DEFLECTION	DEFLECTION	DEFLECTION		DEFLECTION	DEFLECTION	DEFLECTION		
W x H	0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)	0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)	0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)	
18"x3"	63 - 176	10 - 17	8 - 13	4 - 8	183 - 290	18 - 22	14 - 17	8 - 10		
10"x4"	63 - 141	10 - 15	8 - 12	5 - 7	147 - 233	16 - 20	12 - 15	7 - 19		
12"x4"	51 - 167	8 - 17	6 - 13	4 - 8	173 - 276	17 - 22	13 - 17	8 - 10		
10"x6"	72 - 213	10 - 19	8 - 15	4 - 9	221 - 352	19 - 24	15 - 19	9 - 11		
12"x6"	90 - 252	11 - 21	9 - 16	5 - 9	262 - 417	21 - 27	16 - 21	9 - 12		
14"x6"	97 - 290	11 - 22	9 - 17	5 - 10	300 - 480	23 - 28	17 - 22	10 - 13		
16"x6"	117 - 328	13 - 24	10 - 18	6 - 11	340 - 542	24 - 30	19 - 23	11 - 14		
18"x6"	125 - 365	13 - 25	10 - 19	6 - 11	377 - 603	25 - 32	20 - 35	11 - 14		
12"x8"	108 - 333	12 - 24	9 - 18	5 - 11	346 - 551	12 - 31	10 - 24	6 - 14		
14"x8"	133 - 384	13 - 25	10 - 20	6 - 11	398 - 634	36 - 33	20 - 25	12 - 15		
18"x8"	159 - 481	14 - 29	11 - 22	6 - 13	499 - 796	29 - 37	23 - 28	13 - 17		
20"x8"	194 - 529	16 - 30	12 - 23	7 - 13	548 - 875	30 - 38	24 - 30	14 - 17		

SEE BACK SUPPLEMENT FOR DESIGN INFO

Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5DMGDR - Double deflection spiral duct supply grille with end caps, curved to fit a specific duct diameter

FEATURES

- All aluminum construction
- Horizontal (H) or vertical (V) front blades
- 3/4" blade spacing
- Ideal choice for exposed duct ceiling applications

GRILLE SIZE

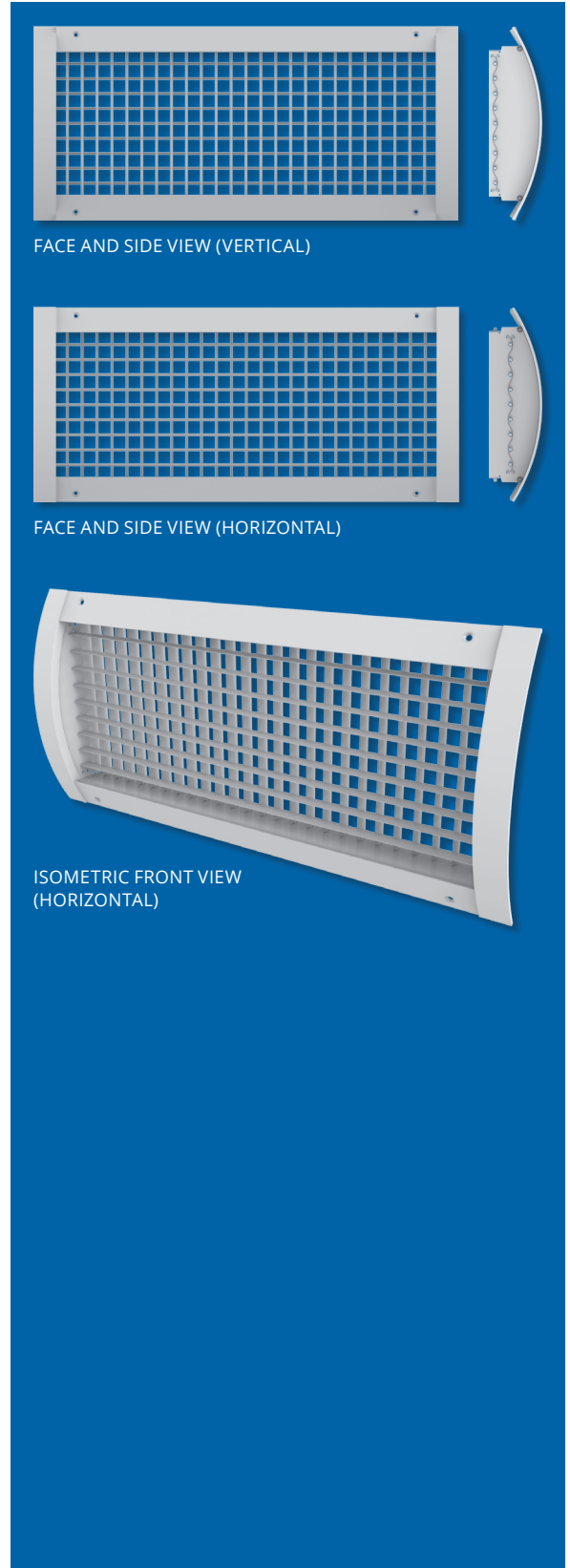
- Width: 10" - 48" (1" increments)
 - Height
- | Height | Min Width | Duct Diameter |
|--------|-----------|---------------|
| 3" | 10" | 6" - 36" |
| 4" | 10" | 6" - 36" |
| 6" | 10" | 8" - 36" |
| 8" | 10" | 10" - 36" |
| 10" | 10" | 12" - 36" |
| 12" | 12" | 14" - 36" |
- Duct diameter available in 2" increments

COMPATIBLE OPTIONS AND ACCESSORIES

- Damper/Extractor ¹

NOTES:

¹ Damper/Extractor must be ordered with the product; cannot be retrofitted.



WEB SEARCH: 5DMGDR

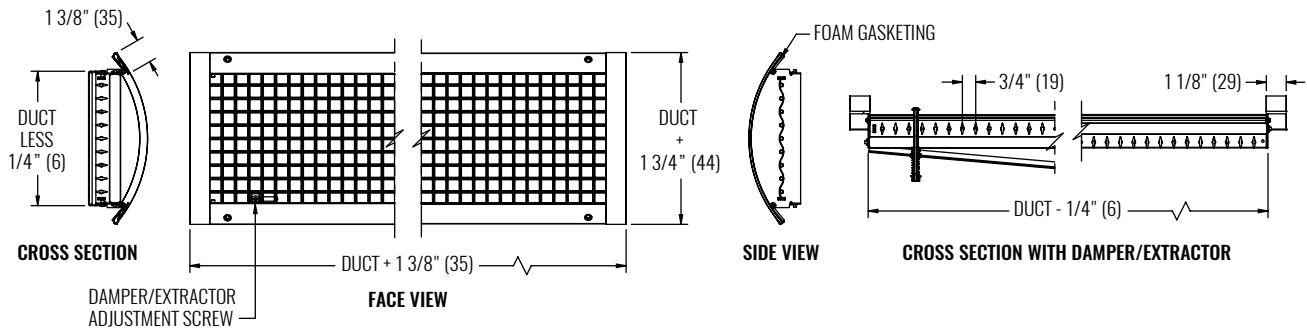


5DMGDR

Spiral Duct Grille, Double Deflection, Radius Endcap



DIMENSIONAL DATA



AVAILABLE SIZES AND MINIMUM DUCT DIAMETER

DESCRIPTION	HEIGHT					
	3" (76)	4" (102)	6" (152)	8" (203)	10" (254)	12" (305)
WIDTH MIN / MAX	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	12" (305) / 48" (1219)
DUCT DIAMETER MIN / MAX	6" (152) / 36" (914)	6" (152) / 36" (914)	8" (203) / 36" (914)	10" (254) / 36" (914)	12" (305) / 36" (914)	14" (356) / 36" (914)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - FREE JET THROW									
	CFM	NC (< 25)			CFM	NC (25 - 40)				
		DEFLECTION	DEFLECTION	DEFLECTION		DEFLECTION	DEFLECTION	DEFLECTION		
W x H	0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)	0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)	0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)	
18"x3"	63 - 176	10 - 17	8 - 13	4 - 8	183 - 290	18 - 22	14 - 17	8 - 10		
10"x4"	63 - 141	10 - 15	8 - 12	5 - 7	147 - 233	16 - 20	12 - 15	7 - 19		
12"x4"	51 - 167	8 - 17	6 - 13	4 - 8	173 - 276	17 - 22	13 - 17	8 - 10		
10"x6"	72 - 213	10 - 19	8 - 15	4 - 9	221 - 352	19 - 24	15 - 19	9 - 11		
12"x6"	90 - 252	11 - 21	9 - 16	5 - 9	262 - 417	21 - 27	16 - 21	9 - 12		
14"x6"	97 - 290	11 - 22	9 - 17	5 - 10	300 - 480	23 - 28	17 - 22	10 - 13		
16"x6"	117 - 328	13 - 24	10 - 18	6 - 11	340 - 542	24 - 30	19 - 23	11 - 14		
18"x6"	125 - 365	13 - 25	10 - 19	6 - 11	377 - 603	25 - 32	20 - 35	11 - 14		
12"x8"	108 - 333	12 - 24	9 - 18	5 - 11	346 - 551	12 - 31	10 - 24	6 - 14		
14"x8"	133 - 384	13 - 25	10 - 20	6 - 11	398 - 634	36 - 33	20 - 25	12 - 15		
18"x8"	159 - 481	14 - 29	11 - 22	6 - 13	499 - 796	29 - 37	23 - 28	13 - 17		
20"x8"	194 - 529	16 - 30	12 - 23	7 - 13	548 - 875	30 - 38	24 - 30	14 - 17		

SEE BACK SUPPLEMENT FOR DESIGN INFO

Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5DMGSU - Single deflection spiral duct supply grille with universal end caps to accommodate multiple duct diameters

FEATURES

- All aluminum construction
- Horizontal (H) or vertical (V) blades
- 3/4" blade spacing
- Ideal choice for exposed duct ceiling applications

GRILLE SIZE

- Width: 10" - 48" (1" increments)
- Height

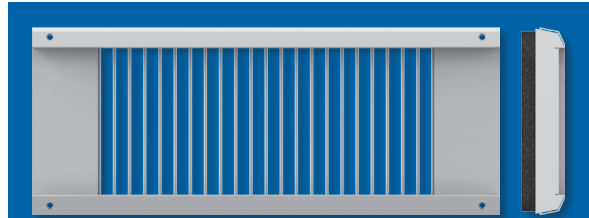
Height	Min Width	Duct Diameter
3"	10"	6" - 36"
4"	10"	10" - 36"
6"	10"	12" - 36"
8"	14"	20" - 36"
10"	16"	24" - 36"
- Duct diameter available in 2" increments

COMPATIBLE OPTIONS AND ACCESSORIES

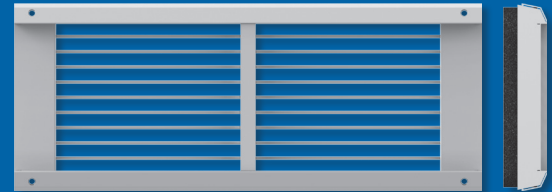
- Damper/Extractor ¹

NOTES:

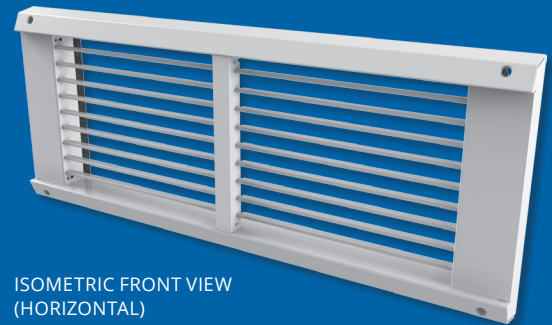
¹ Damper/Extractor must be ordered with the product; cannot be retrofitted.



FACE AND SIDE VIEW (VERTICAL)



FACE AND SIDE VIEW (HORIZONTAL)



ISOMETRIC FRONT VIEW (HORIZONTAL)

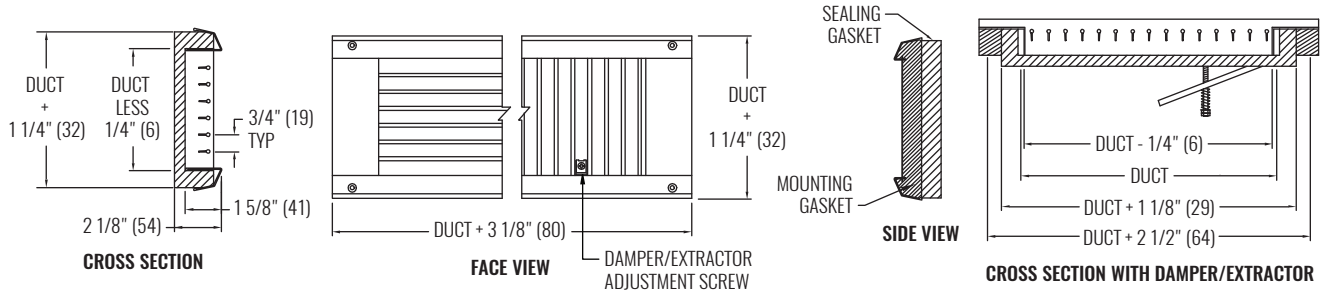


5DMGSU

Spiral Duct Grille, Single Deflection, Universal Endcap



DIMENSIONAL DATA



AVAILABLE SIZES AND MINIMUM DUCT DIAMETER

DESCRIPTION	HEIGHT				
	3" (76)	4" (102)	6" (152)	8" (203)	10" (254)
WIDTH MIN / MAX	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	14" (356) / 48" (1219)	16" (406) / 48" (1219)
DUCT DIAMETER MIN / MAX	6" (152) / 36" (914)	10" (254) / 36" (914)	12" (305) / 36" (914)	20" (508) / 36" (914)	24" (610) / 36" (914)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - FREE JET THROW							
	WxH	CFM	NC (< 25)			NC (25 - 40)		
			DEFLECTION	DEFLECTION	DEFLECTION	CFM	DEFLECTION	DEFLECTION
0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)	0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)			
18"x3"	63 - 176	10 - 17	8 - 13	4 - 8	183 - 290	18 - 22	14 - 17	8 - 10
10"x4"	63 - 141	10 - 15	8 - 12	5 - 7	147 - 233	16 - 20	12 - 15	7 - 19
12"x4"	51 - 167	8 - 17	6 - 13	4 - 8	173 - 276	17 - 22	13 - 17	8 - 10
10"x6"	72 - 213	10 - 19	8 - 15	4 - 9	221 - 352	19 - 24	15 - 19	9 - 11
12"x6"	90 - 252	11 - 21	9 - 16	5 - 9	262 - 417	21 - 27	16 - 21	9 - 12
14"x6"	97 - 290	11 - 22	9 - 17	5 - 10	300 - 480	23 - 28	17 - 22	10 - 13
16"x6"	117 - 328	13 - 24	10 - 18	6 - 11	340 - 542	24 - 30	19 - 23	11 - 14
18"x6"	125 - 365	13 - 25	10 - 19	6 - 11	377 - 603	25 - 32	20 - 35	11 - 14
12"x8"	108 - 333	12 - 24	9 - 18	5 - 11	346 - 551	12 - 31	10 - 24	6 - 14
14"x8"	133 - 384	13 - 25	10 - 20	6 - 11	398 - 634	36 - 33	20 - 25	12 - 15
18"x8"	159 - 481	14 - 29	11 - 22	6 - 13	499 - 796	29 - 37	23 - 28	13 - 17
20"x8"	194 - 529	16 - 30	12 - 23	7 - 13	548 - 875	30 - 38	24 - 30	14 - 17

SEE BACK SUPPLEMENT FOR DESIGN INFO

Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5DMGDU - Double deflection spiral duct supply grille with universal end caps to accommodate multiple duct diameters

FEATURES

- All aluminum construction
- Horizontal (H) or vertical (V) front blades
- 3/4" blade spacing
- Ideal choice for exposed duct ceiling applications

GRILLE SIZE

- Width: 10" - 48" (1" increments)
- Height

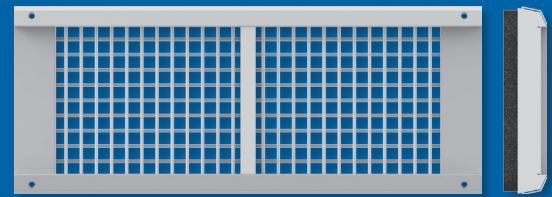
Height	Min Width	Duct Diameter
3"	10"	6" - 36"
4"	10"	10" - 36"
6"	10"	12" - 36"
8"	14"	20" - 36"
10"	16"	24" - 36"
- Duct diameter available in 2" increments

COMPATIBLE OPTIONS AND ACCESSORIES

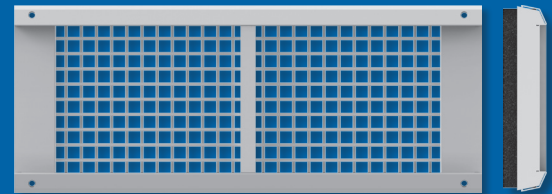
- Damper/Extractor ¹

NOTES:

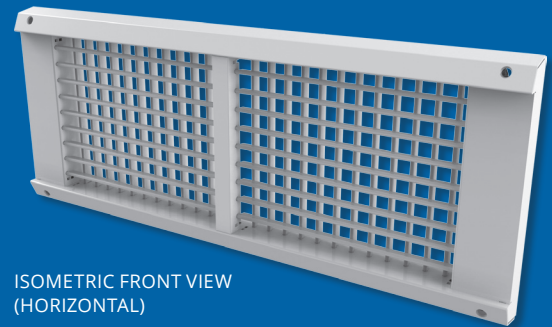
¹ Damper/Extractor must be ordered with the product; cannot be retrofitted.



FACE AND SIDE VIEW (VERTICAL)



FACE AND SIDE VIEW (HORIZONTAL)



ISOMETRIC FRONT VIEW (HORIZONTAL)

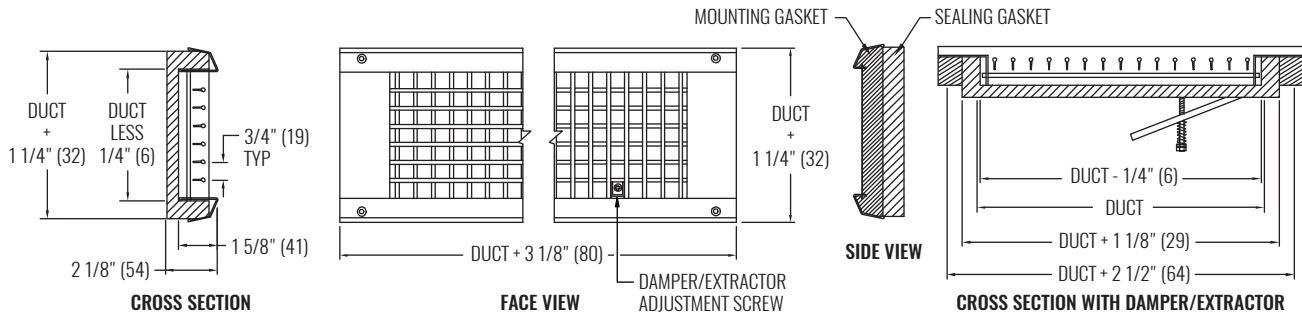


5DMGDU

Spiral Duct Grille, Double Deflection, Universal Endcap



DIMENSIONAL DATA



AVAILABLE SIZES AND MINIMUM DUCT DIAMETER

DESCRIPTION	HEIGHT				
	3" (76)	4" (102)	6" (152)	8" (203)	10" (254)
WIDTH MIN / MAX	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	14" (356) / 48" (1219)	16" (406) / 48" (1219)
DUCT DIAMETER MIN / MAX	6" (152) / 36" (914)	10" (254) / 36" (914)	12" (305) / 36" (914)	20" (508) / 36" (914)	24" (610) / 36" (914)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - FREE JET THROW							
	WxH	CFM	NC (< 25)			NC (25 - 40)		
			DEFLECTION	DEFLECTION	DEFLECTION	CFM	DEFLECTION	DEFLECTION
		0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)		0° THROW (ft)	22.5° THROW (ft)	45° THROW (ft)
18"x3"	63 - 176	10 - 17	8 - 13	4 - 8	183 - 290	18 - 22	14 - 17	8 - 10
10"x4"	63 - 141	10 - 15	8 - 12	5 - 7	147 - 233	16 - 20	12 - 15	7 - 19
12"x4"	51 - 167	8 - 17	6 - 13	4 - 8	173 - 276	17 - 22	13 - 17	8 - 10
10"x6"	72 - 213	10 - 19	8 - 15	4 - 9	221 - 352	19 - 24	15 - 19	9 - 11
12"x6"	90 - 252	11 - 21	9 - 16	5 - 9	262 - 417	21 - 27	16 - 21	9 - 12
14"x6"	97 - 290	11 - 22	9 - 17	5 - 10	300 - 480	23 - 28	17 - 22	10 - 13
16"x6"	117 - 328	13 - 24	10 - 18	6 - 11	340 - 542	24 - 30	19 - 23	11 - 14
18"x6"	125 - 365	13 - 25	10 - 19	6 - 11	377 - 603	25 - 32	20 - 35	11 - 14
12"x8"	108 - 333	12 - 24	9 - 18	5 - 11	346 - 551	12 - 31	10 - 24	6 - 14
14"x8"	133 - 384	13 - 25	10 - 20	6 - 11	398 - 634	36 - 33	20 - 25	12 - 15
18"x8"	159 - 481	14 - 29	11 - 22	6 - 13	499 - 796	29 - 37	23 - 28	13 - 17
20"x8"	194 - 529	16 - 30	12 - 23	7 - 13	548 - 875	30 - 38	24 - 30	14 - 17

SEE BACK SUPPLEMENT FOR DESIGN INFO

Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5DMGPR - Perforated spiral duct supply grille with end caps curved to fit a specific duct diameter

FEATURES

- All aluminum construction
- Perforated face - 5/32" holes on 3/16" centers (63% free area)
- Ideal choice for exposed duct ceiling applications

GRILLE SIZE

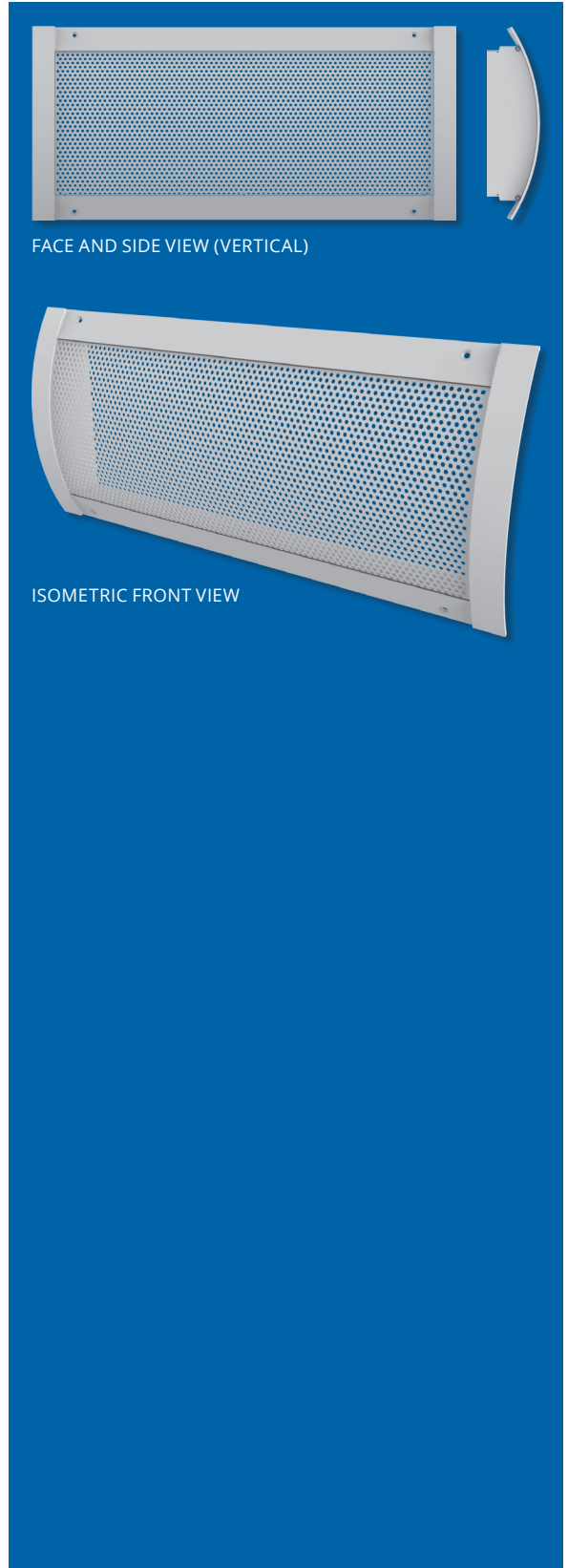
- Width: 10" - 48" (1" increments)
 - Height
- | Min Width | Duct Diameter |
|-----------|---------------|
| 3" | 6" - 36" |
| 4" | 6" - 36" |
| 6" | 8" - 36" |
| 8" | 10" - 36" |
| 10" | 12" - 36" |
| 12" | 14" - 36" |
- Duct diameter available in 2" increments

COMPATIBLE OPTIONS AND ACCESSORIES

- Damper/Extractor ¹

NOTES:

¹ Damper/Extractor must be ordered with the product; cannot be retrofitted.

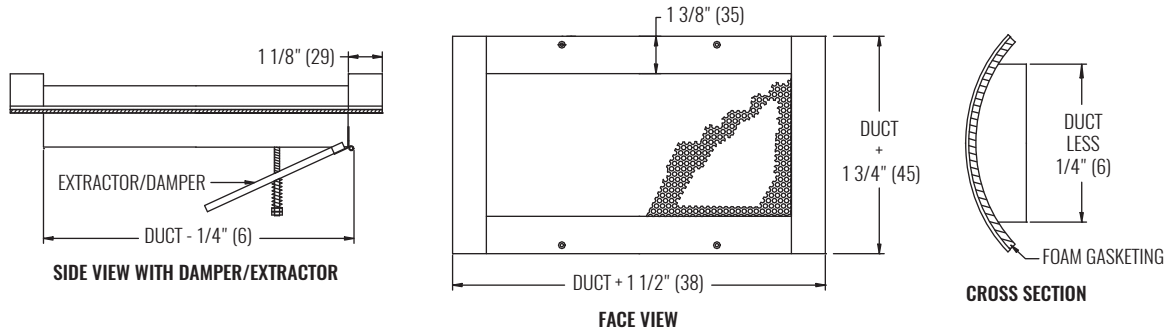


5DMGPR

Spiral Duct Grille, Perforated, Radius Endcap



DIMENSIONAL DATA



AVAILABLE SIZES AND MINIMUM DUCT DIAMETER

DESCRIPTION	HEIGHT					
	3" (76)	4" (102)	6" (152)	8" (203)	10" (254)	12" (305)
WIDTH MIN / MAX	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	12" (305) / 48" (1219)
DUCT DIAMETER MIN / MAX	6" (152) / 36" (914)	6" (152) / 36" (914)	8" (203) / 36" (914)	10" (254) / 36" (914)	12" (305) / 36" (914)	14" (356) / 36" (914)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - FREE JET THROW			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
10"x4"	63 - 230	9 - 24	269 - 639	18 - 28
12"x4"	76 - 279	7 - 18	299 - 735	19 - 30
10"x6"	101 - 342	8 - 20	366 - 902	21 - 33
14"x6"	145 - 444	10 - 23	474 - 1169	24 - 38
16"x6"	171 - 491	11 - 24	525 - 1293	25 - 40
12"x8"	174 - 498	10 - 25	532 - 1311	25 - 40
14"x8"	222 - 560	13 - 26	598 - 1474	27 - 42
18"x8"	261 - 677	14 - 29	723 - 1783	30 - 46
20"x8"	291 - 732	14 - 30	783 - 1929	31 - 48
20"x10"	349 - 873	16 - 32	931 - 2300	34 - 53
32"x12"	475 - 1425	15 - 42	1521 - 3753	43 - 67
36"x12"	515 - 1554	15 - 43	1659 - 4091	45 - 70

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5DMGPU - Perforated spiral duct supply grille with universal end caps to accommodate multiple duct diameters

FEATURES

- All aluminum construction
- Perforated face - 5/32" holes on 3/16" centers (63% free area)
- Ideal choice for exposed duct ceiling applications

GRILLE SIZE

- Width: 10" - 48" (1" increments)
- Height Min Width Duct Diameter

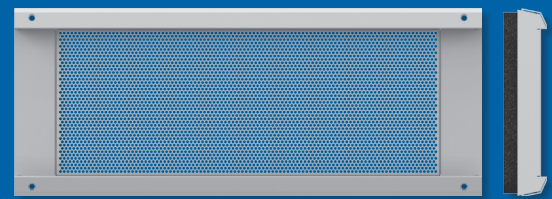
3"	10"	6" - 36"
4"	10"	10" - 36"
6"	10"	12" - 36"
8"	14"	20" - 36"
10"	16"	24" - 36"
- Duct diameter available in 2" increments

COMPATIBLE OPTIONS AND ACCESSORIES

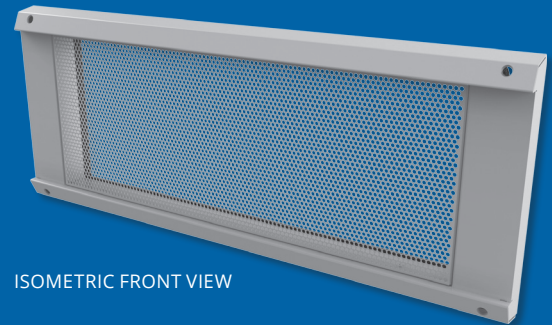
- Damper/Extractor ¹

NOTES:

¹ Damper/Extractor must be ordered with the product; cannot be retrofitted.



FACE AND SIDE VIEW (HORIZONTAL)



ISOMETRIC FRONT VIEW

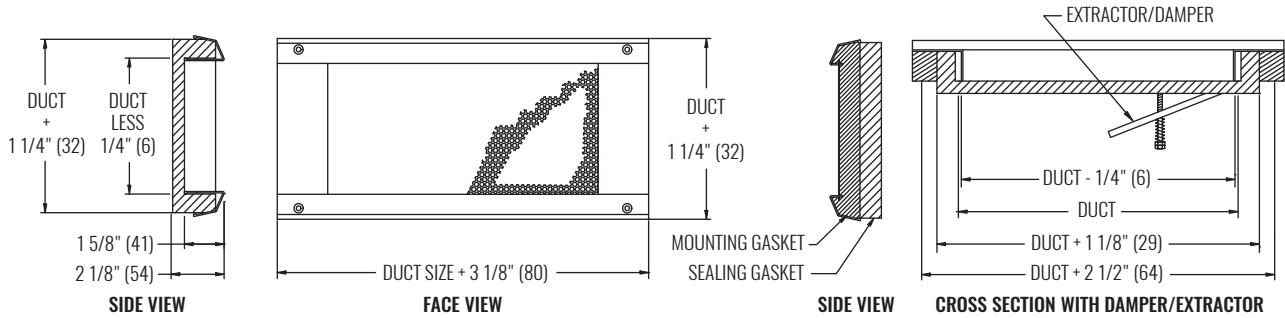


5DMGPU

Spiral Duct Grille, Perforated, Universal Endcap



DIMENSIONAL DATA



AVAILABLE SIZES AND MINIMUM DUCT DIAMETER

DESCRIPTION	HEIGHT				
	3" (76)	4" (102)	6" (152)	8" (203)	10" (254)
WIDTH MIN / MAX	10" (254) / 48" (1219)	10" (254) / 48" (1219)	10" (254) / 48" (1219)	14" (356) / 48" (1219)	16" (406) / 48" (1219)
DUCT DIAMETER MIN / MAX	6" (152) / 36" (914)	10" (254) / 36" (914)	12" (305) / 36" (914)	20" (508) / 36" (914)	24" (610) / 36" (914)

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE - FREE JET THROW			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
10"x4"	63 - 230	9 - 24	269 - 639	18 - 28
12"x4"	76 - 279	7 - 18	299 - 735	19 - 30
10"x6"	101 - 342	8 - 20	366 - 902	21 - 33
14"x6"	145 - 444	10 - 23	474 - 1169	24 - 38
16"x6"	171 - 491	11 - 24	525 - 1293	25 - 40
12"x8"	174 - 498	10 - 25	532 - 1311	25 - 40
14"x8"	222 - 560	13 - 26	598 - 1474	27 - 42
18"x8"	261 - 677	14 - 29	723 - 1783	30 - 46
20"x8"	291 - 732	14 - 30	783 - 1929	31 - 48
20"x10"	349 - 873	16 - 32	931 - 2300	34 - 53
32"x12"	475 - 1425	15 - 42	1521 - 3753	43 - 67
36"x12"	515 - 1554	15 - 43	1659 - 4091	45 - 70

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- DMD - Duct mounted drum louver

FEATURES

- 2" louver vane spacing
- Mounts directly to spiral or round duct
- Easy finger tip adjustment
- Heavy gauge aluminum construction
- Foam gasket to seal unit to duct
- Ideal for exposed ceiling installations

GRILLE SIZE

- Width: 12", 18", 24", 30", 36", 42", 48", 60"
- Height: 4" - 10" (2" increments) ²
- Duct Diameter: 8" - 48" (2" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- Damper/Extractor ¹

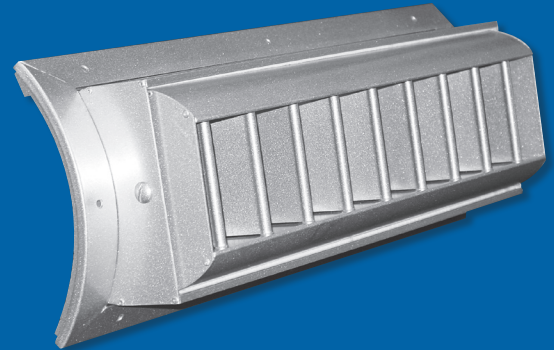
NOTES: See website for complete available configuration combinations.

¹ Damper/extractor must be ordered with the product; cannot be retrofitted.

² Minimum duct diameter is 4" larger than nominal height.



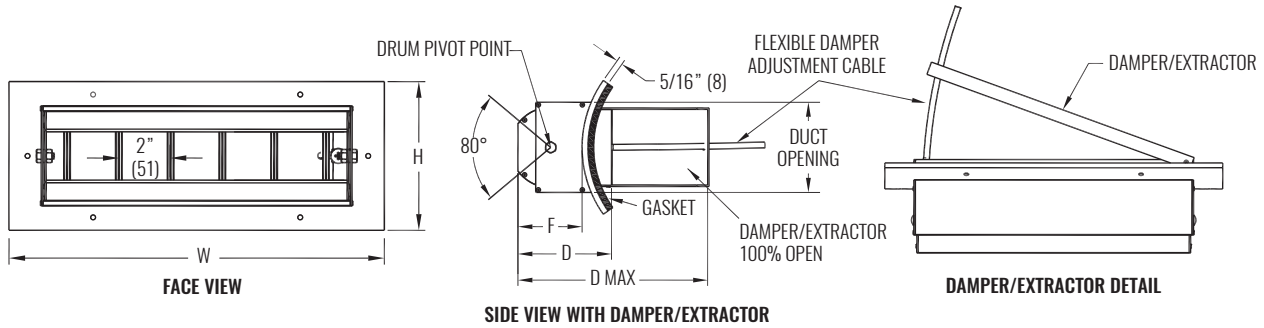
FACE VIEW



ISOMETRIC VIEW



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE NOMINAL W x H	PERFORMANCE - FREE JET THROW				DIMENSIONS							
	NC (< 25)		NC (25 - 40)		W	H	E	F	D	D MAX	MIN ROUND DUCT	
	CFM	THROW (ft)	CFM	THROW (ft)								
12"x4"	165 - 241	21 - 28	248 - 363	29 - 34	14 3/8" (365)	6 1/2" (165)	2" (51)	3 1/8" (79)	4" (102)	17 1/4" (438)	8" (203)	
18"x4"	335 - 488	33 - 40	514 - 738	41 - 49	20 3/8" (518)	8 1/2" (216)	3 1/2" (89)	3 7/8" (98)	4 3/4" (121)	18" (457)	10" (254)	
24"x4"	300 - 440	31 - 38	463 - 668	39 - 47	26 3/8" (670)	6 1/2" (165)	2" (51)	3 1/8" (79)	4" (102)	17 1/4" (438)	8" (203)	
12"x6"	240 - 340	28 - 33	360 - 520	34 - 41	14 3/8" (365)	8 1/2" (216)	3 1/2" (89)	3 7/8" (98)	4 3/4" (121)	18" (457)	10" (254)	
24"x6"	435 - 623	38 - 45	660 - 945	47 - 56	26 3/8" (670)	8 1/2" (216)	3 1/2" (89)	3 7/8" (98)	4 3/4" (121)	18" (457)	10" (254)	
30"x6"	530 - 755	41 - 50	800 - 1160	51 - 62	32 3/8" (822)	8 1/2" (216)	3 1/2" (89)	3 7/8" (98)	4 3/4" (121)	18" (457)	10" (254)	
12"x8"	305 - 423	31 - 38	468 - 666	39 - 46	14 3/8" (365)	10 1/2" (267)	5" (127)	4 1/2" (114)	5 1/2" (140)	18 3/4" (476)	12" (305)	
24"x8"	560 - 798	43 - 51	845 - 1225	52 - 63	26 3/8" (670)	10 1/2" (267)	5" (127)	4 1/2" (114)	5 1/2" (140)	18 3/4" (476)	12" (305)	
36"x8"	795 - 1139	51 - 61	1208 - 1758	63 - 76	38 3/8" (975)	10 1/2" (267)	5" (127)	4 1/2" (114)	5 1/2" (140)	18 3/4" (476)	12" (305)	
18"x10"	542 - 767	42 - 50	812 - 1155	51 - 61	20 3/8" (518)	12 1/2" (318)	6 5/8" (168)	5 1/4" (133)	6 1/4" (159)	19 1/2" (495)	14" (356)	
24"x10"	697 - 986	48 - 57	1038 - 1485	58 - 70	26 3/8" (670)	12 1/2" (318)	6 5/8" (168)	5 1/4" (133)	6 1/4" (159)	19 1/2" (495)	14" (356)	
30"x10"	846 - 1204	52 - 63	1276 - 1819	65 - 76	32 3/8" (822)	12 1/2" (318)	6 5/8" (168)	5 1/4" (133)	6 1/4" (159)	19 1/2" (495)	14" (356)	

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 600 - Sightproof transfer grille with 1 1/4" steel frame
- 600A - Sightproof transfer grille with 1 1/4" steel frame on both sides, adjusting to fit door thickness between 1 3/8" and 2 1/4"
- 600C - Sightproof single core and channel frame with 3/16" margin
- 600F - Auxiliary frame only for 600 and 600A

FEATURES

- Steel construction
- Ensures privacy with sightproof blades
- Ideal choice for wall or door air transfer from room to room

GRILLE SIZE

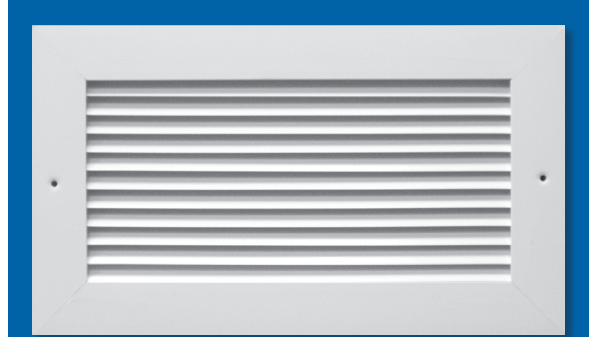
- Width: 6" - 30" (1" increments)
- Height: 4" - 30" (1" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes ¹

NOTES:

¹ Fastening method does not apply to model 600C grille.

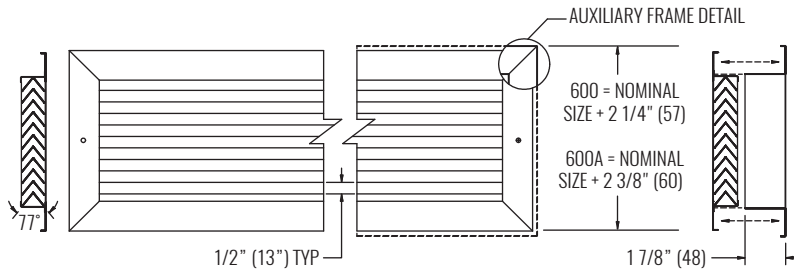


600 SERIES

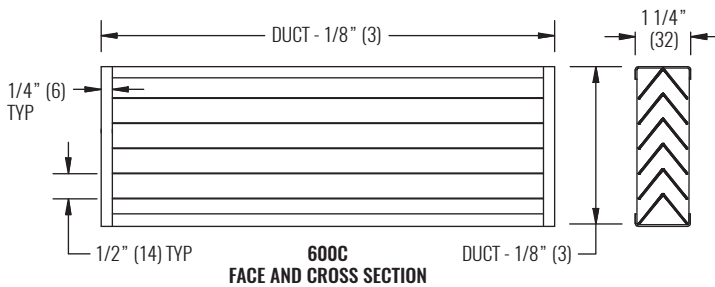
Transfer Grilles, Sightproof, Steel



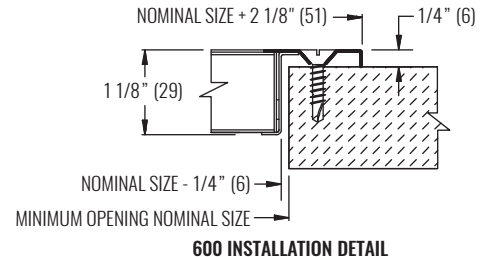
DIMENSIONAL DATA



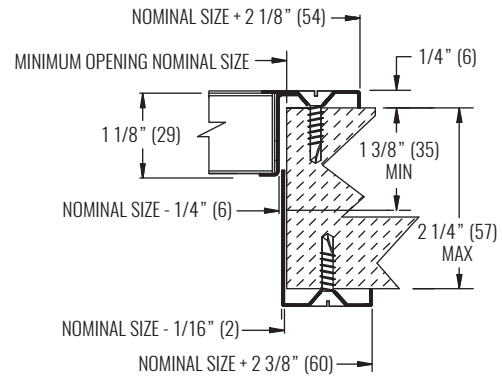
600 FACE AND CROSS SECTIONS **600A**



600C FACE AND CROSS SECTION



600 INSTALLATION DETAIL



600A INSTALLATION DETAIL

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)
NOMINAL SIZE	CFM	CFM
6"x6"	34 - 60	64 - 122
12"x10"	89 - 172	181 - 352
12"x12"	141 - 201	211 - 411
18"x8"	141 - 199	209 - 407
14"x14"	146 - 260	274 - 533
18"x12"	146 - 282	296 - 577
24"x10"	165 - 306	322 - 626
16"x16"	178 - 325	342 - 666
24"x12"	178 - 357	375 - 731
18"x18"	207 - 395	416 - 810
20"x20"	309 - 471	495 - 964
24"x24"	375 - 635	667 - 1300

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 5600 - Aluminum, sightproof grille with 1 1/2" aluminum frame
- 5600A - Aluminum, sightproof grille with 1 1/2" aluminum frame on both sides, adjusting to fit a door thickness between 1 3/8" and 2 1/4"
- 5600F - Auxiliary frame only for 5600 and 5600A

FEATURES

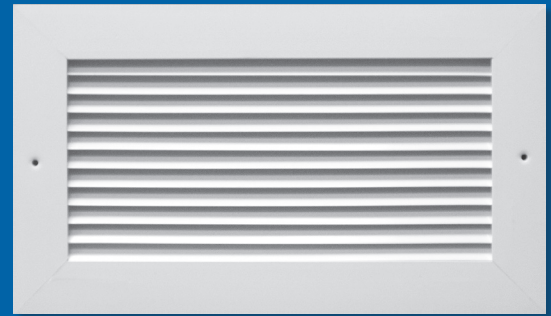
- Aluminum construction
- Ensures privacy with sightproof blades
- Ideal choice for wall or door air transfer from room to room

GRILLE SIZE

- Width: 6" - 30" (1" increments)
- Height: 4" - 30" (1" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes

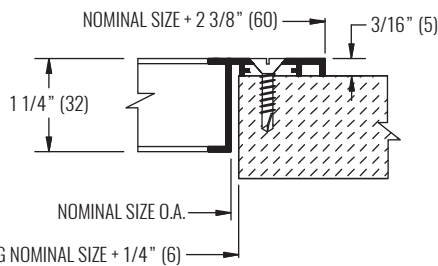
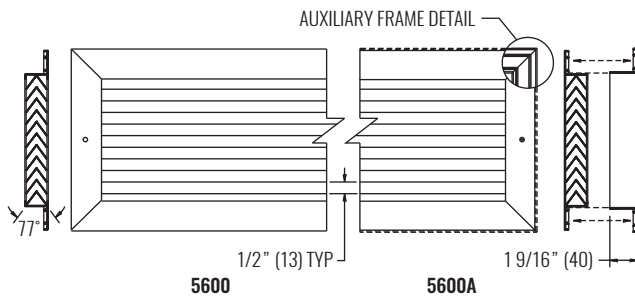
**WEB SEARCH:** 5600 or 5600A

5600 / 5600A

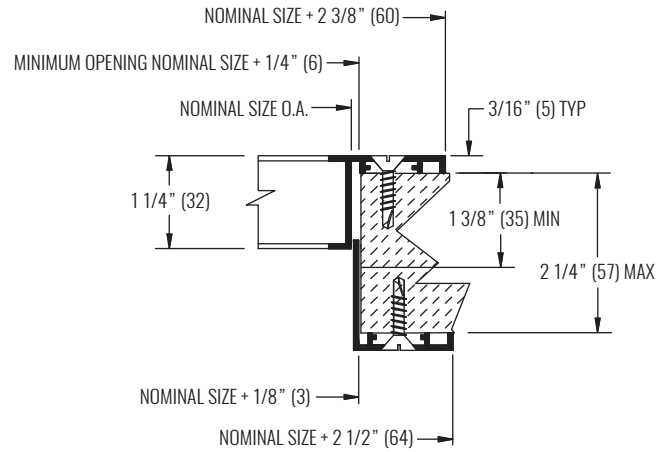
Transfer Grilles, Sightproof, Aluminum



DIMENSIONAL DATA



5600 INSTALLATION DETAIL



5600A INSTALLATION DETAIL

NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)
NOMINAL	CFM	CFM
6"x6"	34 - 60	64 - 122
12"x10"	89 - 172	181 - 352
12"x12"	141 - 201	211 - 411
18"x8"	141 - 199	209 - 407
14"x14"	146 - 260	274 - 533
18"x12"	146 - 282	296 - 577
24"x10"	165 - 306	322 - 626
16"x16"	178 - 325	342 - 666
24"x12"	178 - 357	375 - 731
18"x18"	207 - 395	416 - 810
20"x20"	309 - 471	495 - 964
24"x24"	375 - 635	667 - 1300

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Dimensions in parentheses are millimeters (mm). Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 9180 - Stainless steel, curved blade supply grille

FEATURES

- 304 stainless steel construction (316 optional)
- 1, 2, 3, and 4-way deflection
- Adjustable blades
- Excellent choice for residential and commercial buildings where different throw characteristics are needed for the same sized grille

GRILLE SIZE

- Width: 4" - 48" (1" increments)
- Height: 4" - 48" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Countersunk screw holes ¹
- 9OBD - Stainless steel OBD welded to unit, face adjustable
- 98PF - Stainless steel plaster frame
- 9SRA - Stainless steel square to round adapter

NOTES:

- ¹ Unit shipped with #6x1 1/4" stainless steel sheet metal screws.

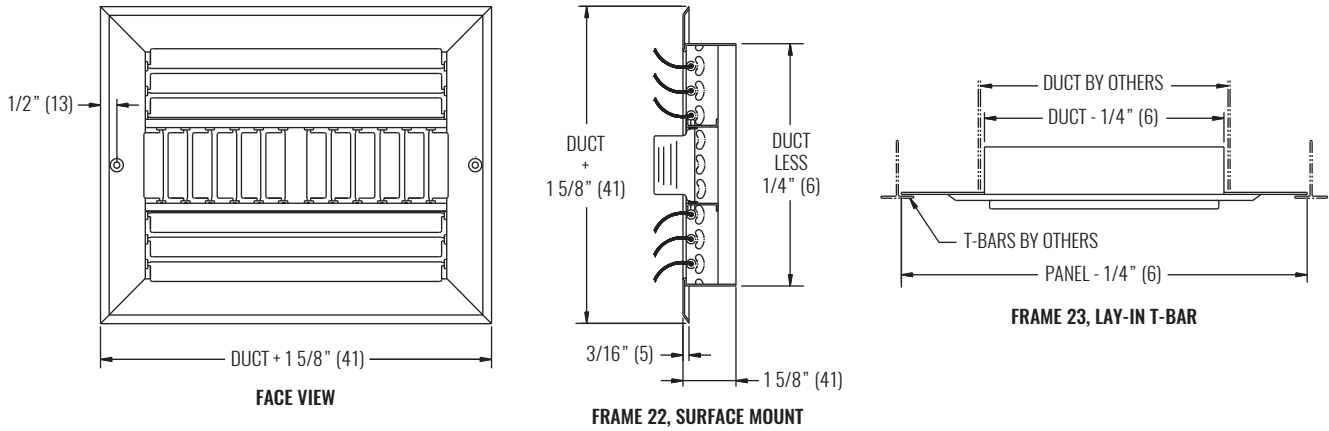


9180

Stainless Steel Grille, Curved Blade



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE									
	NOMINAL SIZE	NC (< 25)				NC (25 - 40)				
CFM		1-WAY THROW (ft)	2-WAY THROW (ft)	3-WAY THROW (ft)	4-WAY THROW (ft)	CFM	1-WAY THROW (ft)	2-WAY THROW (ft)	2-WAY THROW (ft)	3-WAY THROW (ft)
8"x4"	44 - 82	13 - 18	14 - 16	9 - 14	9 - 13	86 - 147	19 - 32	17 - 28	14 - 24	13 - 23
6"x6"	50 - 94	13 - 24	11 - 21	10 - 18	9 - 17	99 - 168	25 - 37	22 - 35	19 - 31	18 - 27
8"x6"	75 - 125	13 - 21	11 - 18	9 - 16	9 - 15	131 - 224	22 - 38	19 - 33	17 - 28	15 - 26
10"x6"	83 - 155	14 - 23	12 - 20	11 - 17	10 - 16	162 - 278	24 - 41	21 - 36	18 - 31	17 - 29
8"x8"	89 - 166	14 - 27	13 - 24	11 - 20	10 - 19	174 - 298	28 - 48	25 - 42	21 - 36	20 - 34
12"x6"	100 - 184	15 - 24	13 - 21	11 - 18	10 - 17	193 - 330	25 - 43	22 - 38	19 - 33	18 - 30
12"x8"	133 - 245	16 - 27	14 - 24	12 - 20	11 - 19	256 - 439	28 - 48	25 - 42	21 - 36	20 - 34
10"x10"	139 - 256	16 - 29	14 - 26	12 - 22	11 - 21	267 - 458	31 - 53	27 - 46	23 - 40	22 - 37
12"x12"	200 - 361	18 - 32	15 - 28	13 - 24	12 - 22	376 - 646	33 - 57	29 - 49	25 - 42	23 - 40
14"x14"	272 - 482	19 - 34	17 - 29	14 - 25	13 - 23	502 - 862	35 - 60	31 - 53	26 - 45	24 - 42
16"x16"	356 - 617	20 - 35	18 - 31	15 - 26	14 - 25	643 - 1104	37 - 63	32 - 55	28 - 47	26 - 44
18"x18"	450 - 767	22 - 37	19 - 32	16 - 28	15 - 26	798 - 1372	38 - 66	34 - 58	29 - 50	27 - 46

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10^{-12} Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 980 - Stainless steel, single deflection supply grille

FEATURES

- 304 stainless steel construction (316 optional)
- Sturdy deflection blades spaced on 3/4" centers
- Adjustable blades
- Horizontal or vertical blades (H or V)

GRILLE SIZE

- Width: 4" - 48" (1" increments)
- Height: 4" - 60" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

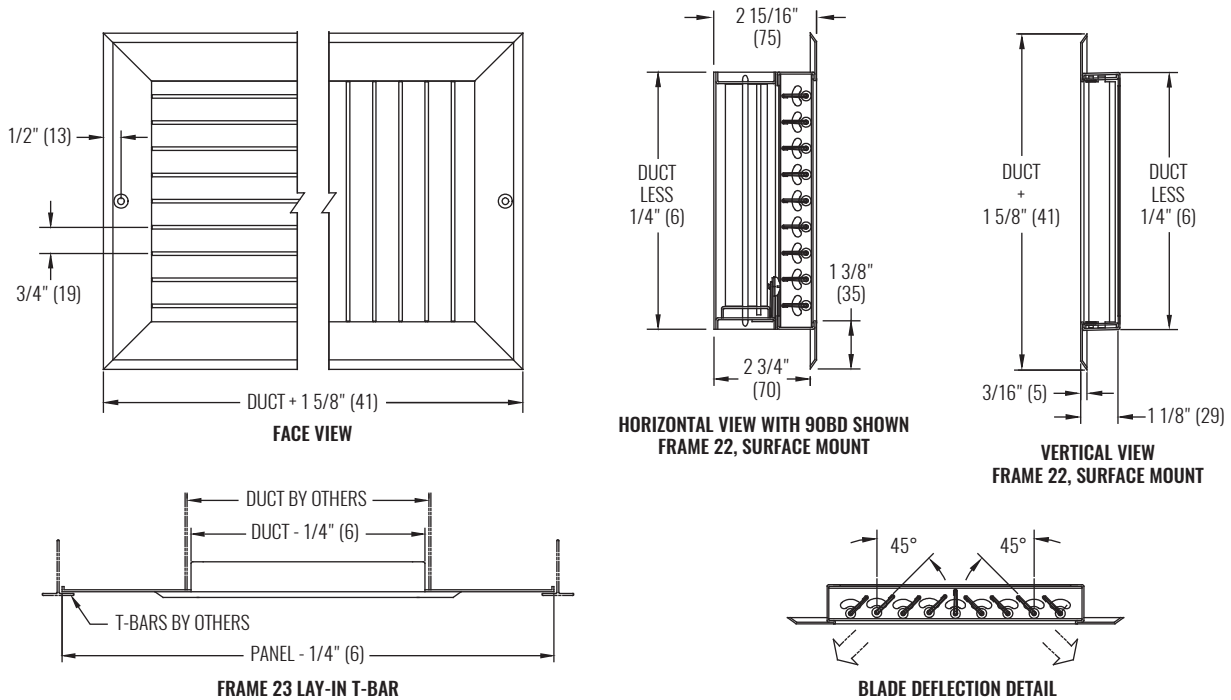
- Countersunk screw holes ¹
- 9OBD - Stainless steel OBD welded to unit, face adjustable
- 98PF - Stainless steel plaster frame
- 9SRA - Stainless steel square to round adapter

NOTES:

- ¹ Unit shipped with #6x1 1/4" stainless steel sheet metal screws.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE							
	NC (< 25)				NC (25 - 40)			
NOMINAL SIZE	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 9880 - Stainless steel, double deflection supply grille

FEATURES

- 304 stainless steel construction (316 optional)
- Sturdy front and rear deflection blades spaced on 3/4" centers
- Adjustable blades
- Horizontal or vertical front blades (H or V)

GRILLE SIZE

- Width: 4" - 48" (1" increments)
- Height: 4" - 48" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

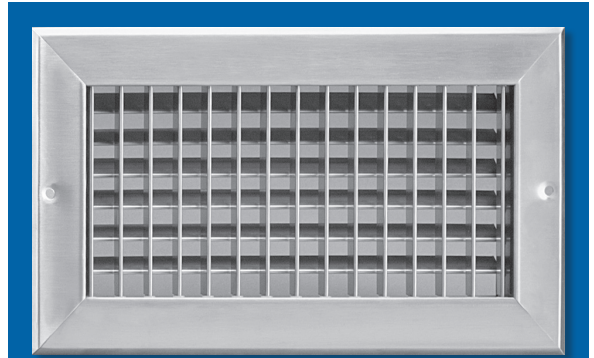
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

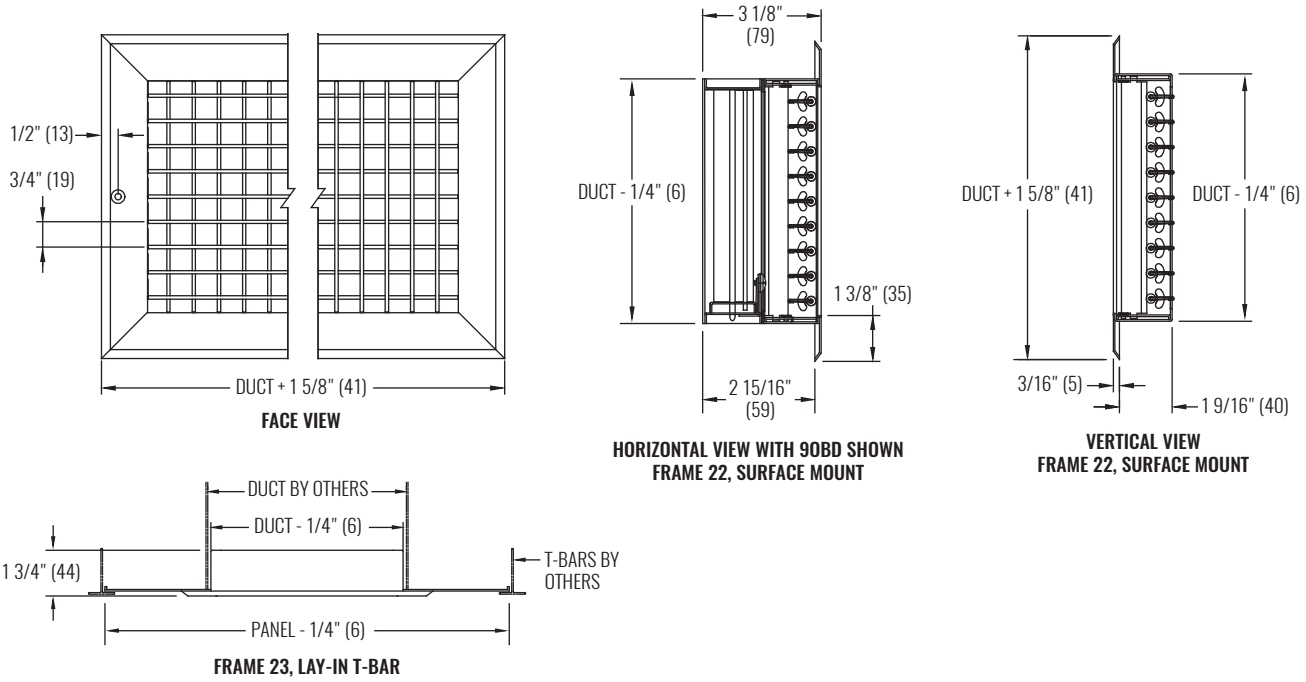
- Countersunk screw holes ¹
- 9OBD - Stainless steel OBD welded to unit, face adjustable
- 98PF - Stainless steel plaster frame
- 9SRA - Stainless steel square to round adapter

NOTES:

- ¹ Unit shipped with #6x1 1/4" stainless steel sheet metal screws.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE							
	NC (< 25)				NC (25 - 40)			
NOMINAL W x H	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)	CFM	0° DEFL THROW (ft)	22.5° DEFL THROW (ft)	45° DEFL THROW (ft)
8"x4"	77 - 135	16 - 21	13 - 17	7 - 10	141 - 223	22 - 27	17 - 21	10 - 12
6"x6"	77 - 155	16 - 23	12 - 18	7 - 10	161 - 256	23 - 29	18 - 23	10 - 13
10"x4"	77 - 167	16 - 24	13 - 18	7 - 11	173 - 276	24 - 31	19 - 24	11 - 14
8"x6"	106 - 204	19 - 26	15 - 20	9 - 12	212 - 338	27 - 34	21 - 26	12 - 15
12"x4"	106 - 197	19 - 26	15 - 20	9 - 12	205 - 326	26 - 33	20 - 26	12 - 15
10"x6"	135 - 252	21 - 29	17 - 23	10 - 13	262 - 417	30 - 38	23 - 29	13 - 17
12"x6"	164 - 298	24 - 32	18 - 25	11 - 14	309 - 493	32 - 41	25 - 32	15 - 18
14"x6"	193 - 343	26 - 34	20 - 26	12 - 15	356 - 568	35 - 44	27 - 34	16 - 20
12"x8"	227 - 394	28 - 36	21 - 28	12 - 16	408 - 651	37 - 47	29 - 36	17 - 21
18"x6"	252 - 431	29 - 38	23 - 30	13 - 17	447 - 713	39 - 49	30 - 38	17 - 22
14"x8"	252 - 454	29 - 39	23 - 30	13 - 18	470 - 750	40 - 50	31 - 39	18 - 23
12"x12"	264 - 575	30 - 44	23 - 34	13 - 20	596 - 951	45 - 57	35 - 44	20 - 26

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 9S80 - Stainless steel, fixed blade return

FEATURES

- 304 stainless steel construction (316 optional)
- Sturdy deflection blades spaced on 3/4" centers
- Horizontal or vertical blades at 45° deflection (H or V)
- Horizontal or vertical blades at 0° deflection (HZ or VZ)

GRILLE SIZE

- Width: 4" - 48" (1" increments)
- Height: 4" - 60" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

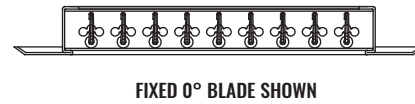
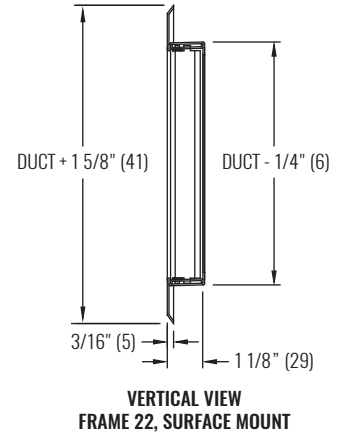
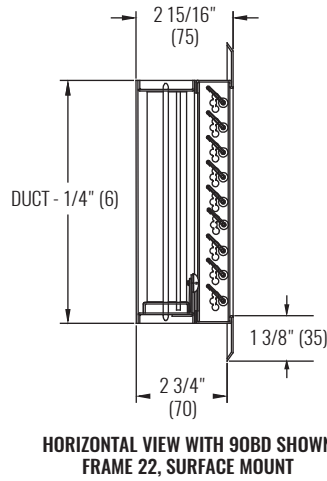
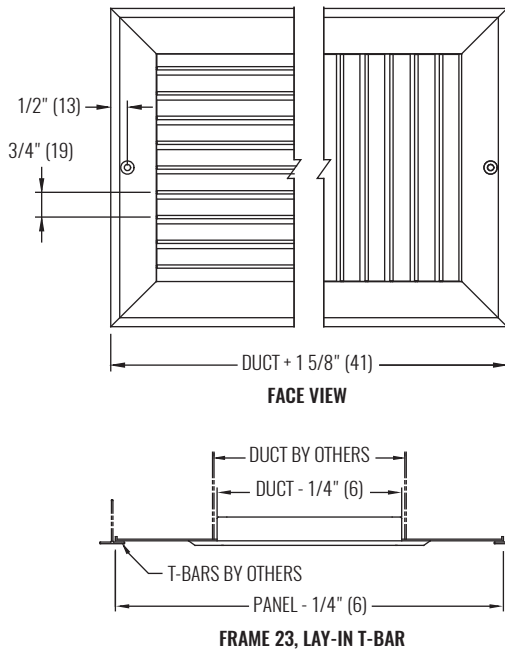
- Countersunk screw holes ¹
- 9OBD - Stainless steel OBD welded to unit, face adjustable
- 98PF - Stainless steel plaster frame
- 9SRA - Stainless steel square to round adapter

NOTES:

- ¹ Unit shipped with #6x1 1/4" stainless steel sheet metal screws.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE			
	0° DEFLECTION		45° DEFLECTION	
	NC (< 25)	NC (25 - 40)	NC (< 25)	NC (25 - 40)
NOMINAL SIZE	CFM	CFM	CFM	CFM
6"x6"	75 - 200	231 - 325	25 - 100	119 - 175
8"x8"	75 - 338	403 - 600	25 - 163	197 - 300
10"x10"	125 - 513	609 - 900	50 - 250	300 - 450
12"x6"	100 - 375	44 - 650	25 - 175	213 - 325
12"x8"	150 - 500	588 - 850	50 - 230	245 - 435
12"x12"	200 - 725	856 - 1250	50 - 338	409 - 625
14"x14"	250 - 950	1125 - 1650	75 - 435	460 - 820
16"x16"	250 - 1175	1406 - 2100	75 - 545	575 - 1050
20"x20"	500 - 1800	2125 - 3100	100 - 795	835 - 1530
22"x10"	300 - 1050	1238 - 1800	75 - 488	591 - 900
22"x22"	500 - 2100	2500 - 3700	100 - 925	1000 - 1800
24"x12"	350 - 1325	1569 - 2300	75 - 600	650 - 1150

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 9S80HF - Stainless steel, hinge face, fixed blade return

FEATURES

- 304 stainless steel construction (316 optional)
- Sturdy deflection blades spaced on 3/4" centers
- Horizontal or vertical blades at 45° deflection (H or V)
- Horizontal or vertical blades at 0° deflection (HZ or VZ)

GRILLE SIZE

- Width: 6" - 48" (1" increments)
- Height: 6" - 48" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Countersunk screw holes ¹
- Filter clips for filter mounting
- 9OBD - Stainless steel OBD welded to unit, face adjustable
- 9SRA - Stainless steel square to round adapter

NOTES: Maximum single size section is 36"x48". #8 1 1/2" quarter turn captive machine screws provided for hinged face closure.

¹ #6 1 1/4" stainless steel sheet metal screws provided for screw holes.

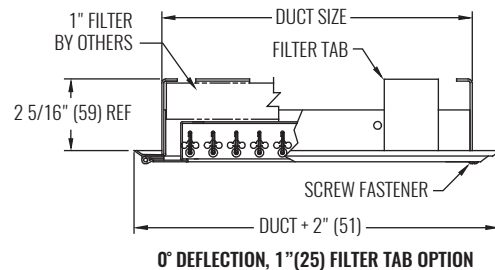
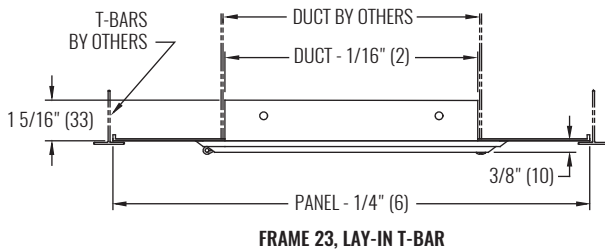
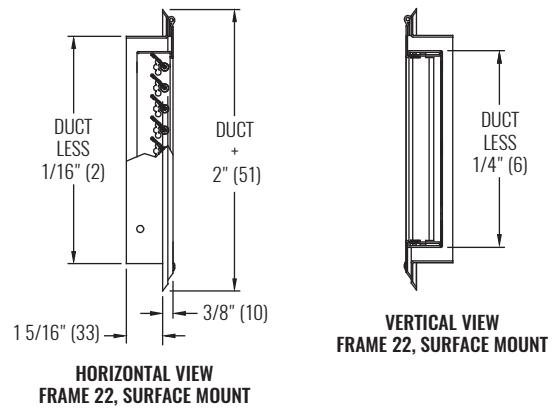
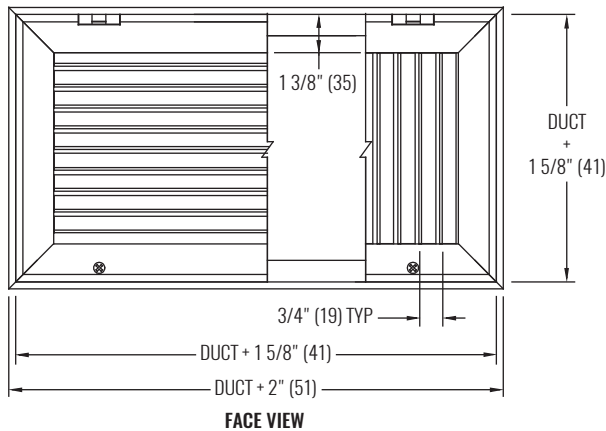


9S80HF

Stainless Steel Return, Fixed Blade, Hinged Face



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE			
	0° DEFLECTION		45° DEFLECTION	
	NC (< 25)	NC (25 - 40)	NC (< 25)	NC (25 - 40)
NOMINAL SIZE	CFM	CFM	CFM	CFM
6"x6"	75 - 200	231 - 325	25 - 100	119 - 175
8"x8"	75 - 338	403 - 600	25 - 163	197 - 300
10"x10"	125 - 513	609 - 900	50 - 250	300 - 450
12"x6"	100 - 375	44 - 650	25 - 175	213 - 325
12"x8"	150 - 500	588 - 850	50 - 230	245 - 435
12"x12"	200 - 725	856 - 1250	50 - 338	409 - 625
14"x14"	250 - 950	1125 - 1650	75 - 435	460 - 820
16"x16"	250 - 1175	1406 - 2100	75 - 545	575 - 1050
20"x20"	500 - 1800	2125 - 3100	100 - 795	835 - 1530
22"x10"	300 - 1050	1238 - 1800	75 - 488	591 - 900
22"x22"	500 - 2100	2500 - 3700	100 - 925	1000 - 1800
24"x12"	350 - 1325	1569 - 2300	75 - 600	650 - 1150

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 9S80P - Stainless steel, perforated return

FEATURES

- 3/16" holes on 1/4" staggered centers (51% free area)
- 304 stainless steel construction (316 optional)

INLET SIZE

- Width: 4" - 48" (1" increments)
- Height: 4" - 48" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

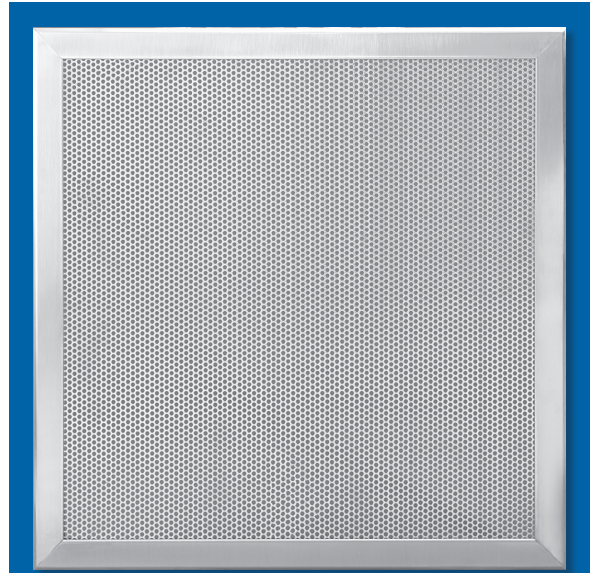
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Countersunk screw holes ¹
- 9OBD - Stainless steel OBD welded to unit, face adjustable
- 98PF - Stainless steel plaster frame
- 9SRA - Stainless steel square to round adapter

NOTES: Maximum single unit size is 48"x60".

¹ Unit shipped with #6x1 1/4" stainless steel sheet metal screws.

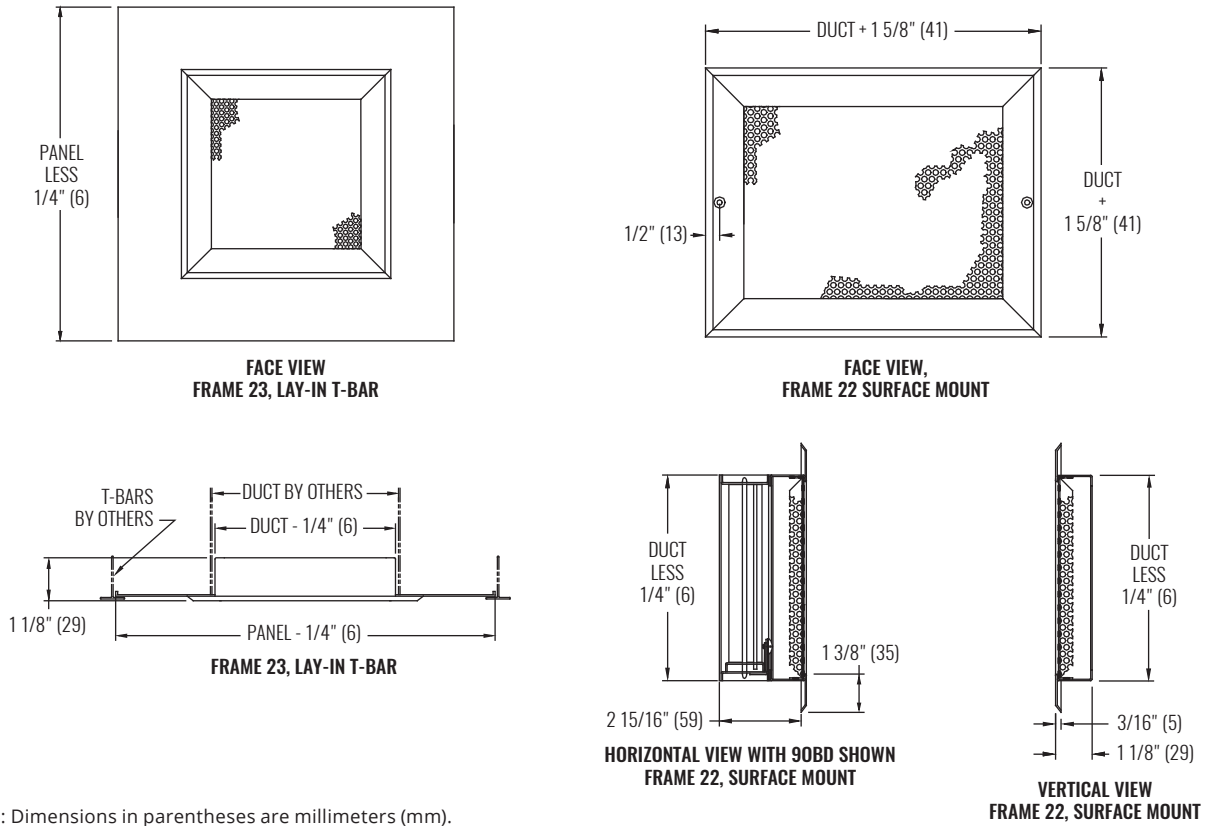


GRILLES | STAINLESS STEEL

9S80P



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE NOMINAL SIZE	PERFORMANCE	
	NC (< 25) CFM	NC (25 - 40) CFM
6"x6"	25 - 150	213 - 525
8"x8"	25 - 334	438 - 850
10"x10"	25 - 438	541 - 850
12"x12"	25 - 616	813 - 1600
14"x14"	125 - 594	828 - 2000
16"x16"	100 - 700	1000 - 2500
20"x20"	100 - 1375	1800 - 3500
22"x10"	100 - 625	888 - 2200
22"x22"	100 - 1563	2050 - 4000
24"x12"	100 - 750	1075 - 2700
30"x30"	100 - 2500	3300 - 6500
34"x22"	100 - 2163	2850 - 5600

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 91610 - Stainless steel supply or return linear bar grille with 0° or 15° blade deflection, 3/8" bar spacing, and 1/8" bar thickness

FEATURES

- 304 stainless steel construction (316 optional)
- Available with end cap or butt cut end borders
- Excellent choice for installation in soffit/sill applications where airflow is required to wash over a window in a high humidity location

GRILLE SIZE

- Length: 4" - 72" (1/16" increments)
- Width: 4" - 24" (1/4" increments)

FRAME STYLES

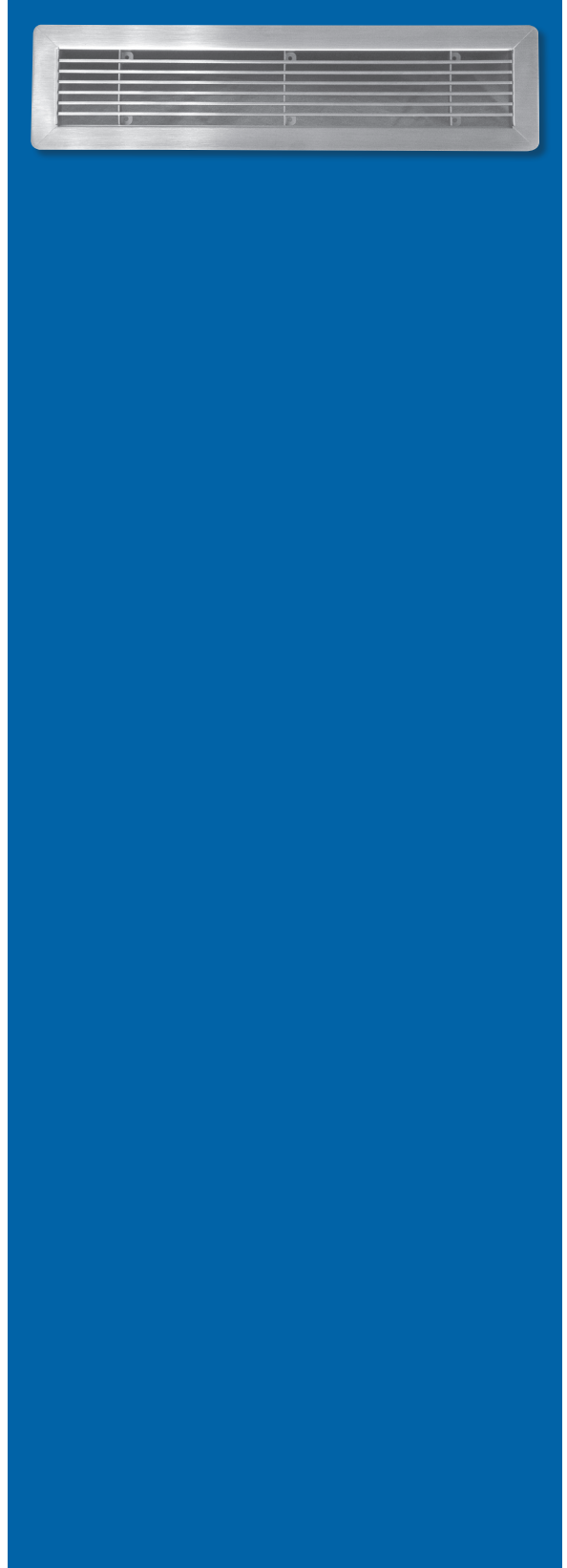
- F15 - 1 1/2" flange
- F10 - 1" flange
- F75 - 3/4" flange
- F50 - 1/2" flange
- S1 - Straight, no flange ¹

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed fastening ²
- 9OBD - Stainless steel OBD welded to unit, face adjustable ³
- BOS - Blank-off strip ⁴
- LSG - Linear straightening grid ⁴

NOTES:

- ¹ Screw hole fastening method not available with Frame S1.
- ² Unit shipped with #6x1 1/4" stainless steel sheet metal screws for screw holes.
- ³ Damper is not available with blank-off strip accessory. Damper is not available with concealed fastening.
- ⁴ Linear straightening grid not available with blank-off strip.

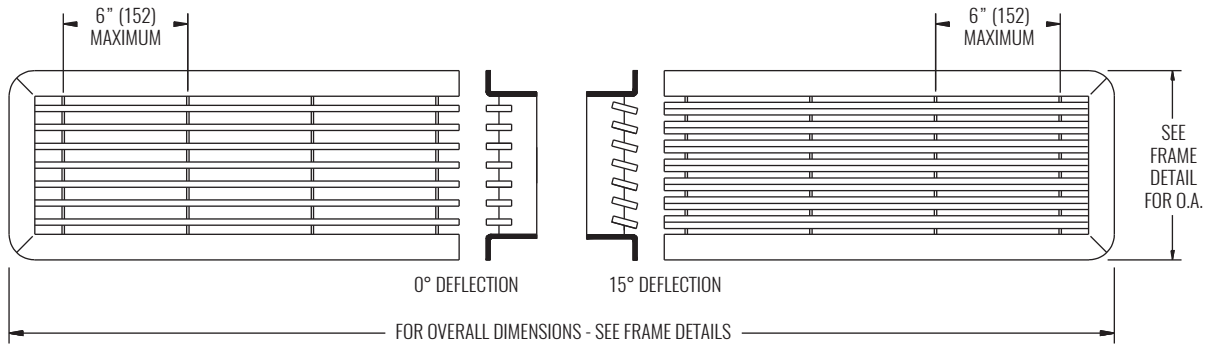


91610

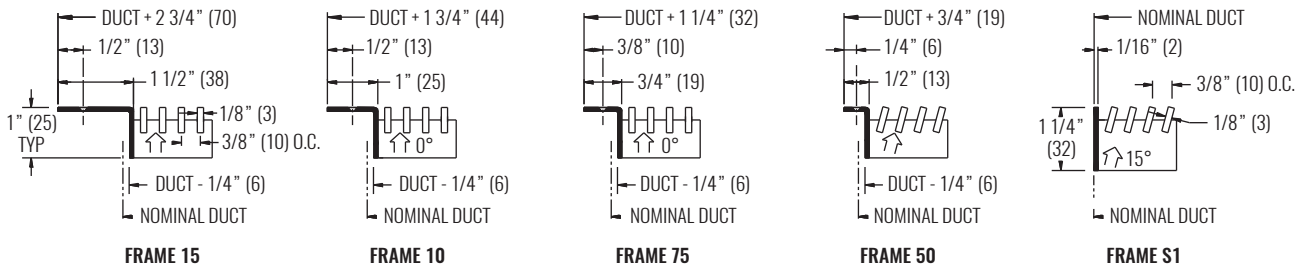
Stainless Steel, Linear Bar Grille (1/8" Bars, 3/8" Spacing)



DIMENSIONAL DATA



FACE VIEW



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE							
	0° DEFLECTION, 1/8" BARS, 1/2" BAR SPACING				15° DEFLECTION, 1/8" BARS, 1/2" BAR SPACING			
	NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)	
WIDTH	CFM	THROW (ft)	CFM	THROW (ft)	CFM	THROW (ft)	CFM	THROW (ft)
4"	67 - 200	13 - 20	267 - 350	21 - 22	67 - 200	13 - 20	267 - 350	21 - 25
8"	133 - 400	15 - 25	533 - 650	28 - 31	133 - 400	15 - 23	533 - 650	26 - 29
12"	200 - 400	18 - 25	600 - 800	30 - 33	200 - 400	17 - 23	600 - 800	28 - 31

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 91620 - Stainless steel supply or return linear bar grille with 0° or 15° blade deflection, 1/2" bar spacing, and 1/8" bar thickness

FEATURES

- 304 stainless steel construction (316 optional)
- Available with end cap or butt cut end borders
- Excellent choice for installation in soffit/sill applications where airflow is required to wash over a window in a high humidity location

GRILLE SIZE

- Length: 4" - 72" (1/16" increments)
- Width: 4" - 24" (1/4" increments)

FRAME STYLES

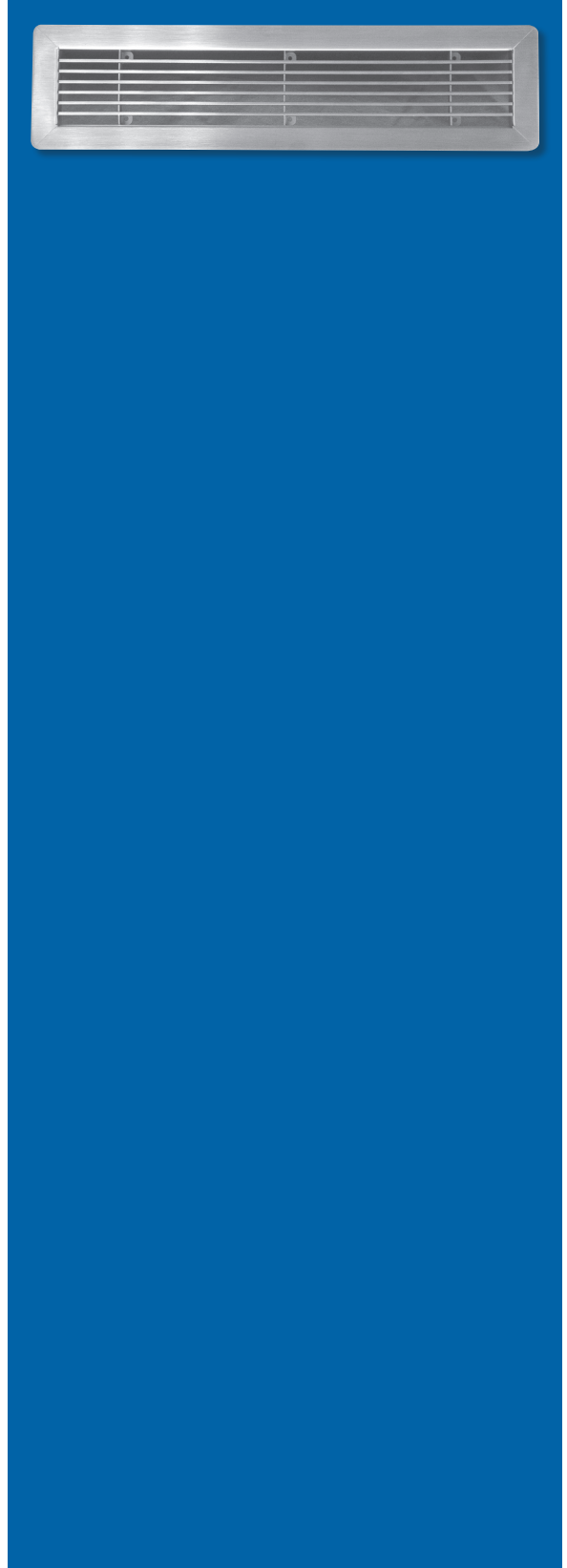
- F15 - 1 1/2" flange
- F10 - 1" flange
- F75 - 3/4" flange
- F50 - 1/2" flange
- S1 - Straight, no flange ¹

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed fastening ²
- 9OBD - Stainless steel OBD welded to unit, face adjustable ³
- BOS - Blank-off strip ⁴
- LSG - Linear straightening grid ⁴

NOTES:

- ¹ Screw hole fastening method not available with Frame S1.
- ² Unit shipped with #6x1 1/4" stainless steel sheet metal screws for screw holes.
- ³ Damper is not available with blank-off strip accessory. Damper is not available with concealed fastening.
- ⁴ Linear straightening grid not available with blank-off strip.

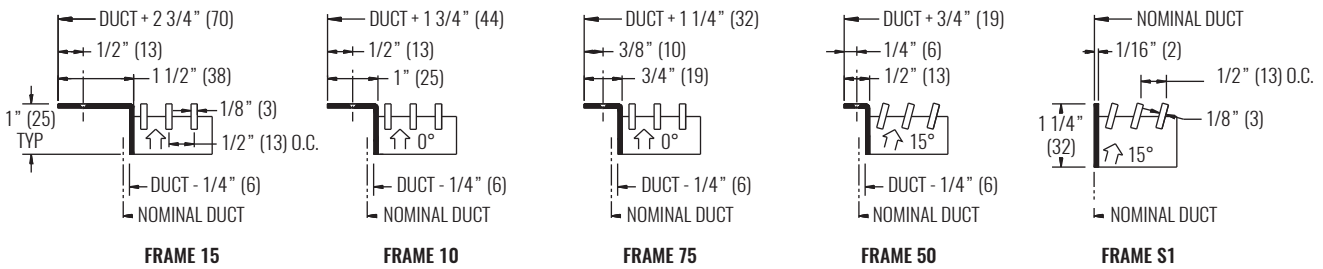
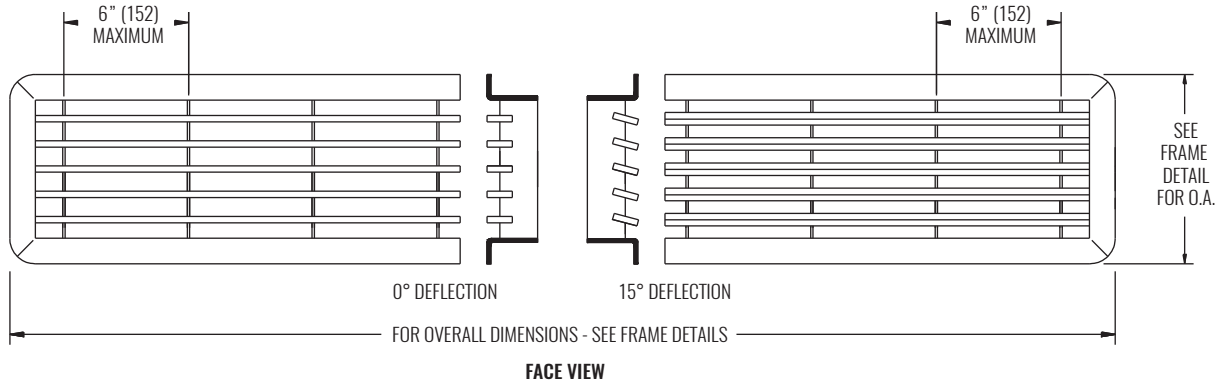


91620

Stainless Steel, Linear Bar Grille (1/8" Bars, 1/2" Spacing)



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE							
	0° DEFLECTION, 1/8" BARS, 1/2" BAR SPACING				15° DEFLECTION, 1/8" BARS, 1/2" BAR SPACING			
	NC (< 25)		NC (25 - 40)		NC (< 25)		NC (25 - 40)	
WIDTH	CFM	THROW (ft)	CFM	THROW (ft)	CFM	THROW (ft)	CFM	THROW (ft)
4"	67 - 200	13 - 20	267 - 350	21 - 22	67 - 200	13 - 20	267 - 350	21 - 25
8"	133 - 400	15 - 25	533 - 650	28 - 31	133 - 400	15 - 23	533 - 650	26 - 29
12"	200 - 400	18 - 25	600 - 800	30 - 33	200 - 400	17 - 23	600 - 800	28 - 31

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 91520 - Stainless steel supply or return linear bar grille with 0° blade deflection, 1/2" bar spacing, and 1/4" bar thickness

FEATURES

- 304 stainless steel construction (316 optional)
- Available with end cap or butt cut end borders
- Excellent choice for installation in soffit/sill applications where airflow is required to wash over a window in a high humidity location

GRILLE SIZE

- Width: 4" - 72" (1/16" increments)
- Height: 4" - 24" (1/4" increments)

FRAME STYLES

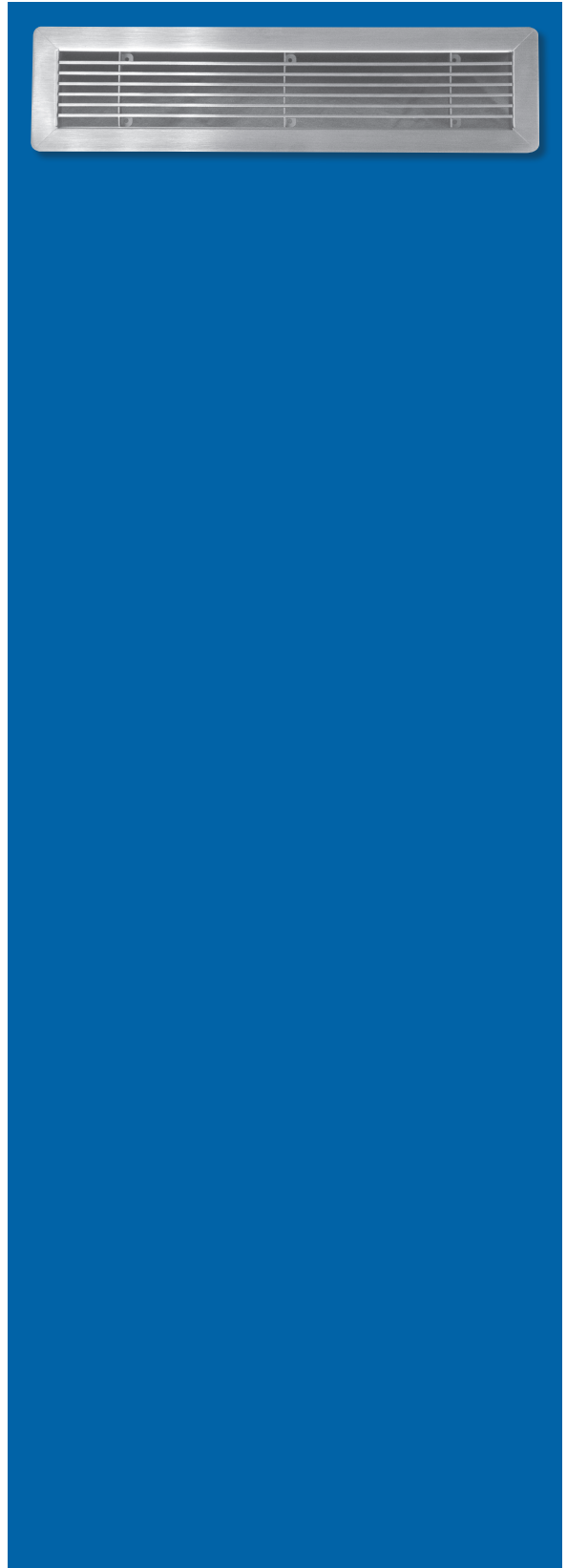
- F15 - 1 1/2" flange
- F10 - 1" flange
- F75 - 3/4" flange
- F50 - 1/2" flange
- S1 - Straight, no flange

COMPATIBLE OPTIONS AND ACCESSORIES

- Screw holes or concealed fastening ²
- 9OBD - Stainless steel OBD welded to unit, face adjustable ³
- BOS - Blank-off strip ⁴
- LSG - Linear straightening grid ⁴

NOTES:

- ¹ Screw hole fastening method not available with Frame S1.
- ² Unit shipped with #6x1 1/4" stainless steel sheet metal screws for screw holes.
- ³ Damper is not available with blank-off strip accessory. Damper is not available with concealed fastening.
- ⁴ Linear straightening grid not available with blank-off strip.

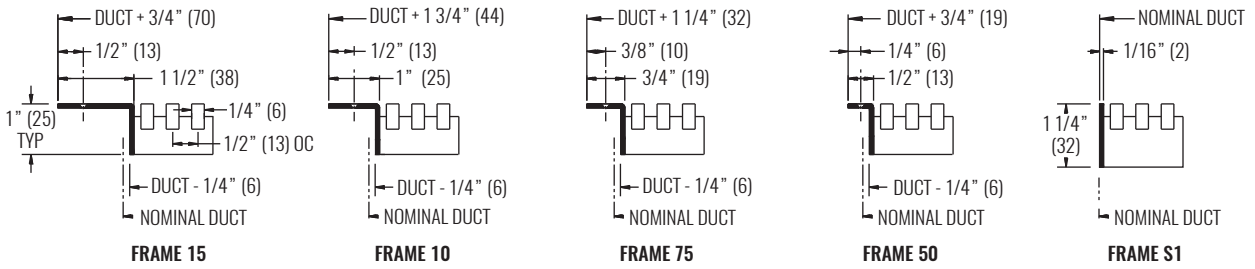
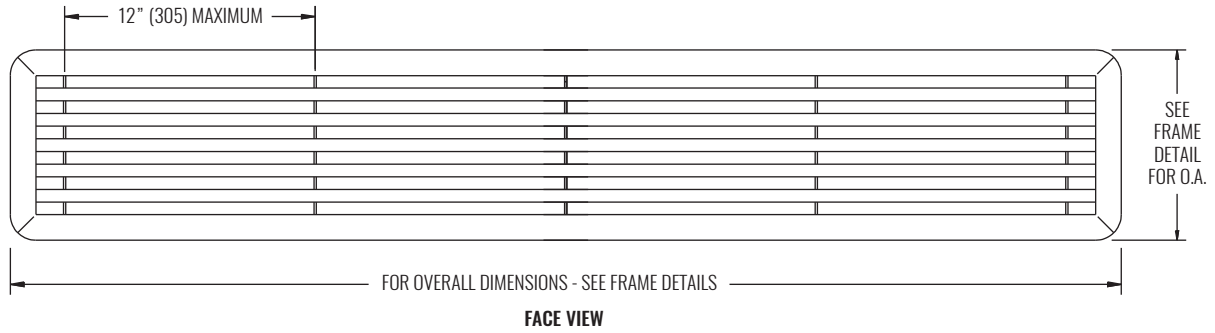


91520

Stainless Steel, Linear Bar Grille (1/4" Bars, 1/2" Spacing)



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
	CFM	THROW (ft)	CFM	THROW (ft)
4"	67 - 200	12 - 17	267 - 350	19 - 21
8"	133 - 267	14 - 18	400 - 600	21 - 24
12"	200 - 400	15 - 21	600 - 800	25 - 28

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 91240 - Stainless steel fixed core diffuser

FEATURES

- 1, 2 (or 2-corner), 3, or 4-way discharge air patterns
- 304 stainless steel construction (316 optional)

INLET SIZE

- Width: 4" - 48" (1" increments)
- Height: 4" - 60" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

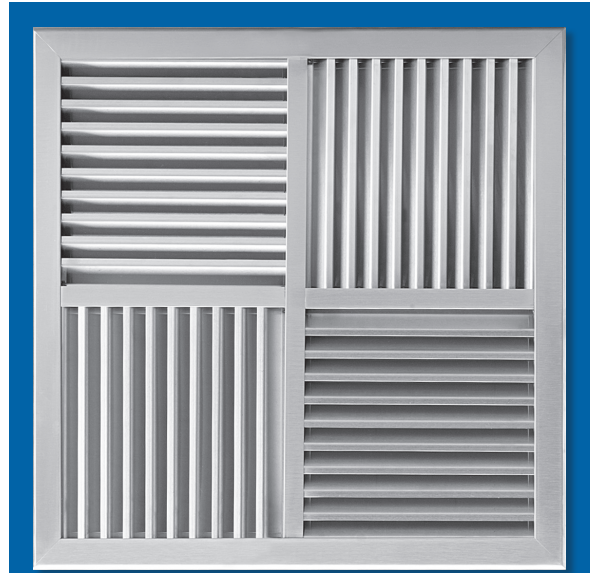
- 24"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

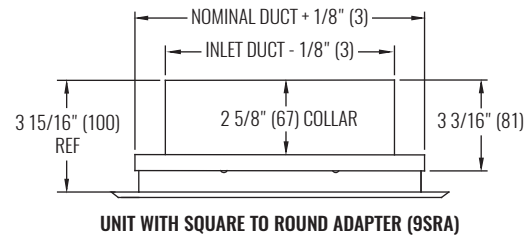
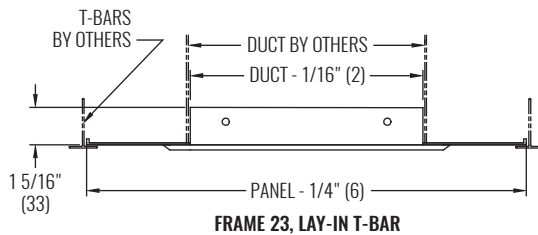
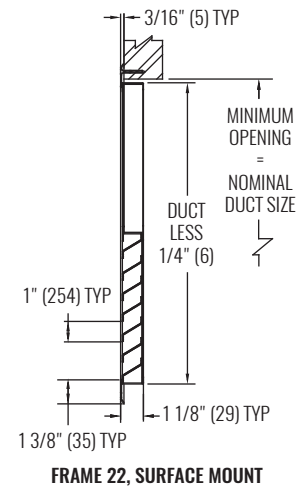
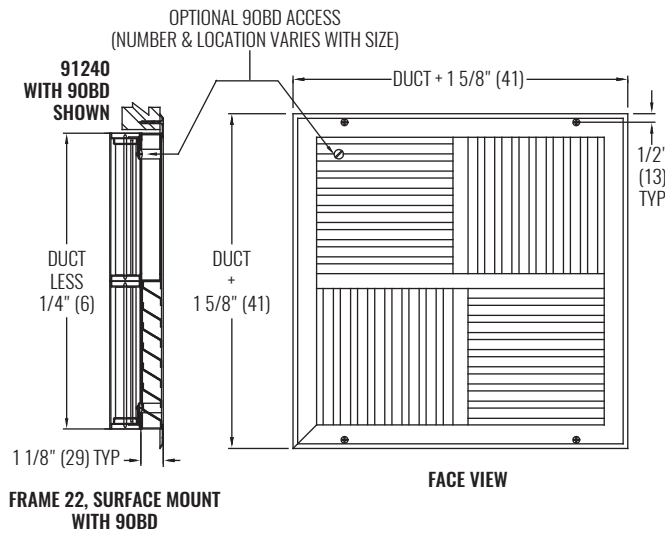
- Countersunk screw holes ¹
- 9OBD - Stainless steel OBD welded to unit, face adjustable
- 98PF - Stainless steel plaster frame
- 9SRA - Stainless steel square to round adapter

NOTES:

- ¹ Unit is shipped with #6x1 1/4" stainless steel sheet metal screws.



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
INLET	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	75 - 225	8 - 14	250 - 275	14 - 15
8"x8"	133 - 311	10 - 16	356 - 489	17 - 20
10"x10"	208 - 417	13 - 18	486 - 764	20 - 25
12"x12"	300 - 600	16 - 22	700 - 1000	24 - 29
14"x14"	408 - 681	18 - 24	817 - 1225	26 - 32
16"x16"	533 - 889	21 - 27	1067 - 1422	30 - 34
18"x18"	675 - 900	23 - 27	1125 - 1800	30 - 38
20"x20"	556 - 1111	21 - 30	1389 - 1944	34 - 40
22"x22"	336 - 1344	12 - 33	1681 - 2353	37 - 44
24"x24"	400 - 1200	18 - 31	1600 - 2400	36 - 44

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- 91310 - Stainless steel maximum security grille

FEATURES

- 10 gauge perforated face and 5/16" holes on 7/16" staggered centers
- 10 gauge stitch welded sleeve
- 304 stainless steel construction (316 optional)
- Ideal choice for secure areas that require large amounts of supply or return air

INLET SIZE

- Width: 6" - 30" (2" increments)
- Height: 4" - 30" (2" increments)
- Sleeve Length: 6", 8", 10", 12", or 18"

COMPATIBLE OPTIONS AND ACCESSORIES

- Angle frame, shipped loose
- Security bars on 6" centers
- Anchor bars
- Two angles, shipped loose
- Front or rear operated OBD, welded in sleeve



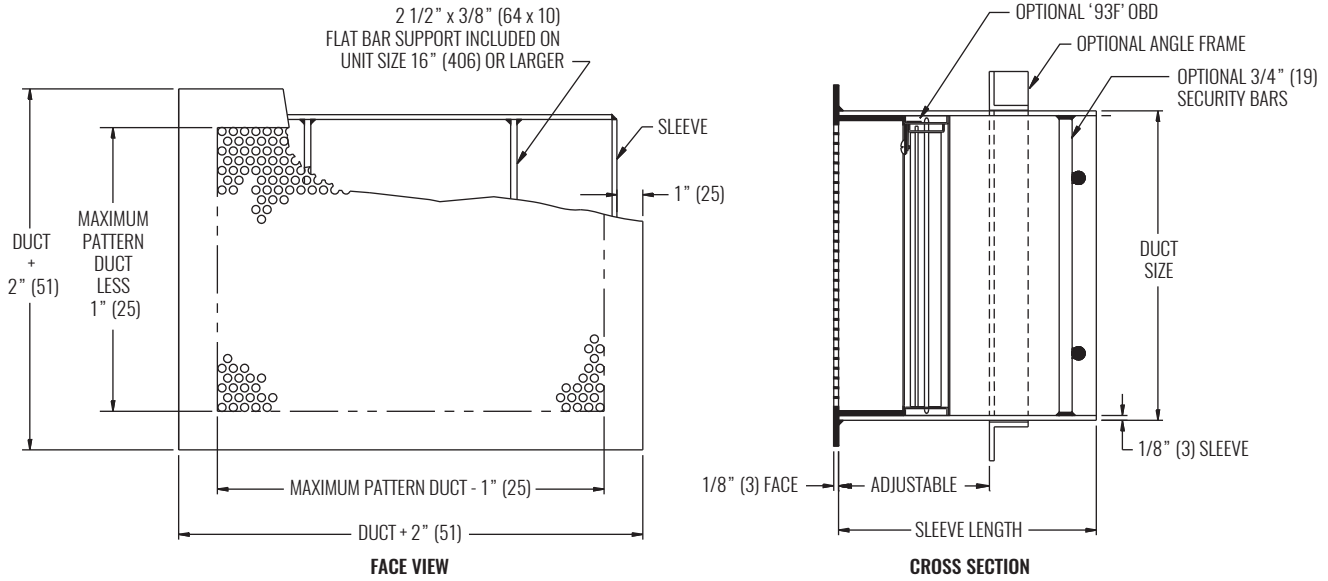
91310

Stainless Steel Grille, Maximum Security



GRILLES | STAINLESS STEEL

DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

SIZE	PERFORMANCE			
	NC (< 25)		NC (25 - 40)	
UNIT	CFM	THROW (ft)	CFM	THROW (ft)
6"x6"	25 - 100	5 - 16	125 - 200	17 - 22
8"x6"	33 - 133	6 - 18	167 - 233	20 - 25
8"x8"	44 - 178	6 - 21	222 - 311	23 - 29
8"x10"	56 - 222	7 - 23	278 - 389	26 - 31
9"x9"	56 - 225	7 - 23	281 - 394	26 - 31
10"x6"	50 - 185	2 - 6	190 - 300	7 - 8
10"x10"	69 - 278	8 - 26	347 - 486	29 - 34
12"x6"	50 - 200	2 - 7	225 - 350	7 - 9
12"x12"	100 - 400	10 - 31	500 - 600	35 - 38
16"x16"	178 - 533	13 - 36	711 - 1067	41 - 51
22"x10"	200 - 575	5 - 11	600 - 950	12 - 15
22"x22"	336 - 1008	18 - 49	1176 - 1681	53 - 64

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

91310

MODEL

- 9EGC5 - Stainless steel egg crate return grille with 1 3/8" flange

FEATURES

- 304 stainless steel construction (316 optional)
- 1/2" x 1/2" x 1/2" core

GRILLE SIZE

- Width: 4" - 48" (1" increments)
- Height: 4" - 48" (1" increments)

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

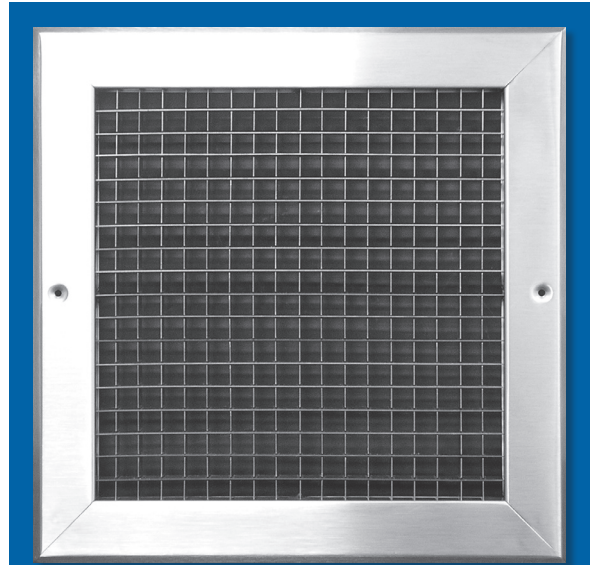
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Countersunk screw holes ¹
- 9OBD - Stainless steel OBD welded to unit, face adjustable
- 98PF - Stainless steel plaster frame
- 9SRA - Stainless steel square to round adapter

NOTES:

- ¹ Unit shipped with #6x1 1/4" stainless steel sheet metal screws.

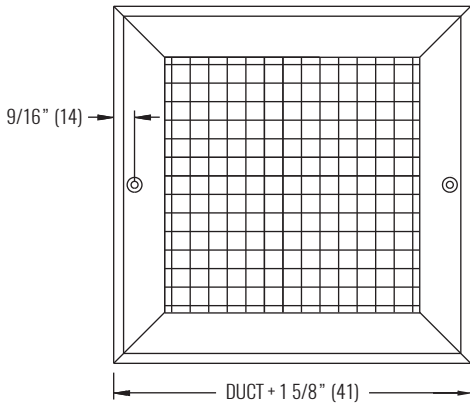


9EGC5

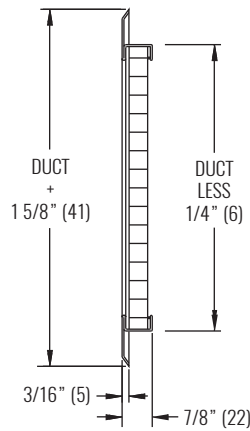
Stainless Steel Grille, Egg Crate



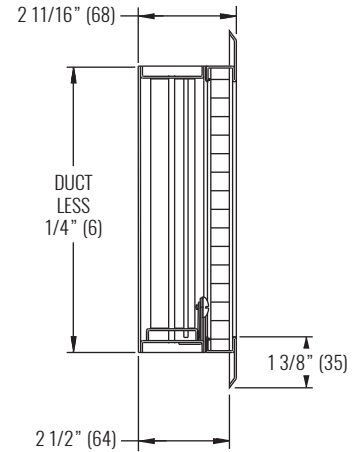
DIMENSIONAL DATA



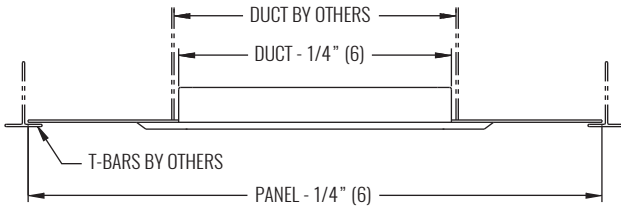
FACE VIEW



FRAME 22, SURFACE MOUNT



FRAME 22, SURFACE MOUNT WITH 90BD



FRAME 23, LAY-IN T-BAR

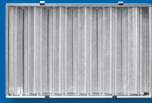
NOTES: Dimensions in parentheses are millimeters (mm).

PERFORMANCE DATA

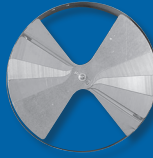
SIZE	PERFORMANCE	
	NC (< 25)	NC (25 - 40)
UNIT	CFM	CFM
6"x6"	100 - 225	256 - 350
8"x8"	150 - 375	431 - 600
10"x10"	200 - 550	638 - 900
12"x12"	300 - 775	894 - 1250
14"x14"	400 - 1025	1181 - 1650
16"x16"	500 - 1300	1500 - 2100
18"x18"	600 - 1600	1850 - 2600
20"x20"	800 - 1950	2238 - 3100
22"x10"	450 - 1125	1294 - 1800
22"x22"	900 - 2300	2650 - 3700
24"x12"	600 - 1450	1663 - 2300
24"x24"	1100 - 2700	3100 - 4300

SEE BACK SUPPLEMENT FOR DESIGN INFORMATION

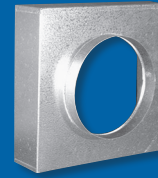
NOTES: Information shown is abbreviated. See website for complete information. Throw value ranges are given for isothermal conditions, unless otherwise noted, and a terminal velocity of 50 FPM (0.25 m/s). NC ranges are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.



OBD
Steel Opposed Blade Damper
5OBD (Aluminum)
POBD (Painted)
9OBD (Stainless Steel)
OBDDM (Duct Mounted)



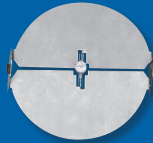
PRD100
Heavy Gauge Steel Duct Mounted Radial Sliding Blade Damper with Adapter Ring



SRAC325
Steel Square to Round Adapter



OBDFA / 5OBDFA
Steel / Aluminum Opposed Blade Damper



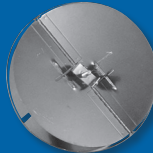
RP12
Steel Round Butterfly Damper



SRNA / SRNA2
Square to Round Transition for SH Diffusers
9SRA
Stainless Steel Square to Round Adapter for Stainless Steel Grilles



OBDSHV
Steel Opposed Blade Damper for SHV Diffuser
OBD1240 / 5OBD1240
Steel / Aluminum Opposed Blade Damper for 1240, 1240P, or 51240 Diffusers



PR12
Round, Steel Duct Mounted Butterfly Damper with Adapter Ring



EX8 / EX88
Duct Extractor 1" / 2" Blade Spacing



OBDHD
Steel Heavy Duty Opposed Blade Damper



PRSG15
Steel Straightening Grid



HCF23 / 5HCF23
Steel / Aluminum Adapter Frame



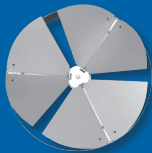
PR10
Neck Mounted, Radial Opposed Blade Damper



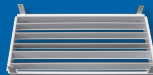
RSG15
Steel Straightening Grid with Adapter Ring



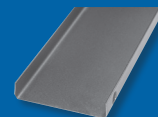
8PF
Plaster Frame
58PF (Aluminum)
98PF (Stainless Steel)



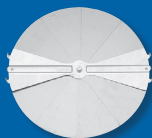
PRD10
Steel Duct Mounted, Radial Opposed Blade Damper with Adapter Ring



SSG-L
Steel Long Blade Straightening Grid



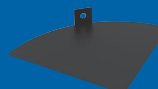
BOS
Steel Blank-off Strip



PRN100
Heavy Gauge Steel Neck Mounted Radial Sliding Blade Damper



SSG-S
Steel Short Blade Straightening Grid



1400SB
Sectorizing Baffle

ACCESSORIES

Applicable for Krueger Diffusers and Grilles



INDEX BY MODEL

To find out which products and accessories are compatible, look up the given accessory (darkly shaded), and run down the list of available products.

1400SB	
1400	51400A
1450	51450A
51400	M1400
51450	M1450
1400A	M51400
1450A	M51450

5FF (OPTION)	
AFCS80	S580
AFCS85	S580P
AFS580	S585
AFS585	S80
EGC5	S80P
S480	S85

8PF, 58PF	
80	AF5880
180	AF80
480	AF880
580	AFCS80
585	AFCS85
800	AFS580
880	AFS585
1380	EGC10
4880	EGC15
5180	EGC5
5800	S480
5880	S580
5885	S580P
51380	S585
180M	S80
5180M	S80P
AF580	S85

BOS	
1500	1800
1600	1850
1700	1900

EX8, EX88	
MOUNTED IN DUCT	

HCF23, 5HCF23	
USED ON ALL FRAME 23 DIFFUSERS	

OBD, 50BD, POBD	
80	180M
180	5180M
480	AF580
580	AF5880
585	AF80
800	AF880
880	AFCS80
1100	AFCS85
1190	AFS580
1380	AFS585
4880	EG10
5180	EG15
5800	EG5
5810	EGC10
5815	EGC15
5880	EGC5
5885	PRISM
6150	S480
6200	S580
51100	S580P
51190	S585
51380	S80
56150	S80P
56200	S85
1240PE	-

OBD1240, 50BD1240	
1240	51240
1240P	51240P

OBDDM	
MOUNTED IN DUCT	

OBDFA, 50BDFA	
6400	5SHCAD
6490	5SHPC
56400	MSH
56490	SH
5SH	SHPC

OBDHD	
680	6880
5680	56880

OBDSHV	
5SHV	SHV

PR10, PRN100, RP12	
1400	5SHR
1450	5SHRV
5000	KSD
6100	M1400
6500	M1450
6600	M51400
6690	M51450
51400	PLQ
51450	PLQIMP
56100	PLQLT
56500	PLQR
56600	PRISM
56690	R1DBR10
1400A	RA2
1450A	RA4
1900SQ	RM1
51400A	RM2
51450A	RM2PLQ
5PLQ	RM4
5PLQIMP	RM4PLQ
5RM1	SHPCR
5RM2	SHR
5RM4	SHRPLQ
5SHPCR	SHRV

PRD10, PRD100, PR12, RSG15, PRSG15	
1400	5SHRCAD
1450	5SHRV
5000	KSD
6100	M1400
6500	M1450
6600	M51400
6690	M51450
51400	PLQ
51450	PLQIMP
56100	PLQLT
56500	PLQR
56600	PRISM
56690	R1DBR10
1400A	RA2
1450A	RA4
1900SQ	RM1
51400A	RM2
51450A	RM2PLQ
5PLQ	RM4
5PLQIMP	RM4PLQ
5RM1	SHPCR
5RM2	SHR
5RM4	SHRPLQ
5SHPCR	SHRV
5SHR	-

S54800BD	
S5480	

SRNA ¹ , SRNA2 ¹	
5SH	MSH
5SHPC	SH
5SHRCAD	SHPC
5SHV	SHV

SSG, SRAC325 ¹	
80	5SH
180	5SHPC
480	5SHV
580	AF580
585	AF5880
800	AF80
880	AF880
1100	AFCS80
1190	AFCS85
1240	AFS580
4880	AFS585
5180	EG10
5800	EG15
5810	EG5
5815	EGC10
5880	EGC15
5885	EGC5
6150	MSH
6200	PRISM
51100	S480
51190	S580
51240	S580P
56150	S585
56200	S80
1240P	S80P
1240PE	S85
180M	SH
51240P	SHPC
5180M	SHV

NOTES:

¹ Square inlet is required on the product.

MODEL

- AFB - U-shaped, low velocity displacement diffuser

FEATURES

- 20 gauge front panel
- Horizontal, low velocity discharge at floor level
- Flow pattern at an angle of 180° enables large airflow rates with low residual velocities in the occupied zone
- Round duct connection with integral gasket at the top or bottom of the diffuser

UNIT SIZES

- 13"x24"
- 13"x48"
- 16"x48"
- 19"x60"
- 23"x48"
- 23"x71"
- 28"x71"
- 33"x71"
- 39"x71"

INLET SIZES

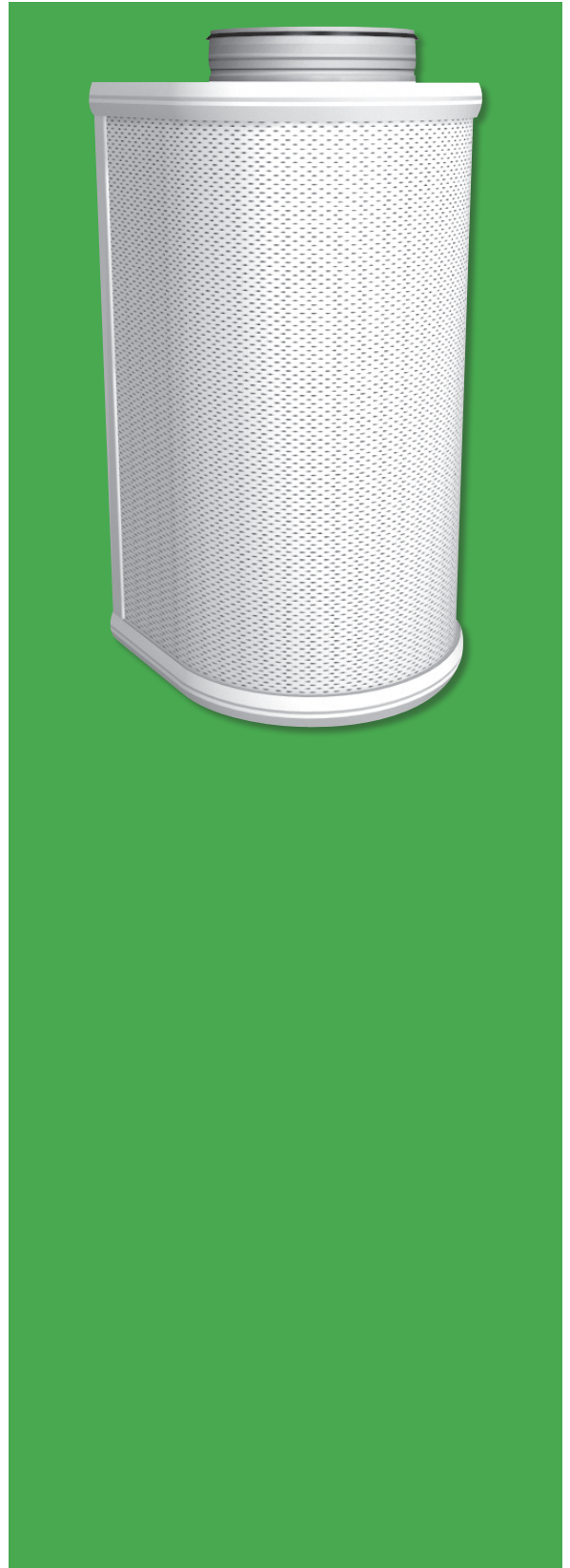
- Round: 8", 10", 12", 16", 20", 24", 32"

COMPATIBLE OPTIONS AND ACCESSORIES

- Stainless steel (AISI 316) design ¹
- 16 gauge front panel
- Duct cover (solid or perforated)
- Installation base (2", 4", 6")
- Vinyl trim in white or black
- Metal trim (painted to match)

NOTES: Finish code 90 (polished) not available with material code GS (steel).

¹ Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge). Material code SS (316 stainless steel) only available with finish code 90 (polished). If material code SS (stainless steel) is selected, the duct cover and installation base, if selected will be stainless steel.

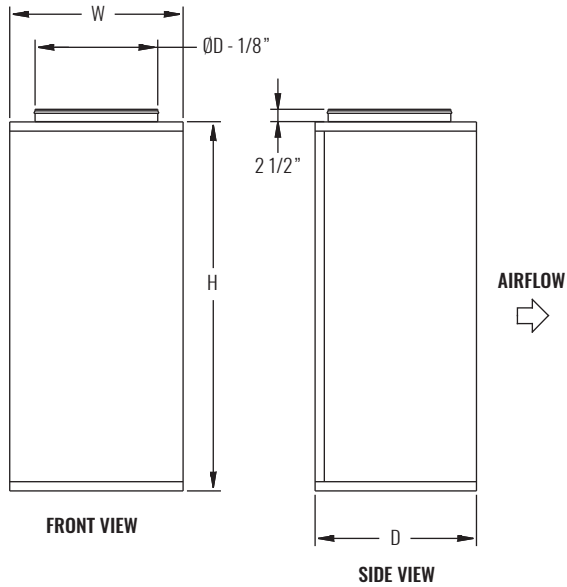


DISPLACEMENT VENTILATION

AFB



DIMENSIONAL DATA



DIMENSIONS				
NOMINAL W x H	W	H	D	ØD
13" x 24"	12 3/4"	23 5/8"	12"	8"
13" x 48"	12 3/4"	47 1/4"	12"	8"
16" x 48"	15 1/2"	47 1/4"	14 3/8"	10"
19" x 60"	18 1/16"	59 1/16"	16 15/16"	12"
23" x 48"	22 3/16"	47 1/4"	20 11/16"	16"
23" x 71"	22 3/16"	70 7/8"	20 11/16"	16"
28" x 71"	27 11/16"	70 7/8"	25 3/8"	20"
33" x 71"	32 7/16"	70 7/8"	30 5/16"	24"
39" x 71"	38 3/4"	70 7/8"	36 13/16"	32"

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NC RANGE
13" x 24"	149 - 325	8 - 30	5.3 - 8.6
16" x 48"	297 - 700	16 - 30	5.9 - 8.6
19" x 60"	424 - 1075	16 - 30	7.2 - 10.5
23" x 48"	636 - 1425	17 - 30	6.6 - 9.9
28" x 71"	848 - 2225	15 - 30	8.5 - 13.2
33" x 71"	1060 - 3025	5 - 30	8.5 - 13.8
39" x 71"	1695 - 3975	5 - 30	9.9 - 15.1

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM
MAX FLOOR COVERAGE DISTANCE	30 ft

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

MODEL

- AFC - Round, low velocity displacement diffuser

FEATURES

- 20 gauge front panel
- Horizontal, low velocity discharge at floor level, suitable for mid-space applications
- Flow pattern at an angle of 360° enables large airflow rates with low residual velocities in the occupied zone
- Round duct connection with integral rubber gasket on top or bottom of the diffuser

UNIT SIZES¹

- 12"x40"
- 14"x48"
- 16"x48"
- 20"x71"
- 25"x71"
- 32"x71"

INLET SIZES

- Round: 8", 10", 12", 14", 16", 18", 20", 24"

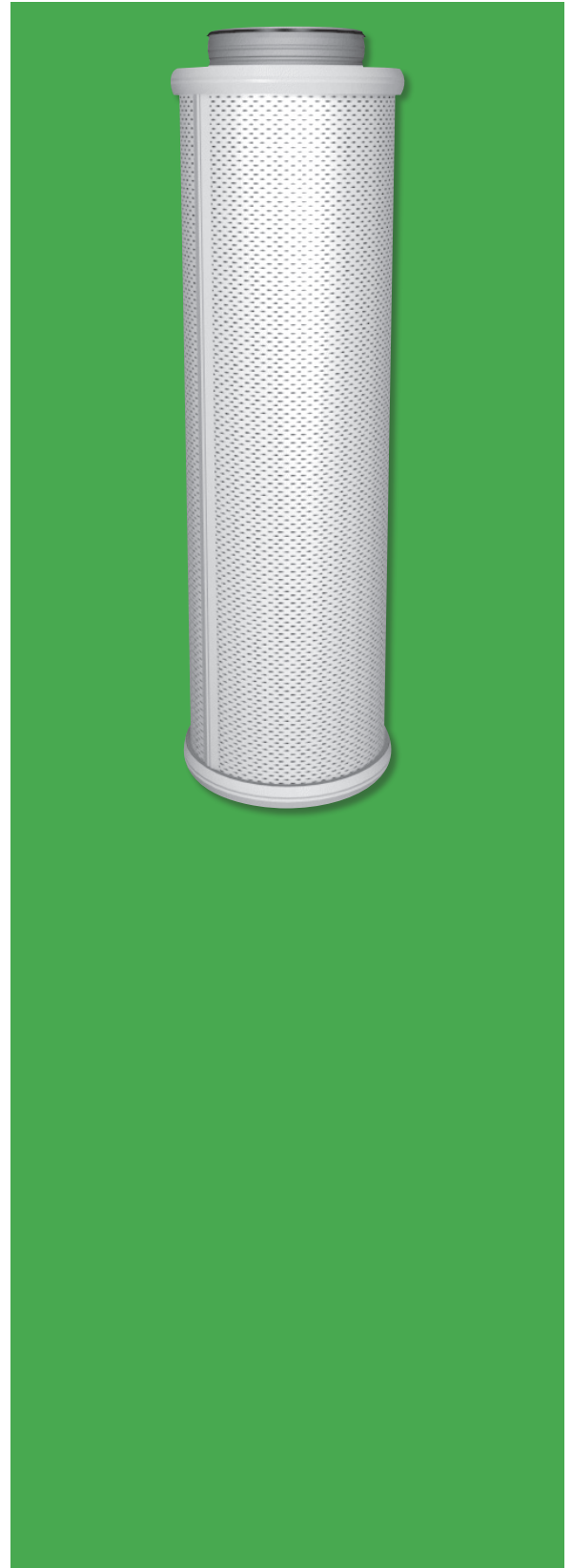
COMPATIBLE OPTIONS AND ACCESSORIES

- Stainless steel (AISI 316) design²
- 16 gauge front panel
- Duct cover (solid or perforated)
- Installation base (2", 4", 6")
- Vinyl trim in white or black
- Metal trim (painted to match)

NOTES: Finish code 90 (polished) not available with material code GS (steel).

¹ See Krueger's selection software for additional sizes.

² Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge). Material code SS (316 stainless steel) only available with finish code 90 (polished). If material code SS (stainless steel) is selected, the duct cover and installation base, if selected will be stainless steel.

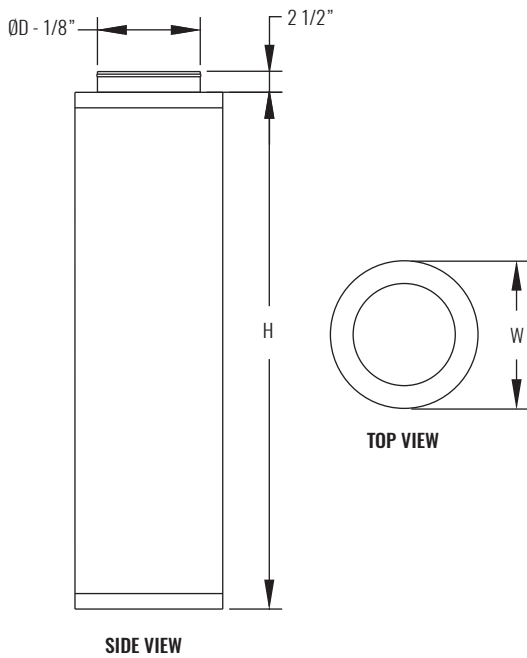


DISPLACEMENT VENTILATION

AFC

WEB SEARCH: AFC

DIMENSIONAL DATA



DIMENSIONS			
NOMINAL DIAMETER x H	W	H	ØD
12" x 40"	11 1/4"	39 3/8"	8"
14" x 48"	13 1/4"	47 1/4"	10"
16" x 48"	16"	47 1/4"	12"
20" x 71"	19 15/16"	70 7/8"	16"
25" x 71"	25"	70 7/8"	20"
32" x 71"	31 13/16"	71"	24"

ADDITIONAL SIZES AVAILABLE		
W	H	ØD
12" DIAMETER	12" - 48" H	8"
18" DIAMETER	12" - 48" H	14"
24" DIAMETER	12" - 60" H	14", 16"
30" DIAMETER	24" - 60" H	14", 16", 18"
36" DIAMETER	24" - 48" H	14", 16", 18"

NOTE: Height (H) is in 2" increments.

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NC RANGE
12" x 40"	212 - 450	16 - 30	4.6 - 6.6
14" x 48"	297 - 675	9 - 29	5.3 - 6.6
16" x 48"	530 - 1100	14 - 30	5.9 - 8.6
20" x 71"	848 - 1800	11 - 30	8.5 - 11.8
25" x 71"	1060 - 2825	8 - 30	7.9 - 11.8
32" x 71"	1695 - 3550	9 - 30	9.2 - 12.5

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM
MAX FLOOR COVERAGE DISTANCE	30 ft

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

MODEL

- AFD - Rounded triangle, low velocity displacement diffuser

FEATURES

- 20 gauge front panel
- Horizontal, low velocity discharge at floor level
- Flow pattern at an angle of 180° enables large airflow rates with low residual velocities in the occupied zone
- Round duct connection with integral gasket on top or bottom

UNIT SIZES

- 16"x24"
- 17"x24"
- 20"x32"
- 21"x24"
- 21"x48"
- 24"x32"
- 24"x48"
- 29"x48"
- 29"x71"
- 34"x48"
- 34"x71"
- 40"x71"

INLET SIZES

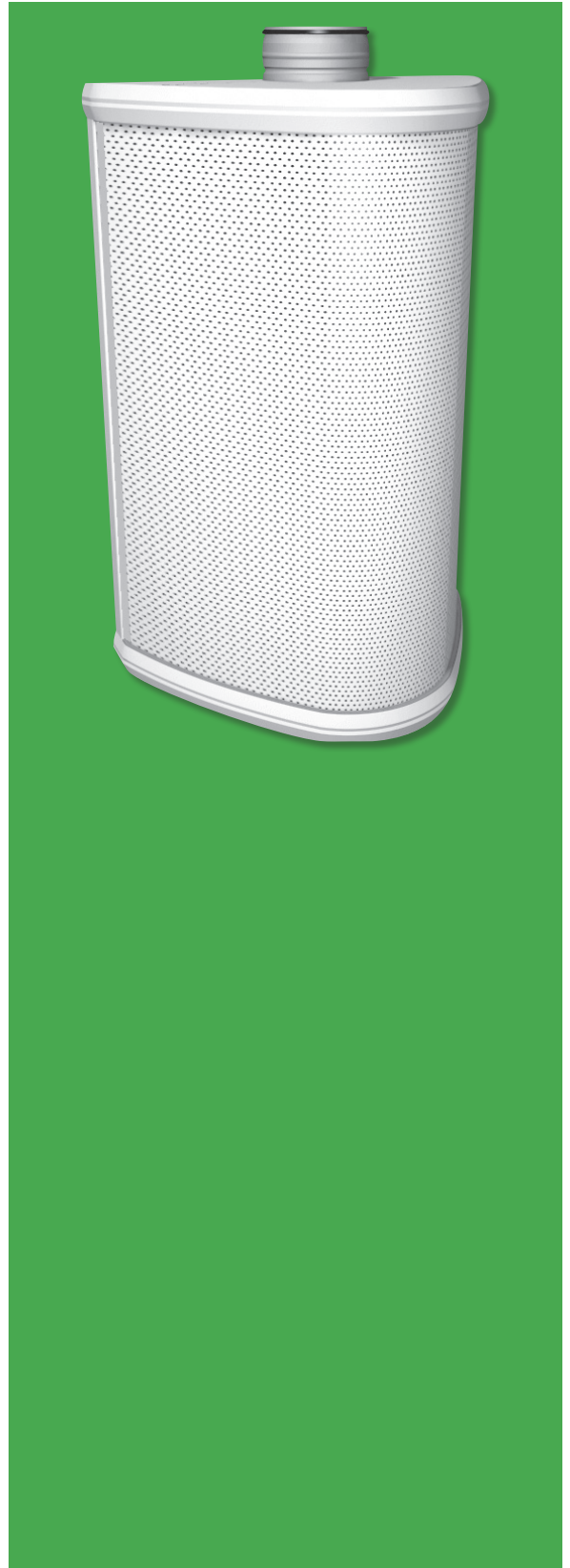
- Round: 4", 5", 6", 8", 10", 12", 16", 20"

COMPATIBLE OPTIONS AND ACCESSORIES

- Stainless steel (AISI 316) design ¹
- 16 gauge front panel
- Duct cover (solid or perforated)
- Installation base (2", 4", 6")
- Vinyl trim in white or black
- Metal trim (painted to match)

NOTES: Finish code 90 (polished) not available with material code GS (steel).

¹ Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge). Material code SS (316 stainless steel) only available with finish code 90 (polished). If material code SS (stainless steel) is selected, the duct cover and installation base, if selected will be stainless steel.

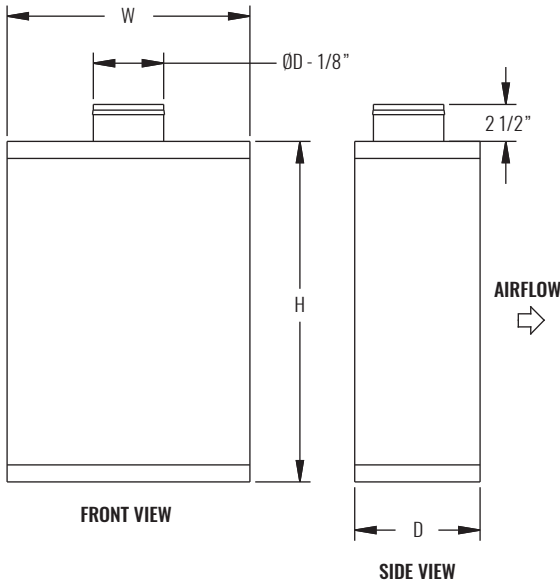


DISPLACEMENT VENTILATION

AFD



DIMENSIONAL DATA



DIMENSIONS				
NOMINAL W x H	W	H	D	ØD
16" x 24"	15 13/16"	23 5/8"	8 1/16"	4"
17" x 24"	16 7/8"	23 5/8"	8 11/16"	5"
20" x 32"	19 3/8"	31 1/2"	10 1/4"	6"
21" x 24"	20 15/16"	23 5/8"	11 1/4"	8"
21" x 48"	20 15/16"	47 1/4"	11 1/4"	8"
24" x 32"	24"	31 1/2"	13 1/2"	10"
24" x 48"	24"	47 1/4"	13 1/2"	10"
29" x 48"	28 1/8"	47 1/4"	16"	12"
29" x 71"	28 1/8"	70 7/8"	16"	12"
34" x 48"	33 1/4"	47 1/4"	19 5/16"	16"
34" x 71"	33 1/4"	70 7/8"	19 5/16"	16"
40" x 71"	39 3/8"	70 7/8"	23 1/4"	20"

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NC RANGE
16" x 24"	43 - 100	10 - 24	3.3 - 4.8
17" x 24"	64 - 150	10 - 27	3.3 - 4.6
20" x 32"	106 - 275	11 - 30	3.9 - 5.9
21" x 24"	106 - 300	2 - 29	3.3 - 5.9
21" x 48"	106 - 300	2 - 29	3.3 - 5.9
24" x 32"	191 - 450	12 - 30	4.6 - 6.6
24" x 48"	191 - 450	12 - 30	4.6 - 6.6
29" x 48"	424 - 850	17 - 30	5.9 - 8.6
29" x 71"	424 - 850	17 - 30	5.9 - 8.6
34" x 48"	636 - 1425	11 - 30	7.2 - 10.5
34" x 71"	636 - 1425	11 - 30	7.2 - 10.5
40" x 71"	848 - 2225	16 - 30	8.5 - 12.5

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM
MAX FLOOR COVERAGE DISTANCE	30 ft

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

MODEL

- AFF - Half flat oval, low velocity displacement diffuser

FEATURES

- 20 gauge front panel
- Horizontal, low velocity discharge at floor level
- Shallow footprint
- Large airflow rates with low residual velocities in the occupied zone due to large front plate
- Detachable front plate and removable baffle enables cleaning of the unit and duct work
- Rectangular duct connection on top/bottom of the unit

UNIT SIZES

- 12"x4"
- 24"x4"
- 24"x8"
- 32"x10"
- 40"x12"
- 40"x20"
- Height: 24", 32", 48", 72"

COMPATIBLE OPTIONS AND ACCESSORIES

- Stainless steel (AISI 316) design ¹
- 16 gauge front panel
- Duct cover (solid or perforated)
- Installation base (2", 4", 6")
- Vinyl trim in white or black
- Metal trim (painted to match)

NOTES: Finish code 90 (polished) not available with material code GS (steel).

¹ Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge). Material code SS (316 stainless steel) only available with finish code 90 (polished). If material code SS (stainless steel) is selected, the duct cover and installation base, if selected will be stainless steel.

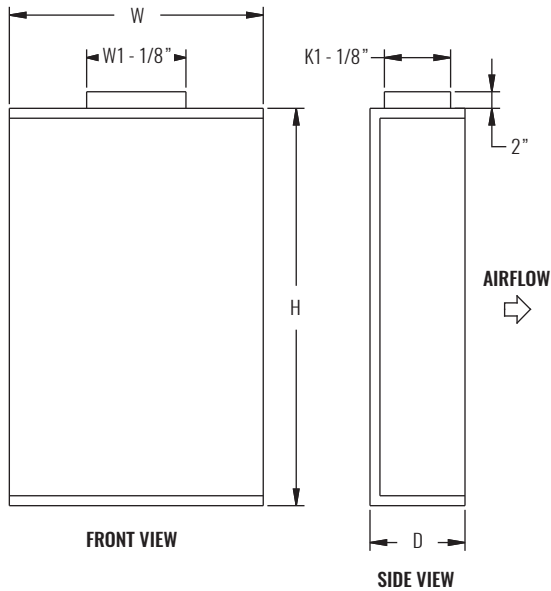


DISPLACEMENT VENTILATION

AFF



DIMENSIONAL DATA



DIMENSIONS					
NOMINAL W x H	W	H	D	W1	K1
12" x 4"	30 3/16"	23 13/16"	7 3/8"	12"	4"
12" x 4"	30 3/16"	47 7/16"	7 3/8"	12"	4"
24" x 4"	38 1/16"	31 11/16"	7 3/8"	24"	4"
24" x 4"	38 1/16"	47 7/16"	7 3/8"	24"	4"
24" x 8"	42"	47 7/16"	11 5/16"	24"	8"
24" x 8"	42"	71 1/16"	11 5/16"	24"	8"
32" x 10"	47 15/16"	47 7/16"	13 1/4"	32"	10"
32" x 10"	47 15/16"	71 1/16"	13 1/4"	32"	10"
40" x 12"	59 3/4"	71 1/16"	15 1/4"	40"	12"
40" x 20"	71 9/16"	71 1/16"	23 7/8"	40"	20"

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NC RANGE
12" x 4"	149 - 350	13 - 30	4.6 - 7.9
24" x 4"	212 - 600	10 - 30	5.3 - 9.2
24" x 8"	530 - 1100	15 - 30	6.6 - 9.2
32" x 10"	636 - 1325	7 - 30	7.9 - 11.9
40" x 12"	1060 - 2225	14 - 30	7.9 - 10.5
40" x 20"	1272 - 2875	5 - 30	8.5 - 12.5

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM
MAX FLOOR COVERAGE DISTANCE	30 ft

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

MODEL

- AFP - Half round, low velocity displacement diffuser

FEATURES

- 20 gauge front panel
- Horizontal, low velocity discharge at floor level
- Flow pattern at an angle of 180° enables large coverage with low residual velocities in the occupied zone
- Round duct connection with integral gasket at the top or bottom of the diffuser

UNIT SIZES¹

- 17"x23"
- 19"x23"
- 23"x31"

INLET SIZES

- Round: 4", 5", 6", 10", 12", 14", 16"

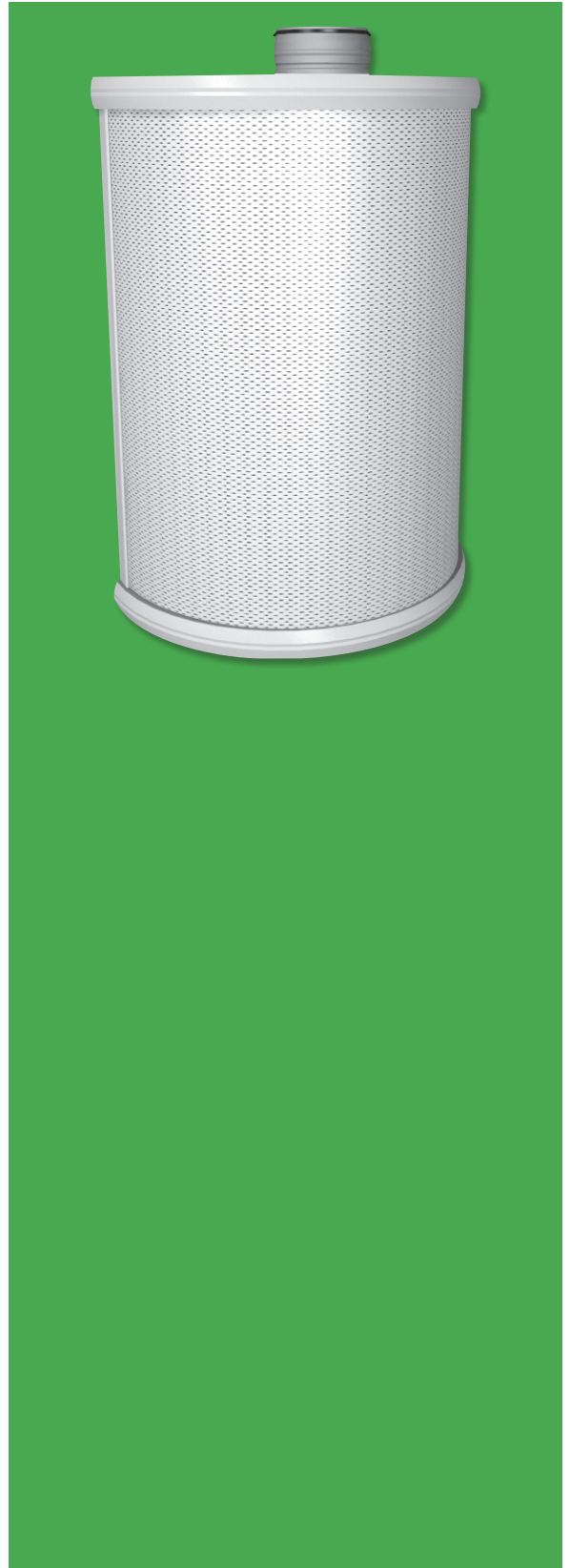
COMPATIBLE OPTIONS AND ACCESSORIES

- Stainless steel (AISI 316) design²
- 16 gauge front panel
- Duct cover (solid or perforated)
- Installation base (2", 4", 6")
- Vinyl trim in white or black
- Metal trim (painted to match)

NOTES: Finish code 90 (polished) not available with material code GS (steel).

¹ See Krueger's selection software for additional sizes.

² Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge). Material code SS (316 stainless steel) only available with finish code 90 (polished). If material code SS (stainless steel) is selected, the duct cover and installation base, if selected will be stainless steel.

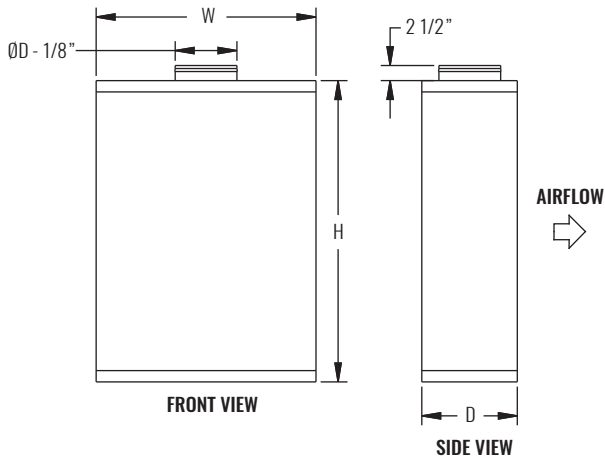


DISPLACEMENT VENTILATION

AFP



DIMENSIONAL DATA



DIMENSIONS				
NOMINAL DIA. x H	W	H	D	OD
17" x 23"	16 11/16"	23 5/8"	7 5/16"	4"
19" x 23"	19 1/16"	23 5/8"	8 1/4"	5"
23" x 31"	23"	31 1/2"	10 1/16"	6"

ADDITIONAL SIZES AVAILABLE		
NOMINAL DIAMETER	H	OD
18" DIAMETER	24", 36", 48"	10", 12"
24" DIAMETER	24", 36", 48", 60"	14", 16"
30" DIAMETER	24", 36", 48", 60"	14", 16"

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NC RANGE
14" x 23"	53 - 100	9 - 24	2.6 - 3.3
16" x 23"	75 - 175	9 - 30	3.3 - 4
20" x 31"	128 - 250	9 - 29	3.9 - 4.6

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM
MAX FLOOR COVERAGE DISTANCE	30 ft

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

MODEL

- AFQ - Corner round, low velocity displacement diffuser

FEATURES

- 20 gauge front panel
- Horizontal, low velocity discharge at floor level
- Corner installation with a 90° supply angle
- Round duct connection with integral gasket on top or bottom of the diffuser

UNIT SIZES ¹

- 8"x23"
- 10"x23"
- 12"x31"
- 14"x47"
- 16"x47"
- 19"x59"
- 24"x71"
- 36"x71"

INLET SIZES

- Round: 4", 5", 6", 8", 10", 12", 16", 20", 24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Flat face
- Stainless steel (AISI 316) design ²
- 16 gauge front panel
- Duct cover (solid or perforated)
- Installation base (2", 4", 6")
- Vinyl trim in white or black
- Metal trim (painted to match)

NOTES: Finish code 90 (polished) not available with material code GS (steel).

¹ See Krueger's selection software for additional sizes.

² Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge). Material code SS (316 stainless steel) only available with finish code 90 (polished). If material code SS (stainless steel) is selected, the duct cover and installation base, if selected will be stainless steel.



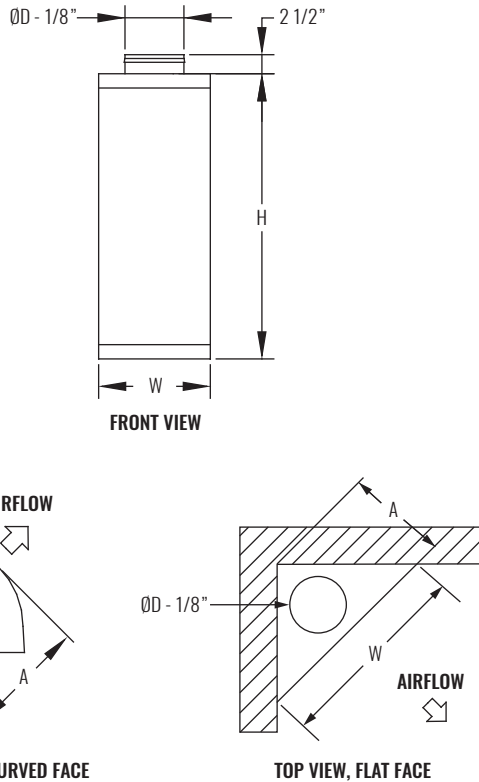
DISPLACEMENT VENTILATION

AFQ

WEB SEARCH: AFQ



DIMENSIONAL DATA



AFQ CURVED-FACE DIMENSIONS				
SIZE W x H	W	H	A	ØD
8" x 23"	8 1/16"	23 5/8"	8 13/16"	4"
10" x 23"	9 1/4"	23 5/8"	10 1/16"	5"
12" x 31"	10 13/16"	31 1/2"	11 3/4"	6"
14" x 47"	13"	47 1/4"	14"	8"
16" x 47"	15 3/8"	47 1/4"	16 7/16"	10"
19" x 59"	18 11/16"	59 1/16"	19 9/16"	12"
24" x 71"	23 1/16"	70 7/8"	24 1/4"	16"
29" x 71"	28 9/16"	70 7/8"	29 13/16"	20"
36" x 71"	35 1/16"	70 7/8"	36 7/16"	24"

AFQ FLAT-FACE DIMENSIONS				
SIZE W x H	W	H	A	ØD
24" x 24"	24"	24"	12"	8"
24" x 36"	24"	36"	12"	8"
24" x 48"	24"	48"	12"	8"
24" x 60"	24"	60"	12"	8"
24" x 72"	30"	72"	12"	8"
30" x 24"	30"	24"	15"	8", 10"
30" x 36"	30"	36"	15"	8", 10"
30" x 48"	30"	48"	15"	10"
30" x 60"	30"	60"	15"	10"
30" x 72"	36"	72"	15"	10"
36" x 24"	36"	24"	18"	10", 12"
36" x 36"	36"	36"	18"	12"
36" x 48"	36"	48"	18"	12"
36" x 60"	36"	60"	18"	12"
36" x 72"	36"	72"	18"	12"

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NC RANGE
8" x 23"	53 - 150	9 - 30	5.3 - 9.9
10" x 23"	53 - 150	9 - 30	5.3 - 9.9
12" x 31"	106 - 250	11 - 28	5.9 - 9.9
14" x 47"	212 - 475	2 - 30	7.2 - 11.2
16" x 47"	212 - 600	11 - 30	5.9 - 9.2
19" x 59"	297 - 775	14 - 29	7.9 - 11.8
24" x 71"	636 - 1400	9 - 30	9.9 - 15.1
29" x 71"	848 - 1900	9 - 30	10.5 - 16.5
36" x 71"	1060 - 2575	9 - 30	10.5 - 17.8

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM
MAX FLOOR COVERAGE DISTANCE	30 ft

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

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MODEL

- AFA - Rectangular, low velocity displacement diffuser

FEATURES

- 20 gauge front panel
- 1, 2, or 3-way air discharge pattern
- Flush mounted to the wall or ceiling
- Horizontal, low velocity discharge at floor level or vertical discharge from ceiling
- Round duct connection with integral gasket at the top, bottom, side, or back

UNIT SIZES

- 22"x21"
- 22"x45"
- 26"x53"
- 33"x63"
- 39"x79"
- 47"x79"
- 24"x24"
- 24"x48"
- 24"x60"
- 36"x48"
- 36"x60"
- 48"x24"
- 48"x36"
- 60"x24"
- 60"x36"

INLET SIZES

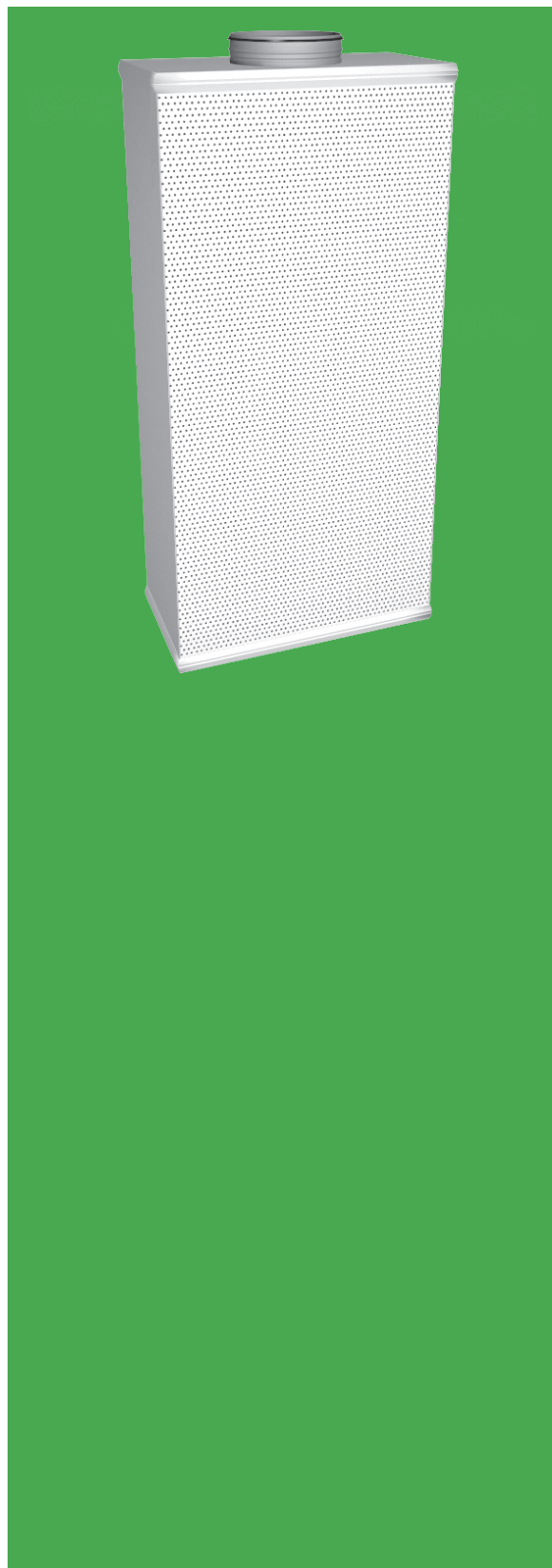
- Round: 6", 8", 10", 12", 16"
- Rectangular: 14"x6", 16"x8", 18"x8", 24"x8"

COMPATIBLE OPTIONS AND ACCESSORIES

- Optional duct connection locations
- 16 gauge front panel
- Stainless steel (AISI 316) design ¹
- Duct cover (solid or perforated)
- Installation base (2", 4", 6")
- Vinyl trim in white or black
- Metal trim (painted to match)

NOTES: Finish code 90 (polished) not available with material code GS (steel).

¹ Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge). Material code SS (316 stainless steel) only available with finish code 90 (polished). If material code SS (stainless steel) is selected, the duct cover and installation base, if selected will be stainless steel.

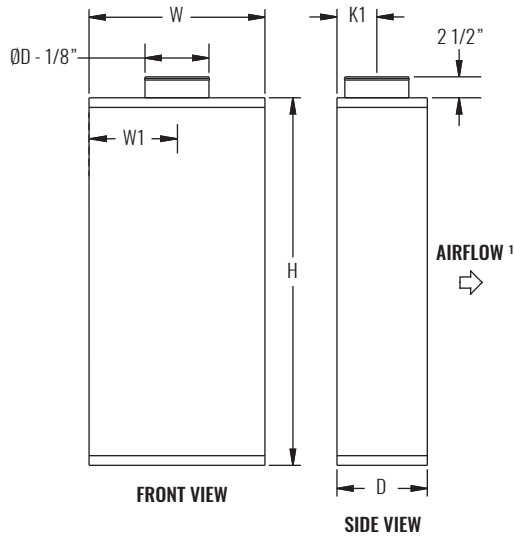


DISPLACEMENT VENTILATION

AFA



DIMENSIONAL DATA



DIMENSIONS						
NOMINAL SIZE W x H	W	H	D	W1	K1	ØD
22" x 21"	21 5/8"	21 3/8"	9 3/4"	10 7/8"	4 1/8"	6"
22" x 45"	21 5/8"	45"	11 5/16"	10 7/8"	4 7/8"	8"
26" x 53"	26"	53 1/4"	13 1/8"	13"	5 7/8"	10"
33" x 63"	32 11/16"	63 1/8"	15 1/2"	16 5/16"	7 3/16"	12"
39" x 79"	39 3/16"	78 7/8"	18 7/8"	19 5/8"	8 5/8"	16"
47" x 79"	47 1/16"	78 7/8"	15 7/16"	23 1/2"	7 7/8"	40x12"
24" x 24"	24"	24"	13"	12"	6 1/2"	8", 10", 14"x6"
24" x 48"	24"	48"	13"	12"	6 1/2"	8", 10", 14"x6", 16"x8"
24" x 60"	24"	60"	13"	12"	6 1/2"	8", 10", 14"x6", 16"x8"
36" x 48"	36"	48"	16"	18"	8"	10", 12", 16"x8"
36" x 60"	36"	60"	16"	18"	8"	10", 12", 16"x8", 18"x8", 24"x8"
48" x 24"	48"	24"	13"	24"	6 1/2"	8", 10", 14"x6", 16"x8"
48" x 36"	48"	36"	16"	24"	8"	10", 12", 16"x8", 18"x8"
60" x 24"	60"	24"	13"	30"	6 1/2"	8", 10", 14"x6", 16"x8"
60" x 36"	60"	36"	16"	30"	8"	10", 12", 16"x8", 18"x8"

NOTE:
¹ Airflow is dependent on discharge pattern selected.

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NC RANGE
22" x 21"	64 - 200	11 - 30	3.9 - 7.9
21" x 45"	106 - 300	11 - 29	5.9 - 9.2
26" x 53"	212 - 475	10 - 29	7.2 - 10.5
33" x 63"	339 - 775	11 - 30	7.9 - 11.2
39" x 79"	636 - 1200	17 - 30	8.5 - 11.2
47" x 79"	1060 - 2400	15 - 30	9.9 - 14.5

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM
MAX FLOOR COVERAGE DISTANCE	30 ft

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

MODEL

- AFE - Flat-faced, low velocity displacement diffuser for wall applications

FEATURES

- 20 gauge front panel
- Horizontal, low velocity discharge at floor level
- Easy integration into wall structure
- Detachable panel enables cleaning of the unit and duct work
- Rectangular duct connection at top/bottom of the unit

UNIT SIZES ¹

- 24"x24"
- 24"x32"
- 24"x39"
- 24"x47"

COMPATIBLE OPTIONS AND ACCESSORIES

- Stainless steel (AISI 316) ²
- 16 gauge front panel
- Plenum
- Face only

NOTES: Finish code 90 (polished) not available with material code GS (steel).

¹ See Krueger's selection software for additional sizes.

² Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge). Material code SS (316 stainless steel) only available with finish code 90 (polished). If material code SS (stainless steel) is selected, the duct cover and installation base, if selected will be stainless steel.

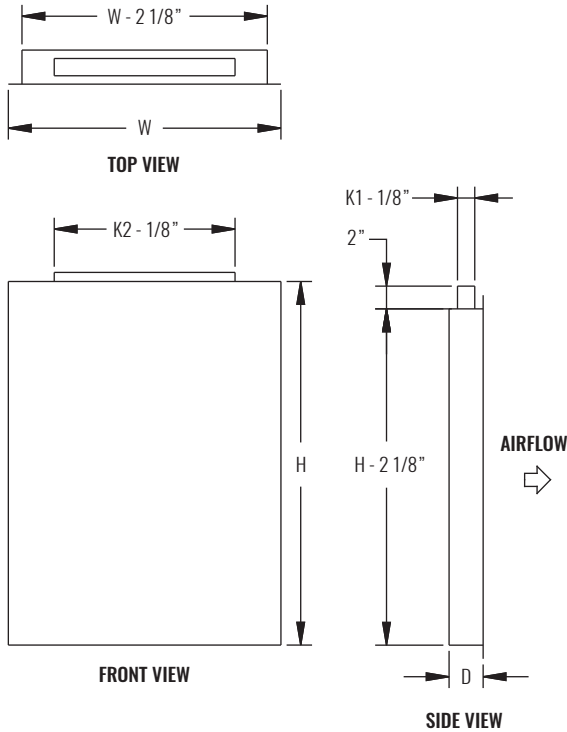


DISPLACEMENT VENTILATION

AFE



DIMENSIONAL DATA



DIMENSIONS					
NOMINAL W x H	W	H	D	K1	K2
24" x 24"	23 5/8"	23 5/8"	2 7/16"	1 1/8"	15 11/16"
24" x 32"	23 5/8"	31 1/2"	2 15/16"	1 1/2"	15 11/16"
24" x 39"	23 5/8"	39 3/8"	3 3/4"	2 1/4"	15 11/16"
24" x 47"	23 5/8"	47 1/4"	4 1/2"	3 1/16"	15 11/16"
15" x 24"	15"	24"	3 1/2"	2 1/2"	12"
15" x 30"	15"	30"	3 1/2"	2 1/2"	12"
15" x 36"	15"	36"	3 1/2"	2 1/2"	12"
15" x 48"	15"	48"	3 1/2"	2 1/2"	12"
23" x 24"	23"	24"	3 1/2"	2 1/2"	18"
23" x 30"	23"	30"	3 1/2"	2 1/2"	18"
23" x 36"	23"	36"	3 1/2"	2 1/2"	18"
23" x 48"	23"	48"	3 1/2"	2 1/2"	18"
24" x 30"	24"	30"	3 1/2"	2 1/2"	18"
24" x 36"	24"	36"	3 1/2"	2 1/2"	18"
24" x 48"	24"	48"	3 1/2"	2 1/2"	18"
30" x 24"	30"	24"	3 1/2"	2 1/2"	18"
36" x 24"	36"	24"	3 1/2"	2 1/2"	18"
48" x 24"	48"	24"	3 1/2"	2 1/2"	18"

PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NEAR ZONE RANGE (ft)
24" x 24"	75 - 150	10 - 29	3.9 - 5.9
24" x 32"	85 - 175	10 - 27	4.6 - 6.6
24" x 39"	106 - 250	10 - 30	5.3 - 7.9
24" x 47"	106 - 275	8 - 28	4.1 - 7.9

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM
MAX FLOOR COVERAGE DISTANCE	30 ft

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

MODEL

- AFR - Recessed, low velocity displacement diffuser for wall and stair riser applications

FEATURES

- 20 gauge front panel
- 10% free area perforated face and baffle
- Horizontal, low velocity discharge at floor level
- Detachable panel enables cleaning of the unit and duct work
- Spring clips included

UNIT SIZES

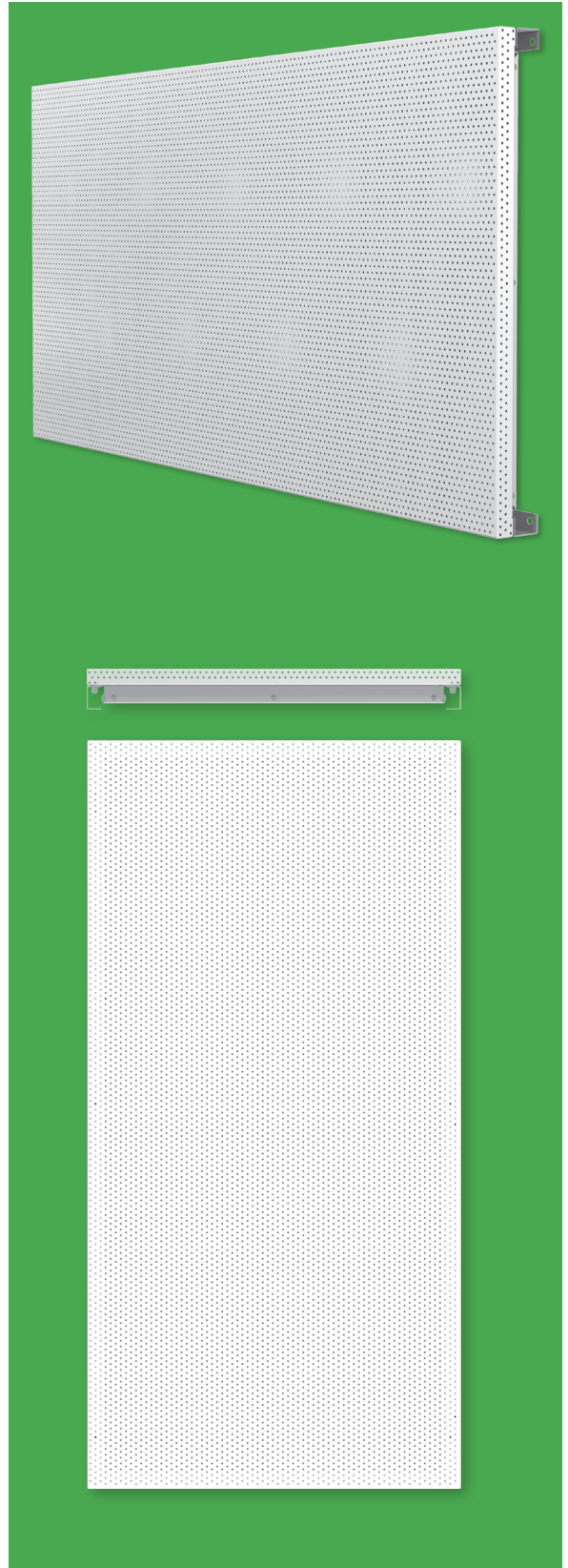
- Width: 8" - 48" (1" increments)
- Height: 4" - 24" (1" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- Stainless steel (AISI 316) design ¹
- 16 gauge front panel
- Wall frame (long edge only)

NOTES:

- ¹ Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge).

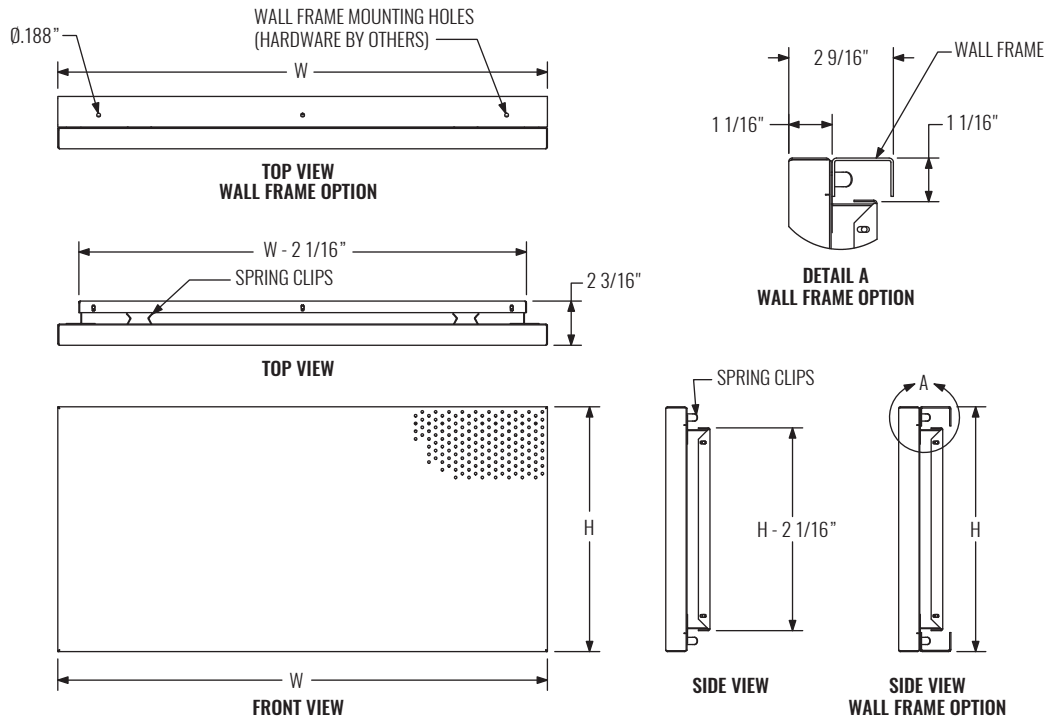


DISPLACEMENT VENTILATION

AFR

WEB SEARCH: AFR

DIMENSIONAL DATA



NOTES: Width (W) is 8" - 48" in 1" increments. Height (H) is 4" - 24" in 1" increments.

PERFORMANCE AND DESIGN DATA

PERFORMANCE				DESIGN	
SIZE	CFM RANGE	NC RANGE	NEAR ZONE RANGE (ft)	PARAMETERS	COOLING
24" x 4"	13 - 33	< 10	4 - 13	SUPPLY AIR TEMPERATURE	65 - 68°F
24" x 6"	20 - 50	< 10	5 - 14	RECOMMENDED FACE VELOCITY	40 FPM
24" x 8"	27 - 67	10 - 11	6 - 13	MAX FLOOR COVERAGE DISTANCE	30 ft
24" x 12"	40 - 100	10 - 13	6 - 15		
24" x 24"	80 - 200	11 - 16	6 - 16		
36" x 24"	120 - 300	11 - 14	7 - 17		
48" x 24"	160 - 400	10 - 12	8 - 18		

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Units are tested in accordance with the following standards: Air Flow Rate EN-ISO 5167-1 and Sound Power Level EN-ISO 7235.

MODEL

- AFH - Flat-faced, ceiling mounted, low velocity displacement diffuser with heating and cooling changeover

FEATURES

- 20 gauge front panel
- Dual plenum chambers allow heating/cooling changeover
- Heating supplied by 1" Designflo® (DFL) linear slot diffuser with adjustable pattern controllers (available in 1-slot or 2-slot configurations)

INLET SIZES ¹

- 6"x6"
- 12"x6"
- 18"x6"
- 24"x6"
- 30"x6"
- 36"x6"

FRAME STYLES

- F22 - Surface mount ²
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

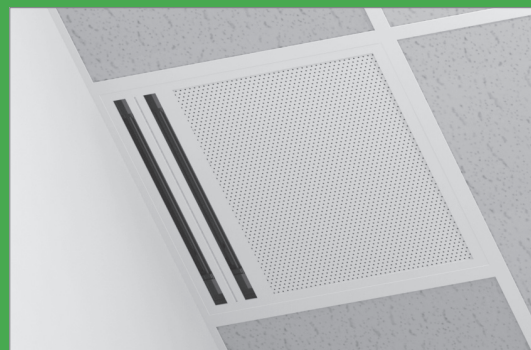
- Plenum insulation
- Electric actuator
- Changeover sensor
- Inlet probe

NOTES:

- ¹ Inlet sizes 24, 30, and 36 are NOT available on panel size 24"x24". The inlet is always opposite of slot location.
- ² Frame style F22 includes a separate plaster frame (model 5HCF23), shipped loose for field installation.



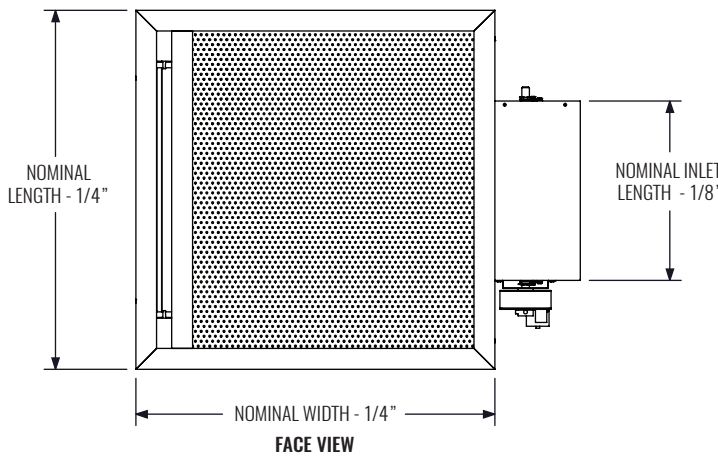
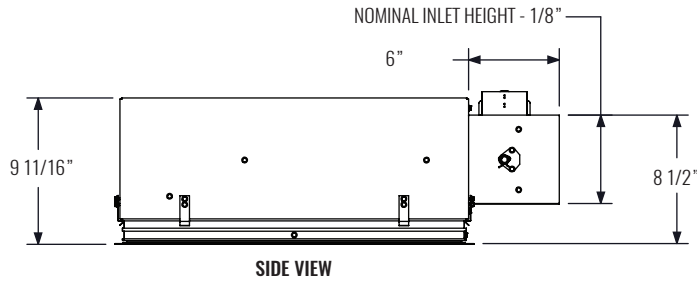
AFH 1-SLOT CONFIGURATION



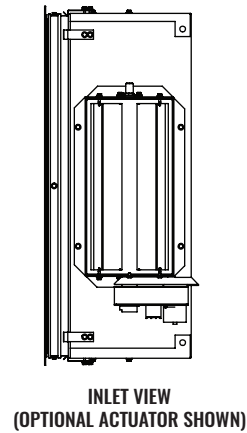
AFH 2-SLOT CONFIGURATION



DIMENSIONAL DATA



DIMENSIONS		
PANEL SIZE	NOMINAL DUCT SIZE	DEPTH
24" x 24"	6" x 6"	6"
	12" x 6"	
	18" x 6"	
48" x 24"	24" x 6"	6"
	30" x 6"	
	36" x 6"	



PERFORMANCE AND DESIGN DATA

SIZE	PERFORMANCE		
	NOMINAL W x H	CFM RANGE	NC RANGE
COOLING MODE			
24" x 24"	30 - 121	7 - 18	2 - 5
24" x 48"	67 - 268	8 - 28	4 - 6

SIZE		PERFORMANCE			
SLOT SIZE	# OF SLOTS	CFM RANGE	NC RANGE	1-WAY THROW MIN (ft)	1-WAY THROW MAX (ft)
HEATING MODE					
1"	(1) 24"	30 - 121	8 - 30	2 - 4 - 9	12 - 15 - 21
1"	(1) 48"	67 - 268	8 - 35	3 - 7 - 14	18 - 22 - 30
1"	(2) 24"	30 - 121	7 - 19	1 - 1 - 6	8 - 12 - 21
1"	(2) 48"	67 - 268	7 - 25	1 - 3 - 10	13 - 19 - 31

DESIGN	
PARAMETERS	COOLING
SUPPLY AIR TEMPERATURE	65 - 68°F
RECOMMENDED FACE VELOCITY	40 FPM

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the distance in feet, measured from the face of the diffuser to where the discharge air drops down to 1" above floor level. Throw values are given for terminal velocities of 150, 100, and 50 FPM. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with the following: ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741. Diffuser was mounted in a 9 ft. ceiling with no sidewall entrainment. Adjacent Zone size represents the throw distance in feet from on the floor directly under the diffuser to a terminal velocity of 40 FPM measured at 1" above the floor.

MODEL

- AFL - Flat-faced, ceiling mounted, low velocity displacement diffuser

FEATURES

- Square or rectangular sizes available
- For lay-in T-bar ceilings
- Supplies air at low velocities
- Galvanized steel and aluminum extrusion construction
- Standard hanger tabs located on each corner of plenum
- Round duct connection at top of unit

INLET SIZES

- Round: 6" - 20" (2" increments) ¹

FRAME STYLES

- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

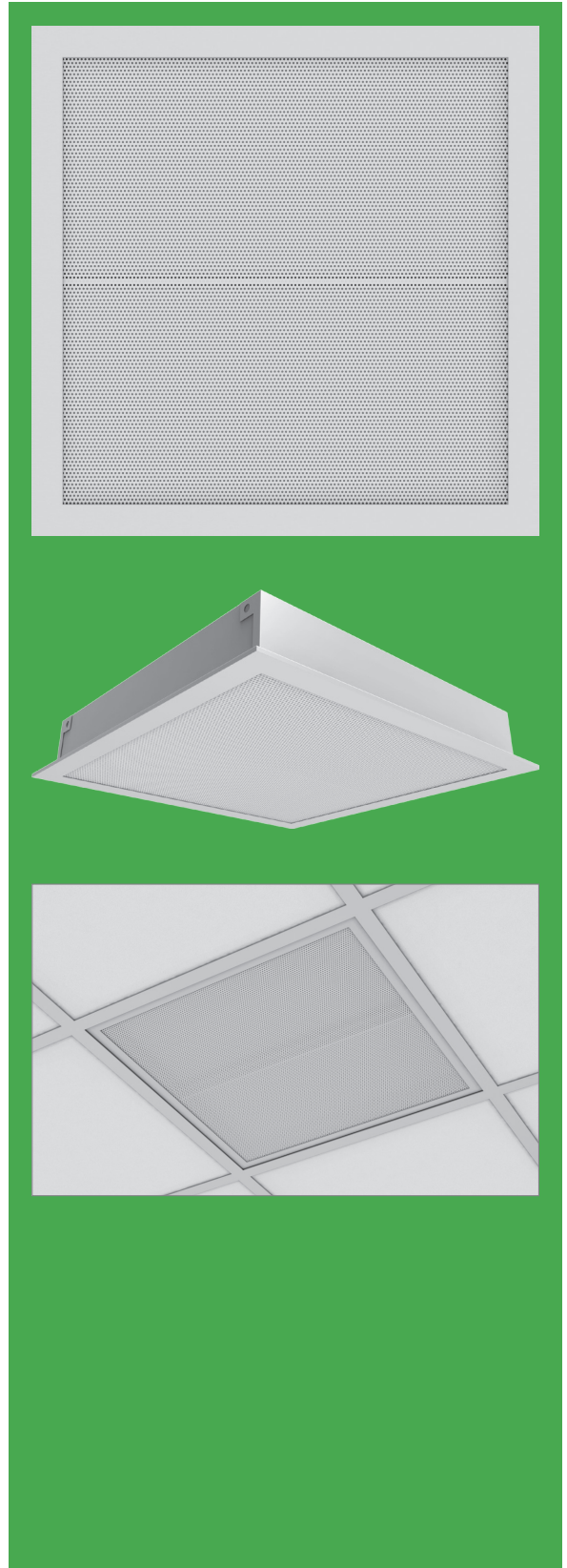
- 12"x24"
- 12"x36"
- 12"x48"
- 12"x60"
- 12"x72"
- 24"x24"
- 24"x36"
- 24"x48"
- 24"x60"
- 24"x72"
- 36"x36"
- 36"x48"
- 36"x60"
- 36"x72"

COMPATIBLE OPTIONS AND ACCESSORIES

- 1" insulation
- 316 stainless steel construction ²

NOTES:

- ¹ See product catalog for inlet and panel size availability.
- ² Material code SS (316 stainless steel) not available with front panel thickness code 16 (16 gauge).



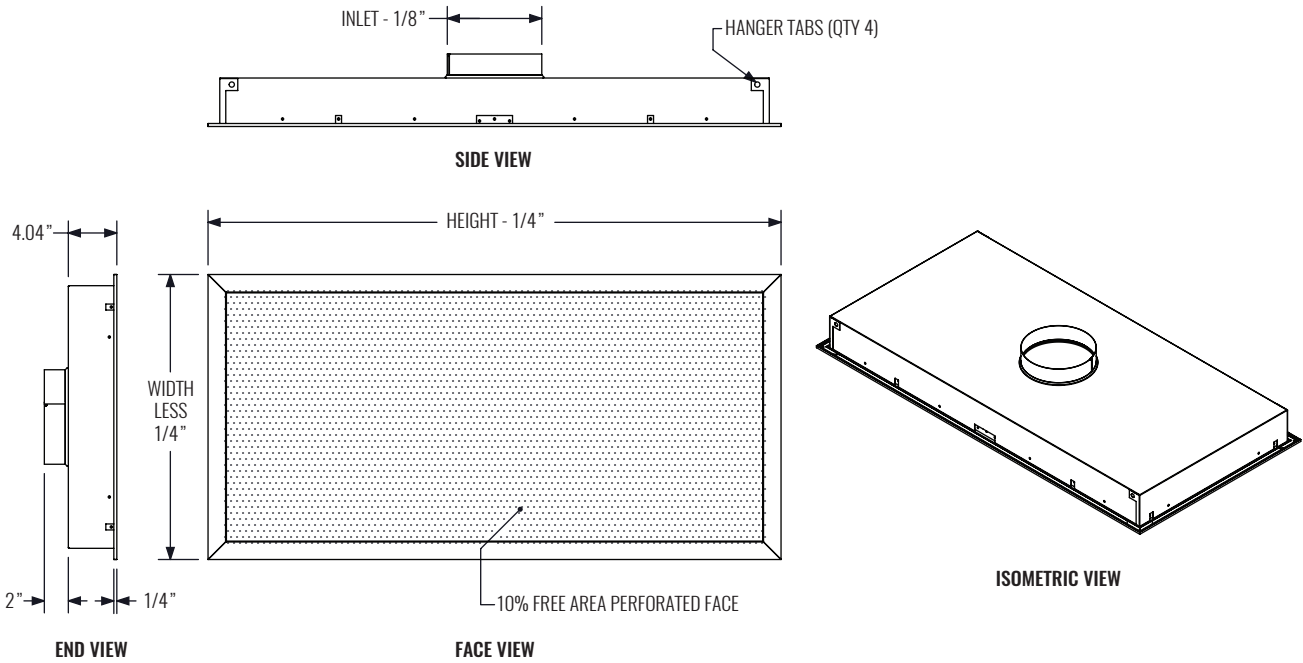
DISPLACEMENT VENTILATION

AFL

WEB SEARCH: AFL



DIMENSIONAL DATA



NOTES: 12"x24" to 12"x72" panel sizes only available with 6" and 8" inlet sizes. 24"x24" to 24"x72" panel sizes not available with 20" inlet size.

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE			DESIGN	
NOMINAL W x H	CFM RANGE	NC RANGE	NEAR ZONE RANGE (ft)	PARAMETERS	COOLING	
12" x 24"	25 - 65	5 - 7	1 - 4	SUPPLY AIR TEMPERATURE	65 - 68°F	
24" x 24"	60 - 150	5 - 10	2 - 5	RECOMMENDED FACE VELOCITY	40 FPM	
24" x 48"	125 - 310	7 - 20	4 - 6			

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature. The "Near Zone Range" provides the horizontal distance in feet, measured from the mid-point of the face of the diffuser to where the discharge air drops down to 1" above floor level. Displacement unit discharge temperature should be within 10 to 12 degrees of room set point. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with the following: ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- ASB - Active high capacity chilled beam

FEATURES

- Combined cooling and heating coil
- 2 and 4 pipe coil configuration
- Cooling/heating water pipe connections are copper 1/2" diameter
- Aluminum fins on water coil
- 5 nozzle sizes available for more precise performance
- 2-way or 1-way (right or left) discharge air pattern
- Right or left duct connection
- Primary air flow adjustment damper
- Integrated exhaust valve
- Perforated, hinged access panel for room side access to coil
- 20 gauge, galvanized steel casing
- 5" diameter primary air duct connections
- Low sound levels
- *Krueger by Halton* Velocity Control (HVC)

UNIT SIZE

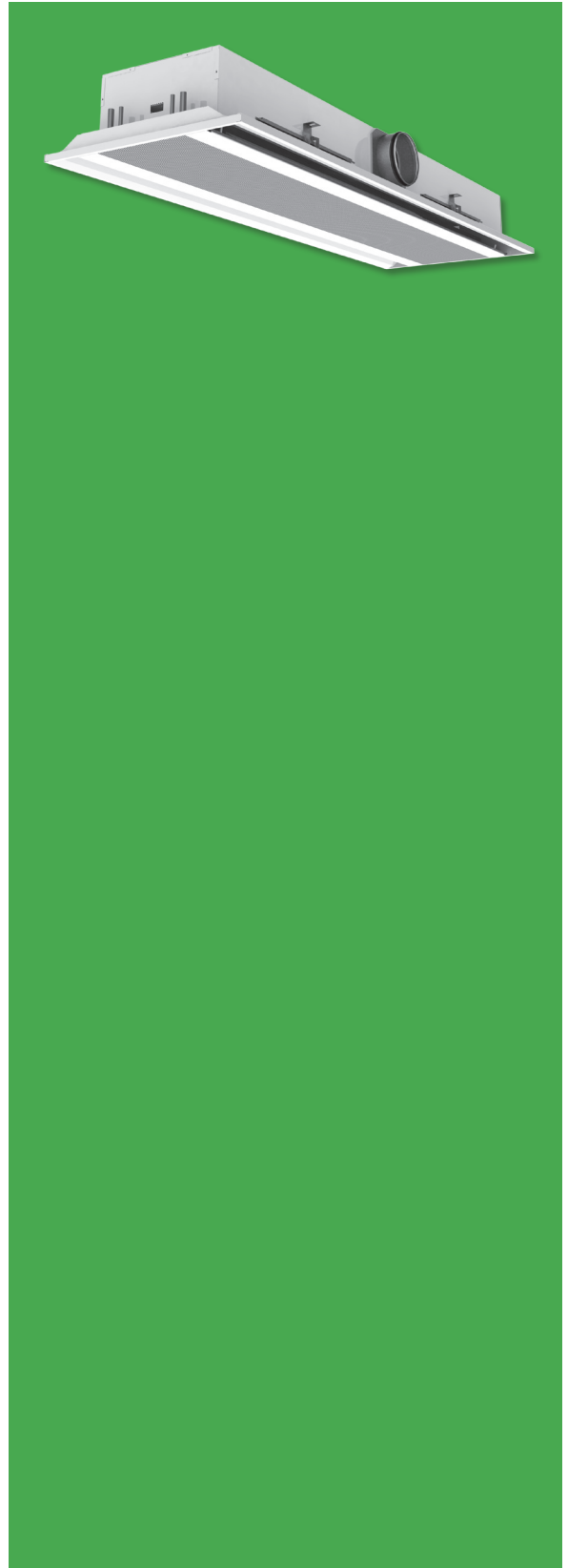
- Width: 23 3/4"
- Height: 8"
- Length: 48" - 144" (12" increments)
- Coil Length: 35" - 138" (12" increments)

INLET SIZE

- Round: 4 3/4"

COMPATIBLE OPTIONS AND ACCESSORIES

- Flexible hose connections

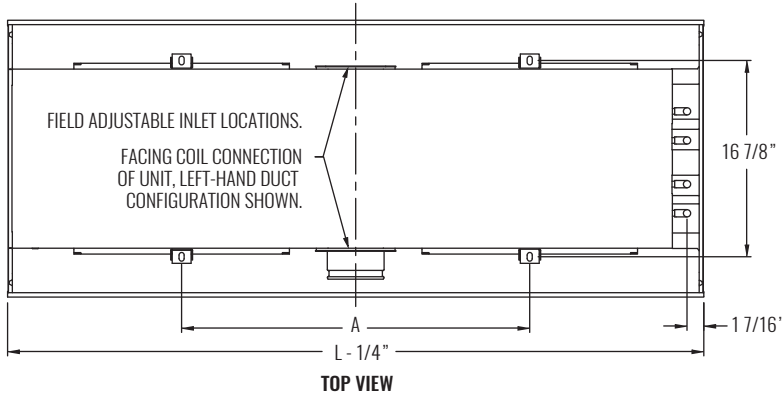


CHILLED BEAMS

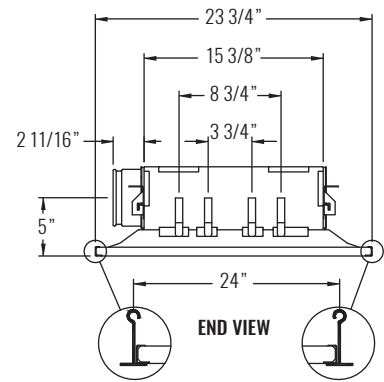
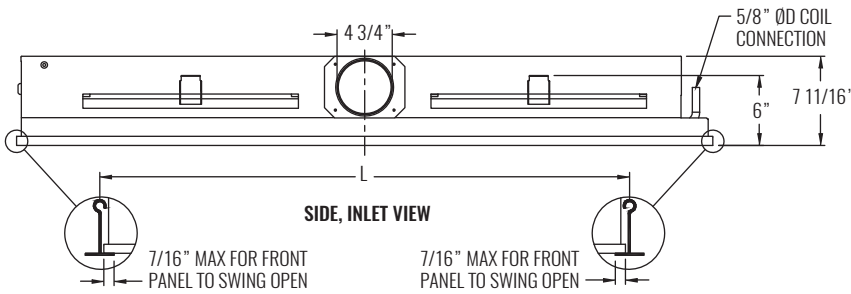
ASB



DIMENSIONAL DATA



DIMENSIONS & WEIGHTS			
L	A	WEIGHT	WEIGHT WITH WATER
48"	18" - 36"	91 lbs	96 lbs
60"	24" - 42"	113 lbs	118 lbs
72"	30" - 48"	134 lbs	141 lbs
84"	36" - 54"	156 lbs	163 lbs
96"	42" - 60"	177 lbs	186 lbs



PERFORMANCE AND DESIGN DATA

PERFORMANCE	
DESCRIPTION	VALUE
TOTAL SENSIBLE COOLING (BTU/H PER ACTIVE LINEAL FOOT)	340 - 1725
TOTAL SENSIBLE HEATING (BTU/H PER ACTIVE LINEAL FOOT)	235 - 2670
SOUND LEVEL (NC)	10 - 35

SUGGESTED DESIGN PARAMETERS		
DESCRIPTION	COOLING	HEATING
SUPPLY AIR TEMPERATURE	55 - 65°F	60 - 85°F
AIRFLOW RATE	25 CFM/ft max	
ENTERING WATER TEMPERATURE	56.5 - 70°F	90 - 120°F
WATER FLOW RATE	.50 - 2.25 GPM	.25 - 1.58 GPM
WATER ΔP	0 - 10 ft	
AIR ΔP	0.2 - 0.8 "WG	

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: in cooling, 75°F, 50% relative humidity room design temperature and in heating, 68°F, 50% relative humidity room design temperature. Entering cooling water temp should be selected at least +1.5 degrees higher than room dew point.

MODEL

- ABD - Active 12" wide sustainable chilled beam

FEATURES

- Combined cooling and heating coil
- 2 and 4 pipe coil configuration
- Cooling/heating water pipe connections are copper 1/2" and 3/8" diameter, respectively
- Aluminum fins on water coil
- 4 nozzle sizes available for more precise performance
- 2-way discharge air pattern
- Right or left duct connection
- Left front, right front, left back, or right back coil connection
- Perforated, hinged access panel for room side access to coil
- 20 gauge, galvanized steel casing
- 4" diameter primary air duct connections
- Low sound levels
- *Krueger by Halton* Velocity Control (HVC)

UNIT SIZE

- Width: 11.75"
- Height: 9.5"
- Length: 48" - 120" (4" increments)
- Coil Length: 39" - 111" (4" increments)¹

INLET SIZE

- Round: 4"

COMPATIBLE OPTIONS AND ACCESSORIES

- Flexible hose connections

NOTES:

- ¹ Maximum Coil Length is Beam Length less 9".

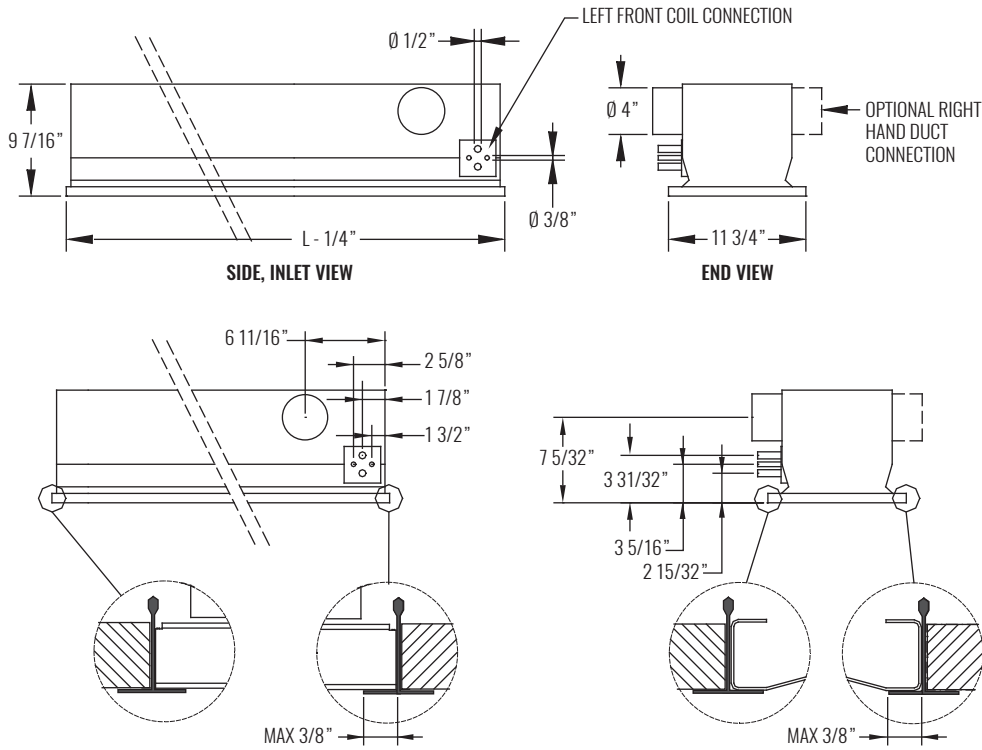


CHILLED BEAMS

ABD

[WEB SEARCH: ABD](#)

DIMENSIONAL DATA



LOCATION OF PIPE CONNECTIONS AND INTEGRATION TO SUSPENDED CEILING

NOTES: Cooling/heating water pipe connections are copper 1/2" and 3/8" with wall thickness of 0.04". The maximum chilled/hot water circuit operating pressure is 150 psi.

PERFORMANCE AND DESIGN DATA

PERFORMANCE		SUGGESTED DESIGN PARAMETERS		
DESCRIPTION	VALUE	DESCRIPTION	COOLING	HEATING
TOTAL SENSIBLE COOLING (BTU/H PER ACTIVE LINEAL FOOT)	200 - 875	SUPPLY AIR TEMPERATURE	55 - 65°F	60 - 85°F
TOTAL SENSIBLE HEATING (BTU/H PER ACTIVE LINEAL FOOT)	85 - 1170	AIRFLOW RATE	25 CFM/ft max	
SOUND LEVEL (NC)	10 - 25	ENTERING WATER TEMPERATURE	56.5 - 70°F	90 - 120°F
		WATER FLOW RATE	.50 - 2.25 GPM	.25 - 1.58 GPM
		WATER ΔP	0 - 10 ft	
		AIR ΔP	0.2 - 0.8 "WG	

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: in cooling, 75°F, 50% relative humidity room design temperature and in heating, 68°F, 50% relative humidity room design temperature. Entering cooling water temp should be selected at least +1.5 degrees higher than room dew point.

MODEL

- AHH - Active bulkhead chilled beam

FEATURES

- Combined cooling and heating coil
- 2 and 4 pipe coil configuration
- Cooling/heating water pipe connections are copper 1/2" and 3/8" diameter, respectively
- Aluminum fins on water coil
- 3 nozzle sizes available for more precise performance
- Right, left, or middle duct connection
- Right or left water coil connection
- Aluminum or steel double deflection grille
- Perforated, hinged access panel for room side access to coil
- 20 gauge, galvanized steel casing
- 5" diameter primary air duct connections
- Low sound levels

UNIT SIZE

- Width: 39.375"
- Height: 10"

INLET SIZE

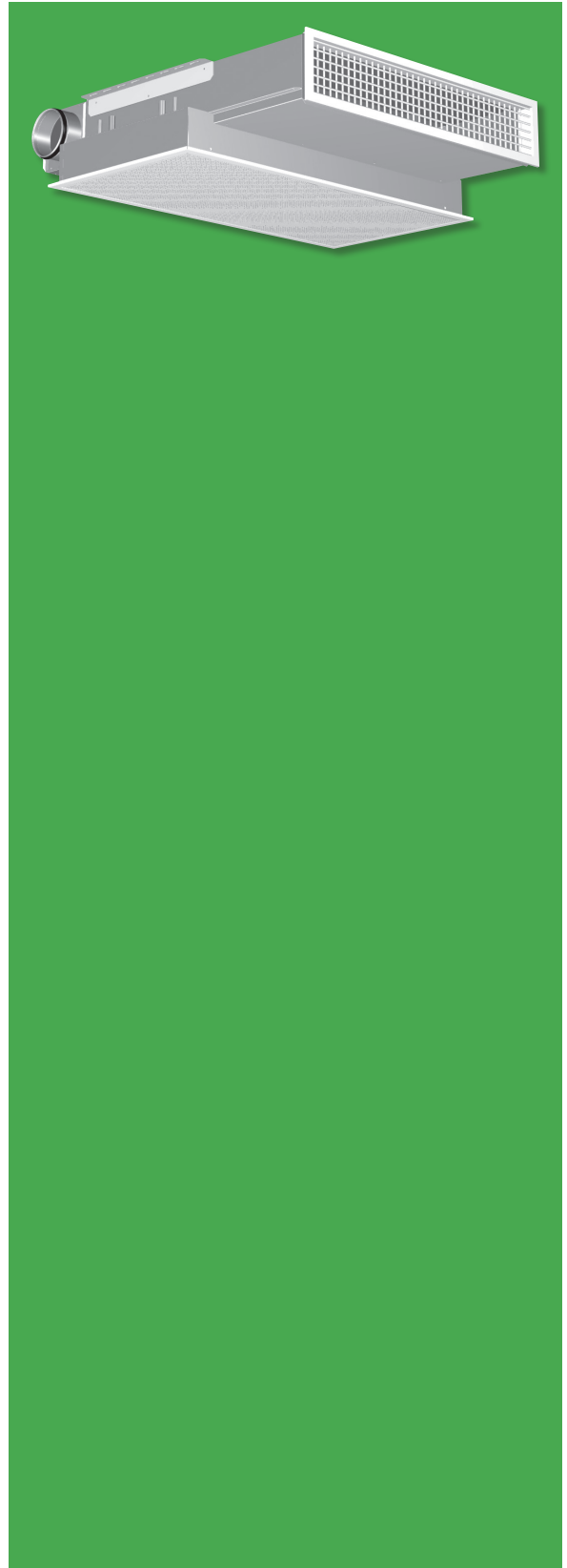
- Round: 5"

COMPATIBLE OPTIONS AND ACCESSORIES

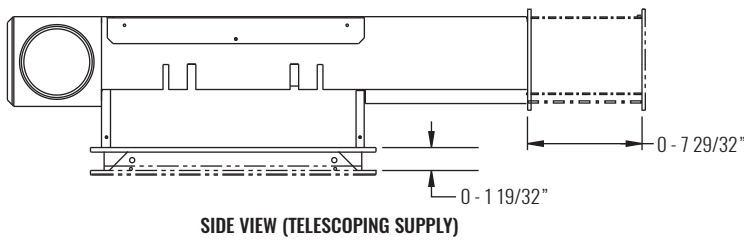
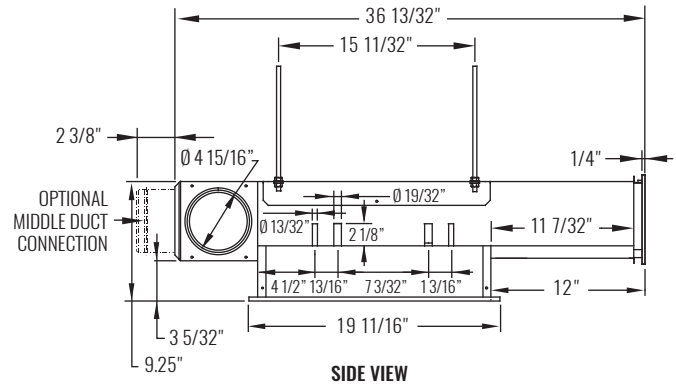
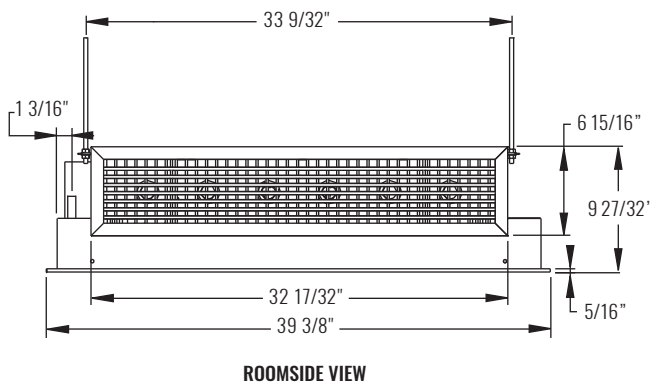
- Adjustable or max flow limit control valve with 24V or 230V ¹ actuator (factory mounted or shipped loose)
- Flexible hose connections

NOTES:

- ¹ Other voltages available on request.



DIMENSIONAL DATA



NOTES: Left hand duct and coil connection shown. Cooling/heating water pipe connections are copper 1/2" and 3/8" with a wall thickness of 0.04". The maximum operating pressure of chilled/hot water pipework is 150 psi. Control valves are delivered factory fitted or loose. If control valves are factory fitted, the location of the pipe connections cannot be changed on site. Aluminum or steel double deflection supply grille for room air flow discharge control.

PERFORMANCE AND DESIGN DATA

PERFORMANCE		SUGGESTED DESIGN PARAMETERS		
DESCRIPTION	VALUE	DESCRIPTION	COOLING	HEATING
TOTAL SENSIBLE COOLING (BTU/H PER ACTIVE LINEAL FOOT)	450 - 2180	SUPPLY AIR TEMPERATURE	55 - 65°F	60 - 85°F
TOTAL SENSIBLE HEATING (BTU/H PER ACTIVE LINEAL FOOT)	315 - 3215	AIRFLOW RATE	25 CFM/ft max	
SOUND LEVEL (NC)	10 - 20	ENTERING WATER TEMPERATURE	56.5 - 70°F	90 - 120°F
		WATER FLOW RATE	.50 - 2.25 GPM	.25 - 1.58 GPM
		WATER ΔP	0 - 10 ft	
		AIR ΔP	0.2 - 0.8" WG	

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: in cooling, 75°F, 50% relative humidity room design temperature and in heating, 68°F, 50% relative humidity room design temperature. Entering cooling water temp should be selected at least +1.5 degrees higher than room dew point.

MODEL

- AHB - Active chilled beam (bulkhead) with boost option

FEATURES

- Combined cooling and heating coil
- 2 and 4 pipe coil configuration
- Cooling/heating water pipe connections are copper 1/2" and 3/8" diameter, respectively
- Aluminum fins on water coil
- 3 Nozzle sizes available for more precise performance
- Right, middle, and left side duct connections available
- Right and left hand coil connection available
- Perforated, hinged access panel for room side access to coil
- 20 gauge, galvanized steel casing
- 5" diameter primary air duct connections
- Low sound levels

UNIT SIZE

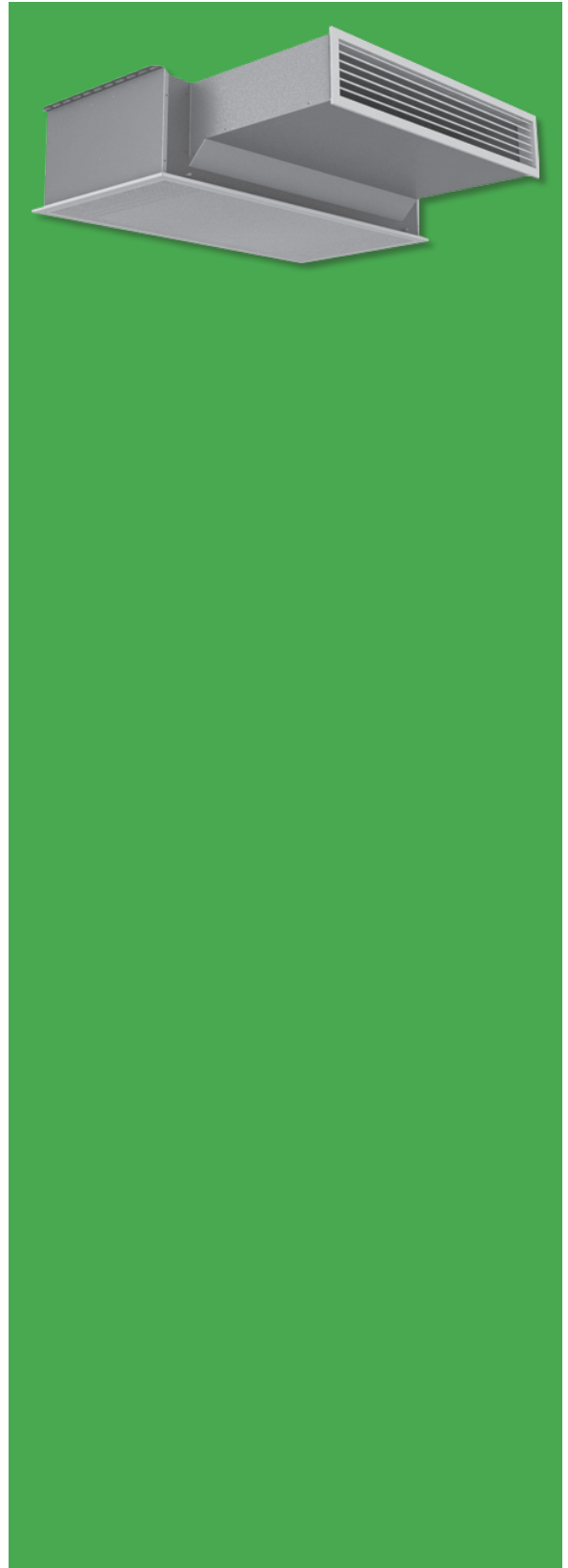
- Width: 39", 47", or 55"
- Height: 11"

INLET SIZE

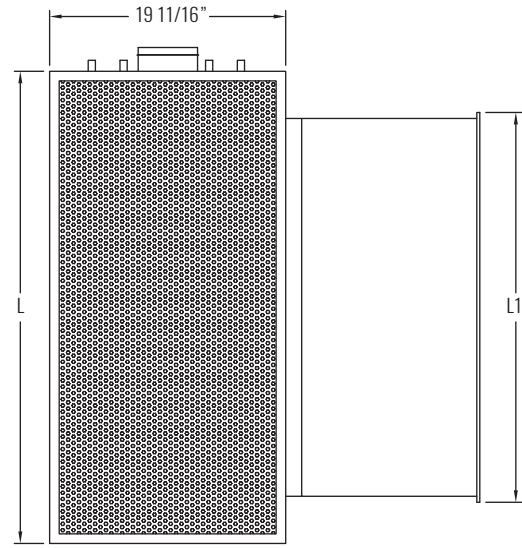
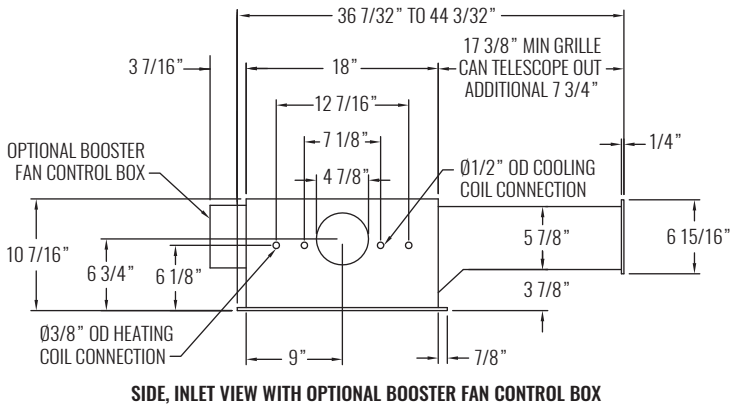
- Round: 5"

COMPATIBLE OPTIONS AND ACCESSORIES

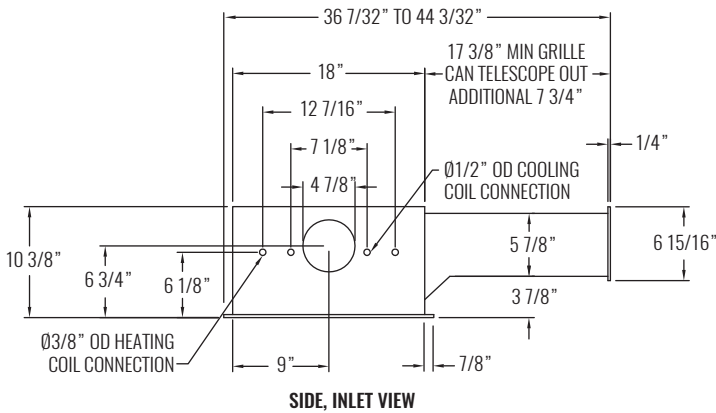
- Booster fan
- Specialized controls
- Flexible hose connections



DIMENSIONAL DATA



DIMENSIONS	
L	L1
39"	32"
47"	39"
55"	47"



NOTES: Cooling/heating water pipe connections are copper 1/2" and 3/8" with wall thickness of 0.04". The maximum chilled/hot water circuit operating pressure is 150 psi.

PERFORMANCE AND DESIGN DATA

PERFORMANCE		SUGGESTED DESIGN PARAMETERS		
DESCRIPTION	VALUE	DESCRIPTION	COOLING	HEATING
TOTAL SENSIBLE COOLING (BTU/H PER ACTIVE LINEAL FOOT)	400 - 2000	SUPPLY AIR TEMPERATURE	55 - 65°F	60 - 85°F
TOTAL SENSIBLE HEATING (BTU/H PER ACTIVE LINEAL FOOT)	350 - 3050	AIRFLOW RATE	25 CFM/ft max	
SOUND LEVEL (NC)	10 - 20	ENTERING WATER TEMPERATURE	56.5 - 70°F	90 - 120°F
		WATER FLOW RATE	.50 - 2.25 GPM	.25 - 1.58 GPM
		WATER ΔP	0 - 10 ft	
		AIR ΔP	0.2 - 0.8" WG	

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: in cooling, 75°F, 50% relative humidity room design temperature and in heating, 68°F, 50% relative humidity room design temperature. Entering cooling water temp should be selected at least +1.5 degrees higher than room dew point.

MODEL

- ABH - Active corner mounted exposed chilled beam

FEATURES

- Combined cooling and heating coil
- 2 and 4 pipe coil configuration
- Cooling/heating water pipe connections are copper 1/2" and 3/8" diameter, respectively
- Aluminum fins on water coil
- 2 nozzle sizes available for more precise performance
- 1-way supply
- Same side or opposite side of supply air, water coil connections
- Perforated, hinged access panel for room side access to coil
- 20 gauge, galvanized steel casing
- 4" diameter primary air duct connections
- Low sound levels

UNIT SIZE

- Width: 12"
- Height: 9"
- Length: 72" - 196" (increments of 4")
- Coil Length: Unit length \leq 116", 59" - 116" (4" increments) ¹
- Coil Length: Unit length \geq 120", 57" - 183" (4" increments) ¹

INLET SIZE

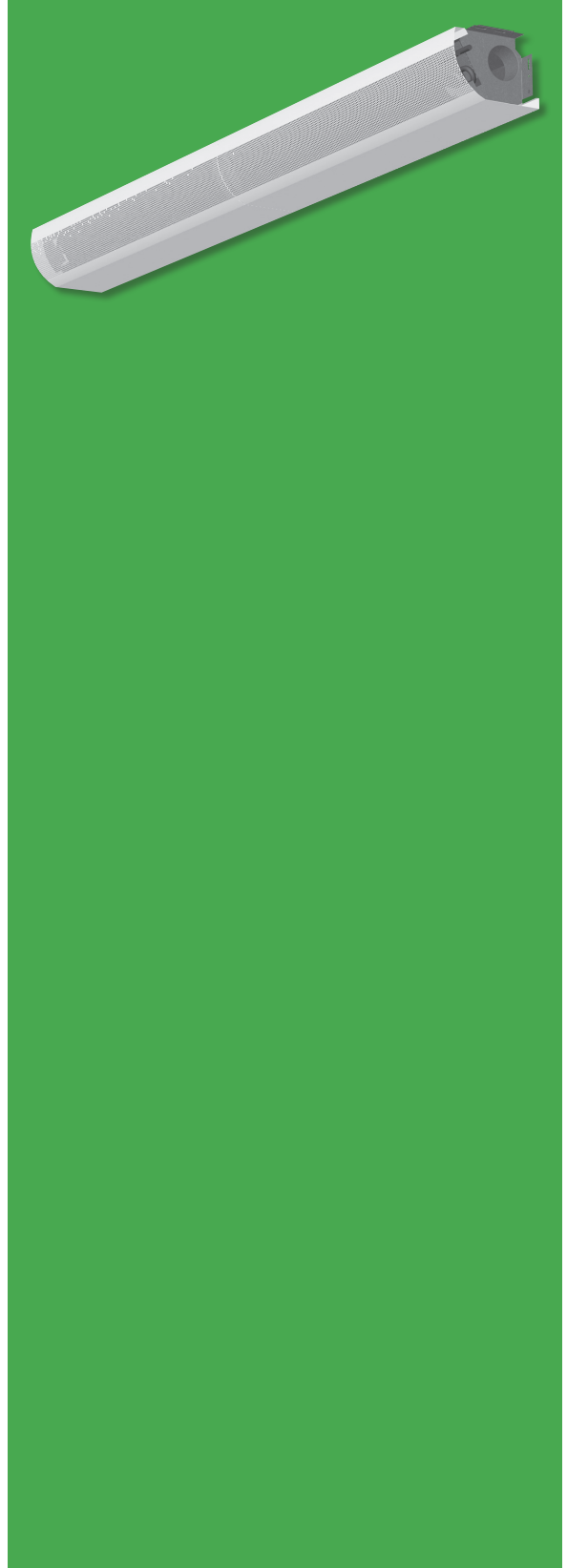
- Round: 4"

COMPATIBLE OPTIONS AND ACCESSORIES

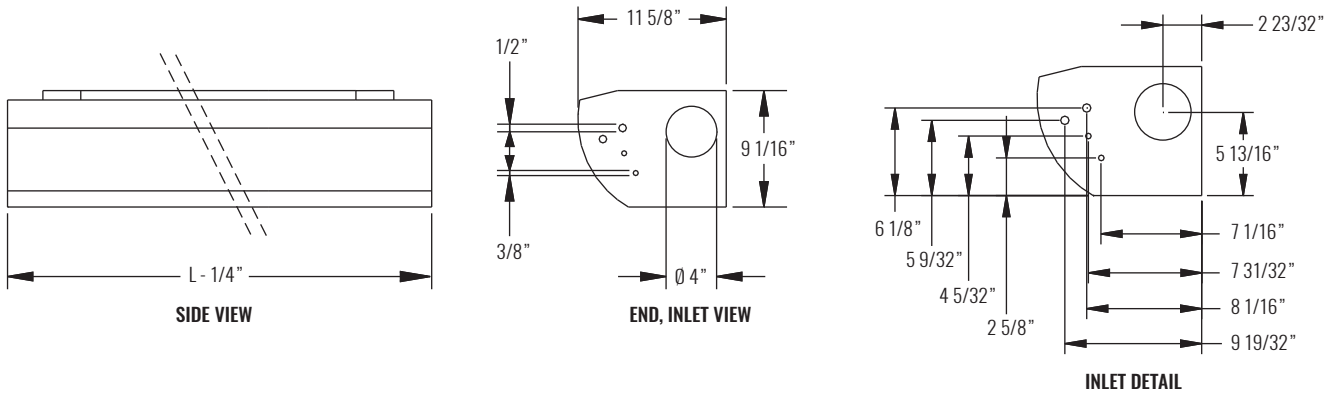
- Venting valves for cooling and/or heating coil
- Duct cover: 32" - 100" (4" increments)
- Flexible hose connections

NOTES:

- ¹ Maximum coil length is beam length less 13".



DIMENSIONAL DATA



NOTES: Cooling/heating water pipe connections are copper 1/2" and 3/8" with a wall thickness of 0.04". The maximum operating pressure of chilled/hot water pipework is 150 psi.

PERFORMANCE AND DESIGN DATA

PERFORMANCE		SUGGESTED DESIGN PARAMETERS		
DESCRIPTION	VALUE	DESCRIPTION	COOLING	HEATING
TOTAL SENSIBLE COOLING (BTU/H PER ACTIVE LINEAL FOOT)	150 - 690	SUPPLY AIR TEMPERATURE	55 - 65°F	60 - 85°F
TOTAL SENSIBLE HEATING (BTU/H PER ACTIVE LINEAL FOOT)	105 - 820	AIRFLOW RATE	25 CFM/ft max	
SOUND LEVEL (NC)	10 - 16	ENTERING WATER TEMPERATURE	56.5 - 70°F	90 - 120°F
		WATER FLOW RATE	.50 - 2.25 GPM	.25 - 1.58 GPM
		WATER ΔP	0 - 10 ft	
		AIR ΔP	0.2 - 0.8 "WG	

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: in cooling, 75°F, 50% relative humidity room design temperature and in heating, 68°F, 50% relative humidity room design temperature. Entering cooling water temp should be selected at least +1.5 degrees higher than room dew point.

MODEL

- ABX - Active 4-way chilled beam

FEATURES

- Combined cooling and heating coil
- 2 and 4 pipe coil configuration
- Cooling/heating water pipe connections are copper 1/2" diameter
- Aluminum fins on water coil
- 5 nozzle sizes available for more precise performance
- 4-way discharge air pattern
- Right and left hand connection available
- Perforated, spring latch access panel for room side access to coil
- 20 gauge, galvanized steel casing
- 5" diameter primary air duct connections
- Low sound levels
- Air boost function adjustment for high density spaces

INLET SIZES

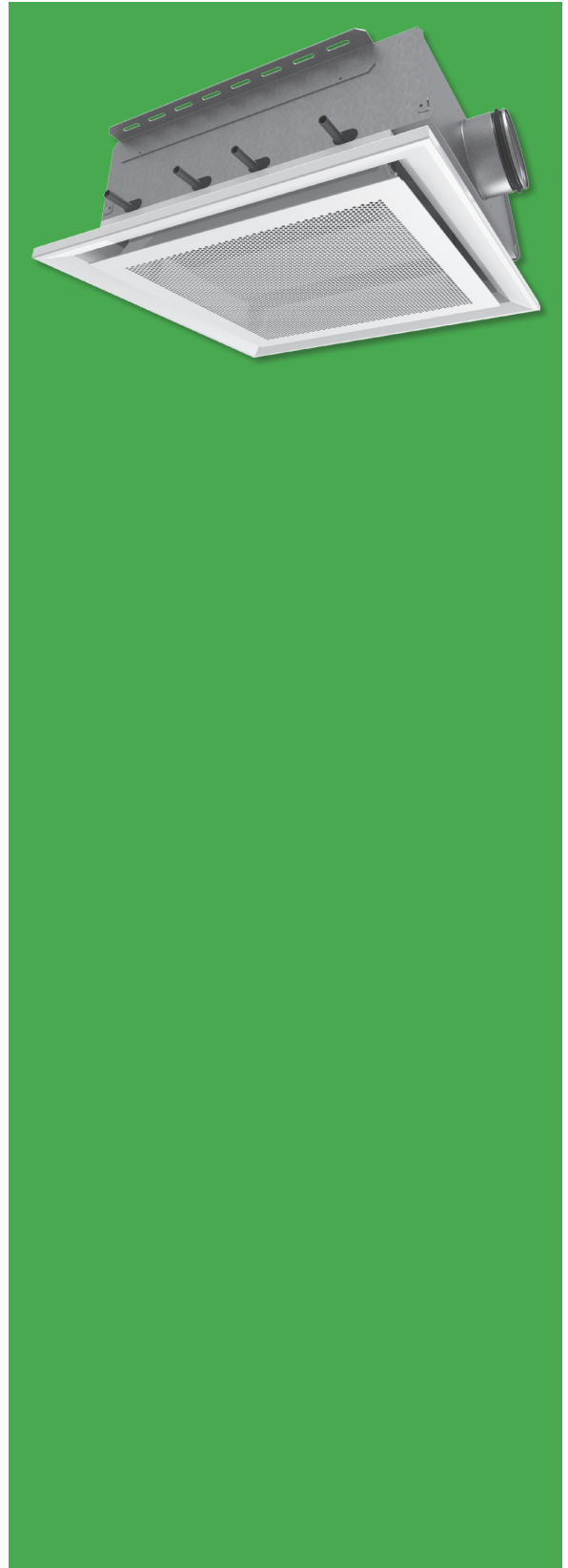
- Width: 24"
- Height: 8 11/16"
- Length: 24", 48"

INLET SIZE

- Round: 5"

COMPATIBLE OPTIONS AND ACCESSORIES

- Flexible hose connections

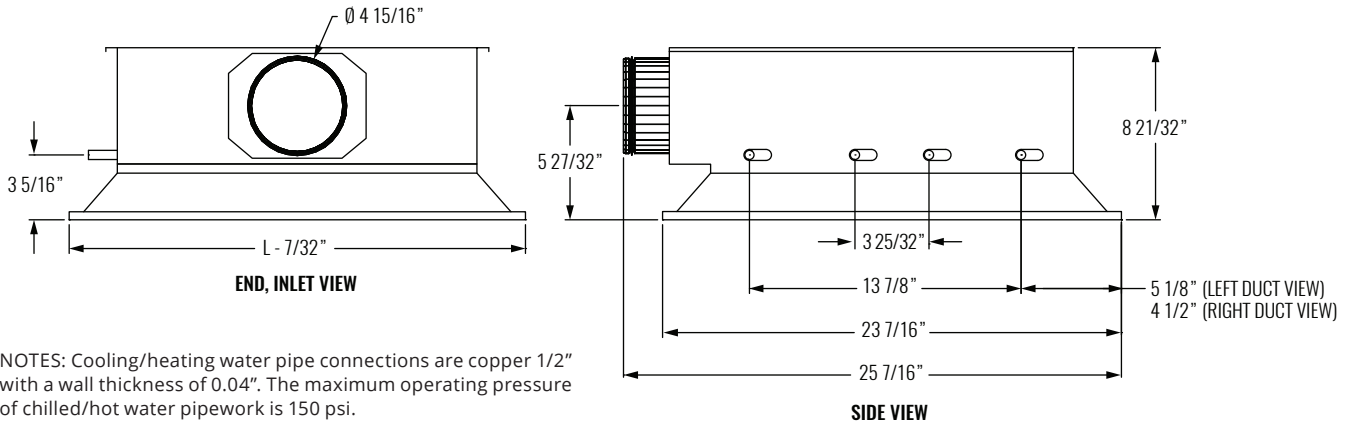


CHILLED BEAMS

ABX



DIMENSIONAL DATA



PERFORMANCE AND DESIGN DATA

PERFORMANCE		SUGGESTED DESIGN PARAMETERS		
DESCRIPTION	VALUE	DESCRIPTION	COOLING	HEATING
TOTAL SENSIBLE COOLING (BTU/H PER ACTIVE LINEAL FOOT)	360 - 1720	SUPPLY AIR TEMPERATURE	55 - 65°F	60 - 85°F
TOTAL SENSIBLE HEATING (BTU/H PER ACTIVE LINEAL FOOT)	340 - 2510	AIRFLOW RATE	25 CFM/ft max	
SOUND LEVEL (NC)	10 - 25	ENTERING WATER TEMPERATURE	56.5 - 70°F	90 - 120°F
		WATER FLOW RATE	.50 - 2.25 GPM	.25 - 1.58 GPM
		WATER ΔP	0 - 10 ft	
		AIR ΔP	0.2 - 0.8" WG	

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: in cooling, 75°F, 50% relative humidity room design temperature and in heating, 68°F, 50% relative humidity room design temperature. Entering cooling water temp should be selected at least +1.5 degrees higher than room dew point.

MODEL

- ACE - Active adaptable exposed chilled beam

FEATURES

- Combined cooling and heating coil
- 2 and 4 pipe coil configuration
- Cooling/heating water pipe connections are copper 1/2" and 3/8" diameter respectively
- Aluminum fins on water coil
- 4 nozzle sizes available for more precise performance
- Venting valves for cooling and/or heating coil
- Rounded or angular 20 gauge, galvanized steel casing
- Round or oval return face perforation
- 5" diameter primary air duct connections
- Low sound levels
- *Krueger by Halton* Velocity Control (HVC)
- Manually operated *Krueger by Halton* Air Quality Control (HAQ)
- Standard finish is Polyester Painted White (RAL 9010)

UNIT SIZE

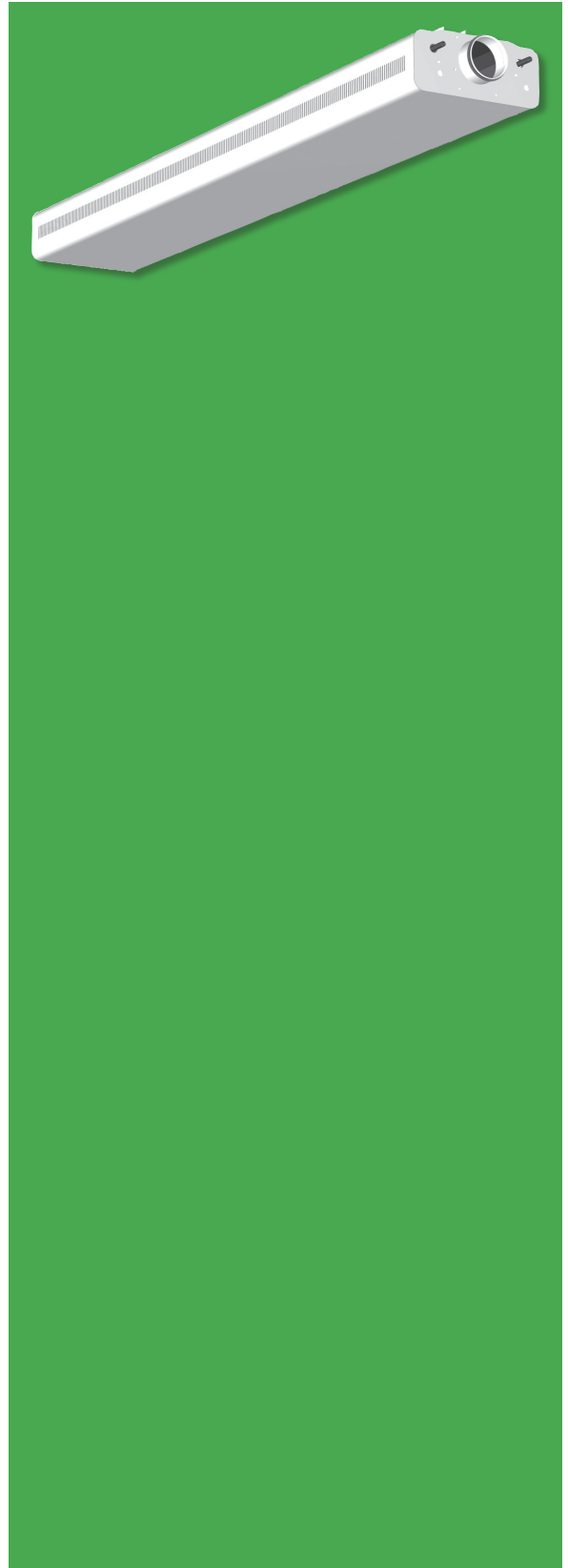
- Width: 16"
- Height: 8"
- Length: 48" - 192" (4" increments)

INLET SIZE

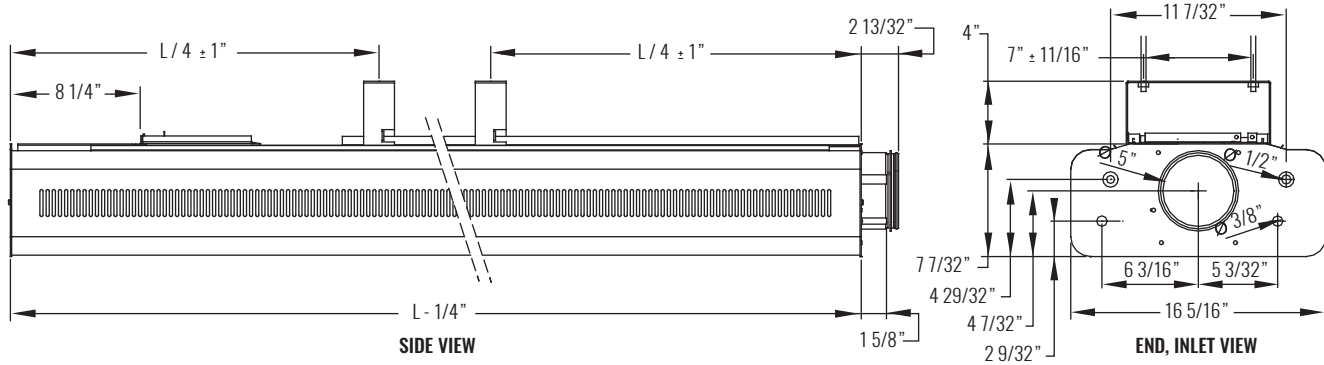
- Round: 5"

COMPATIBLE OPTIONS AND ACCESSORIES

- Electronically actuated *Krueger by Halton* Air Quality Control (HAQ)
- Adjustable or constant flow, factory mounted water valve and actuator (24V or 230V)
- Cable tray
- 12" or 16" duct cover
- Flexible hose connections



DIMENSIONAL DATA



NOTES: Cooling/heating water pipe connections are copper 1/2" and 3/8" with wall thickness of 0.04". The maximum operating pressure for chilled/hot water pipework is 150 psi. The front panel of the chilled beam is divided into two equal sections in chilled beams longer than 96". Combined cooling and heating coil: Krueger by Halton Air Quality control (HAQ damper - manual operation): Located in the non-connection end of the beam. Krueger by Halton Air Quality control (HAQ damper - motorized operation): In retrofitting, motorization of HAQ is possible when manual version is selected. Control Valve: Valves with adjustable K_{vs} value or with max flow limit function. Delivered factory fitted or loose. If control valves are factory fitted, the location of the pipe connections cannot be changed on the site. Delivered factory fitted or loose Cable length 47.24". Cable Tray: Pre-painted, Length = Beam - 22". Airflow adjustment damper (MSM damper): Removable through access panel. Duct cover: Self-supporting cover plate. No need for installation brackets. Available in length 12, 16, 20, 24 inches.

PERFORMANCE AND DESIGN DATA

PERFORMANCE		SUGGESTED DESIGN PARAMETERS		
DESCRIPTION	VALUE	DESCRIPTION	COOLING	HEATING
TOTAL SENSIBLE COOLING (BTU/H PER ACTIVE LINEAL FOOT)	305 - 1510	SUPPLY AIR TEMPERATURE	55 - 65°F	60 - 85°F
TOTAL SENSIBLE HEATING (BTU/H PER ACTIVE LINEAL FOOT)	30 - 1645	AIRFLOW RATE	25 CFM/ft max	
SOUND LEVEL (NC)	10 - 35	ENTERING WATER TEMPERATURE	56.5 - 70°F	90 - 120°F
		WATER FLOW RATE	.50 - 2.25 GPM	.25 - 1.58 GPM
		WATER ΔP	0 - 10 ft	
		AIR ΔP	0.2 - 0.8 "WG	

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: in cooling, 75°F, 50% relative humidity room design temperature and in heating, 68°F, 50% relative humidity room design temperature. Entering cooling water temp should be selected at least +1.5 degrees higher than room dew point.

MODEL

- APA - Passive exposed chilled beam

FEATURES

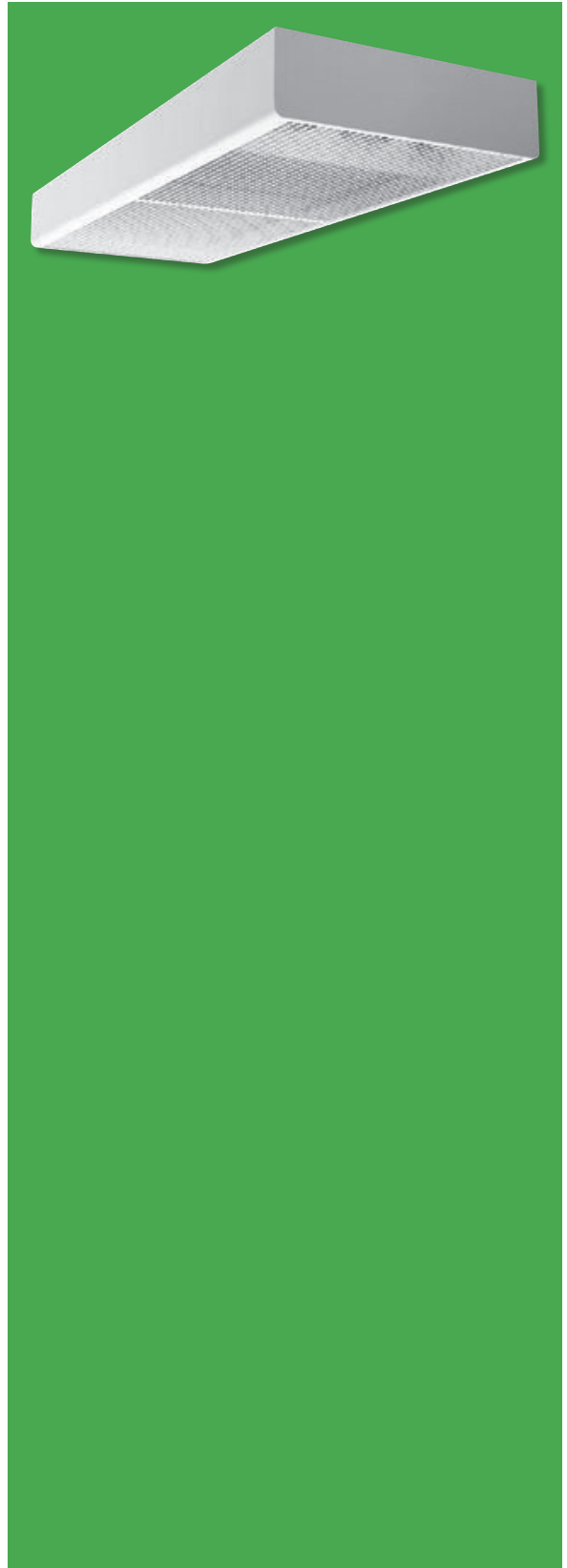
- Pre-painted sheet metal, modular perforated screen with 50% free area
- Steel outer mounted end cap
- 1/2" diameter copper coiling coil pipes
- 1 or 2 loop water coil
- Aluminum fins on water coil
- 4" or 12" coil height
- Rounded or angular edges on casing
- Front or top coil connection
- Low sound levels

UNIT SIZE

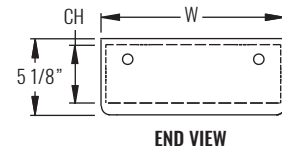
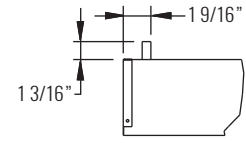
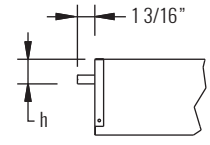
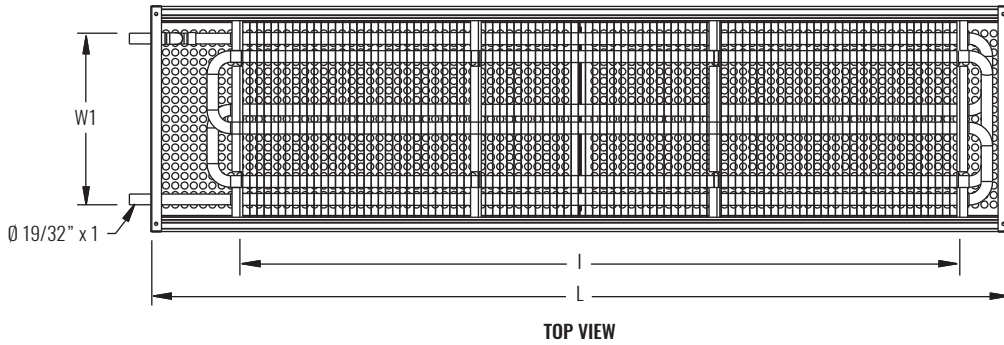
- Width: 12", 18", 24"
- Height: 5 1/8"
- Length: 48" - 200" (4" increments)

COMPATIBLE OPTIONS AND ACCESSORIES

- Factory mounted 2-way control valve
- Flexible hose connections



DIMENSIONAL DATA



DIMENSIONS					
W	CH	h	W1	I	L
12"			11"		
18"	3 15/16"	1 19/32"	15 15/16"	I + 8"	48" - 200"
24"			21 1/4"		
12"			11"		
18"	11 13/16"	1 3/16"	15 15/16"	I + 8"	48" - 200"
24"			21 1/4"		

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE			DESIGN		
BEAM LENGTH	ROOM TEMPERATURE LESS WST	12" UNIT WIDTH	18" UNIT WIDTH	24" UNIT WIDTH	12" UNIT WIDTH	18" UNIT WIDTH	24" UNIT WIDTH
		BTU/hr	BTU/hr	BTU/hr	H ₂ O	H ₂ O	H ₂ O
4'	10	345	457	661	0.5	0.9	1.1
	20	1045	1481	1890			
6'	10	528	745	995	0.8	1.4	1.7
	20	1585	2210	2780			
8'	10	705	980	1300	1.1	1.9	2.3
	20	2080	2850	3540			
10'	10	870	1200	1565	1.4	2.3	2.8
	20	2530	3415	4200			
12'	10	1025	1400	1810	1.7	2.8	3.4
	20	2950	3925	4790			
14'	10	1175	1580	2035	2.0	3.3	4.0
	20	3330	4385	5310			
16'	10	1310	1760	2240	2.3	3.8	4.5
	20	3690	4800	5780			

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature and 1 GPM water flow rate. Cooling Water Side Capacity in BTU/hr is based on Room Temperature minus Water Supply Temperature difference. Capacity is based on a minimum gap of 3" between the top of the beam and the structure above. Capacity is based on chilled beam being mounted exposed with no false ceiling. Passive beam capacity is tested in accordance with EN Standard 14518.

MODEL

- APT - Passive above ceiling mount chilled beam

FEATURES

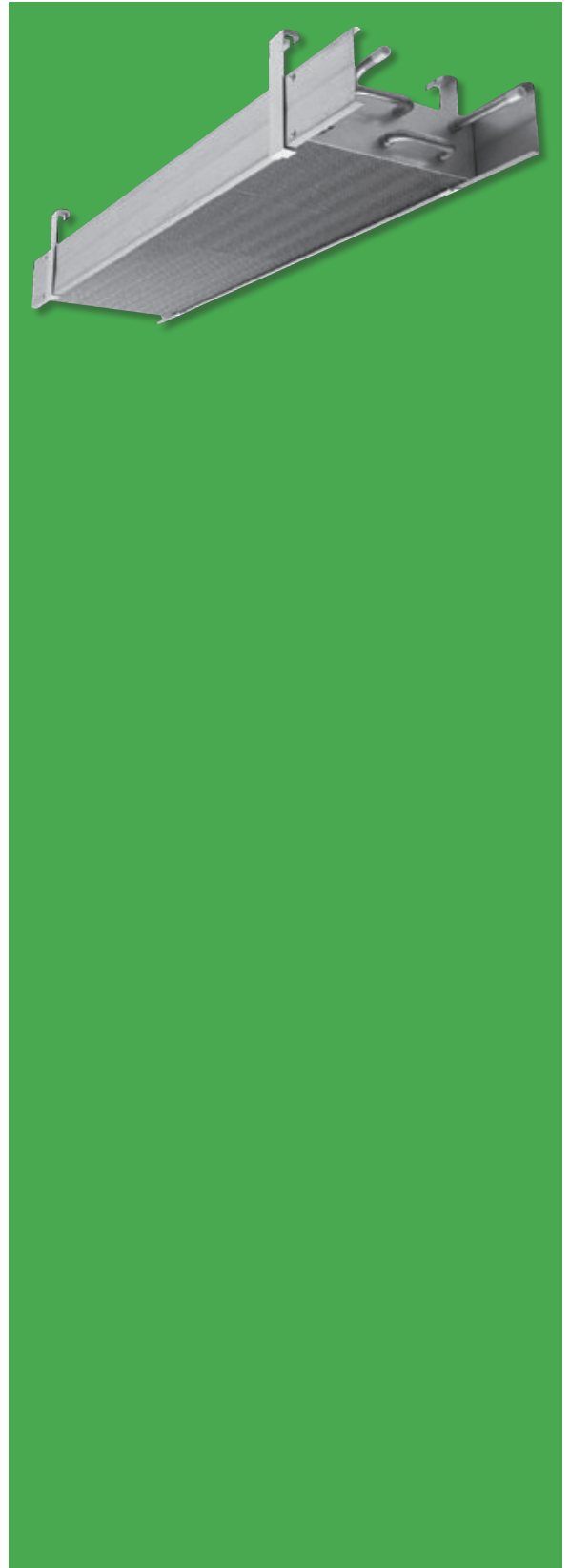
- Galvanized steel side panels
- 1/2" diameter copper coiling coil pipes
- Aluminum fins on water coil
- 1 or 2 loop water coil
- Front or top coil connection
- Low sound levels

UNIT SIZE

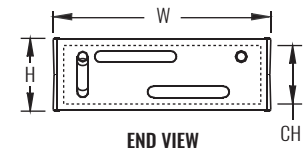
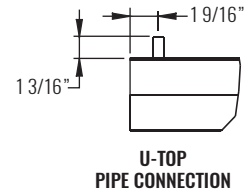
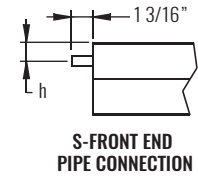
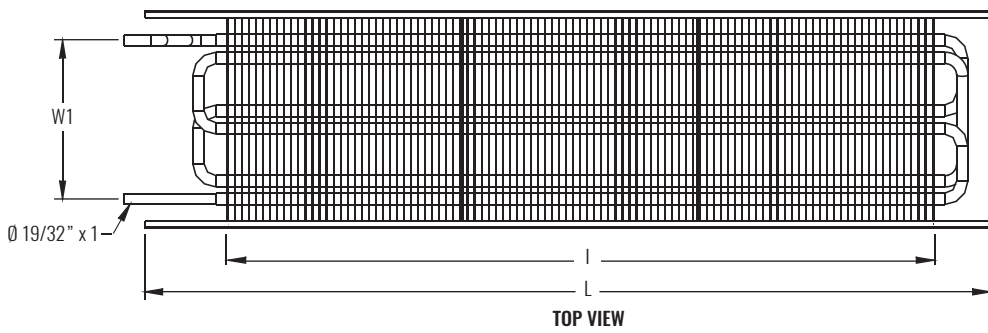
- Width: 12", 18", 24"
- Length: 48" - 200" (increments of 4")
- Coil Height: 3", 6"

COMPATIBLE OPTIONS AND ACCESSORIES

- RAL 9005, black painted 4", 8", or 12" skirt
- Factory mounted 2-way control valve
- Flexible hose connections



DIMENSIONAL DATA



DIMENSIONS						
W	H	CH	h	W1	L	L + 8"
12"				9"		
18"	4"	3"	1 1/2"	15"	40" - 189"	L + 8"
24"				21"		
12"				9"		
18"	6"	4"	1 3/5"	15"	40" - 189"	L + 8"
24"				21"		

PERFORMANCE AND DESIGN DATA

SIZE		PERFORMANCE			DESIGN		
BEAM LENGTH	ROOM TEMPERATURE LESS WST	12" UNIT WIDTH	18" UNIT WIDTH	24" UNIT WIDTH	12" UNIT WIDTH	18" UNIT WIDTH	24" UNIT WIDTH
		BTU/hr	BTU/hr	BTU/hr	H ₂ O	H ₂ O	H ₂ O
4'	10	345	457	661	0.5	0.9	1.1
	20	1045	1481	1890			
6'	10	528	745	995	0.8	1.4	1.7
	20	1585	2210	2780			
8'	10	705	980	1300	1.1	1.9	2.3
	20	2080	2850	3540			
10'	10	870	1200	1565	1.4	2.3	2.8
	20	2530	3415	4200			
12'	10	1025	1400	1810	1.7	2.8	3.4
	20	2950	3925	4790			
14'	10	1175	1580	2035	2.0	3.3	4.0
	20	3330	4385	5310			
16'	10	1310	1760	2240	2.3	3.8	4.5
	20	3690	4800	5780			

NOTES: Information shown is abbreviated. See website for complete information. Performance shown is based on the following operating conditions: 75°F, 50% relative humidity room design temperature and 1 GPM water flow rate. Cooling Water Side Capacity in BTU/hr is based on Room Temperature minus Water Supply Temperature difference. Capacity is based on a minimum gap of 3" between the top of the beam and the structure above. Capacity is based on chilled beam being mounted exposed with no false ceiling. Passive beam capacity is tested in accordance with EN Standard 14518.

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MODEL

- TAD - Radial face critical room supply diffuser; aluminum construction
- TADSS - Radial face critical room supply diffuser; stainless steel construction

FEATURES

- Air Patterns: 90° (1-way) or 180° (2-way)
- High volume, draft free
- Excellent choice for clean air environment applications
- Aluminum construction

PANEL SIZES

- 24"x24"
- 48"x12"¹
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Surface mounting frames
- Stainless steel construction
- TADBACKPAN - Backpan for models TAD and TADSS series of radial face critical room supply diffusers; available in aluminum, stainless steel, or cold rolled steel construction (ordered separately)

NOTES:

- ¹ Only available with 1-way discharge air pattern.



CRITICAL ENVIRONMENT

TAD / TADSS

WEB SEARCH: TAD or TADSS

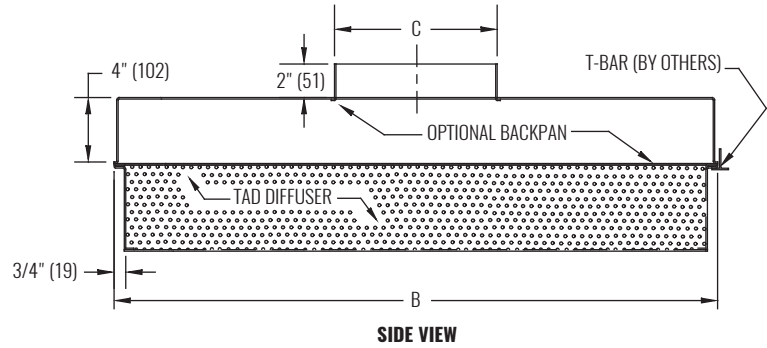
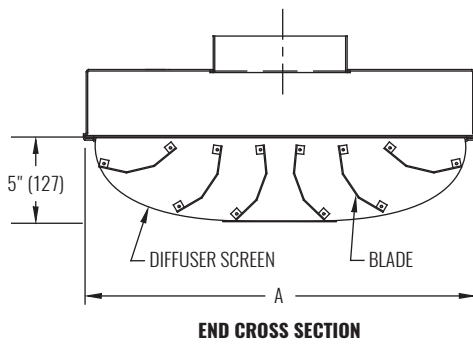
TAD / TADSS

Critical Room, Radial Flow Diffuser



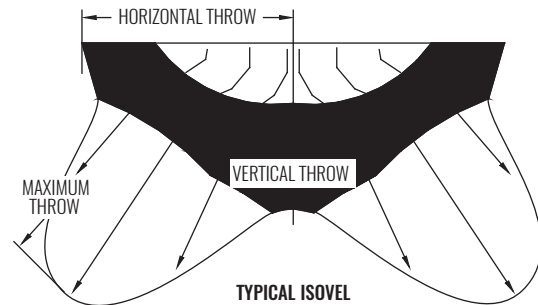
CRITICAL ENVIRONMENT

DIMENSIONAL DATA



DIMENSIONS - 2-WAY UNITS (180° AIR PATTERN)			
PANEL SIZE	A	B	C
24" x 24" (610 x 610)	23 3/4" (603)	23 3/4" (603)	7 7/8" (200)
24" x 48" (610 x 1219)	23 3/4" (603)	47 3/4" (1213)	11 7/8" (302)
24" x 48" (610 x 1219)	23 3/4" (603)	47 3/4" (1213)	11 7/8" (302)

NOTES: Dimensions in parentheses are millimeters (mm). 180°, 2-way throw shown; 90°, 1-way throw is available. To allow for cleaning, optional backpan requires 1 3/4" (44) clearance to remove. (Based on T-bar height of 1 1/8" (29)) Perforated Face: .094" (2) diameter holes 13% open area. Backpan Screen: .040" (1) diameter holes 43% open area.



NOTES: Test cell dimensions 12'x12'x9'. Tested with optional backpan.

TAD / TADSS

PERFORMANCE DATA

PATTERN AND SIZE			PERFORMANCE											
THROW PATTERN	PANEL SIZE		INLET DIA.	NECK VEL	AIR FLOW	Pt	Ps	ΔT	THROW, ft @ FPM					NC
	W	L							HORIZONTAL		MAX	VERTICAL		
	in.	in.							100	50	50	100	50	
90°	24"	48"	12"	1019	800	0.177	0.11	-5	5	6	12	7	-	26
	24"	48"	12"	1019	800	0.177	0.11	-15	4	5	11	8	-	26
	24"	24"	8"	1147	400	0.210	0.13	-5	5	8	12	6	9	18
	24"	24"	8"	1147	400	0.210	0.13	-15	4	6	9	7	-	18
	12"	48"	8"	1147	400	0.229	0.15	-5	3	4	9	3	4	26
	12"	48"	8"	1147	400	0.229	0.15	-15	2	4	8	4	7	26
180°	24"	48"	12"	1019	800	0.167	0.10	-5	3	4	10	3	5	29
	24"	48"	12"	1019	800	0.167	0.10	-15	2	4	8	4	8	29
	24"	24"	8"	1147	400	0.197	0.12	-5	3	4	9	4	7	21
	24"	24"	8"	1147	400	0.197	0.12	-15	2	3	8	8	-	21

NOTES: Information shown is abbreviated. See Krueger website for complete information. Throw values are given for isothermal conditions and terminal velocities of 100 and 50 FPM (0.50 and 0.25 m/s). NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- TADHF - Radial face critical room supply diffuser with HEPA filter brackets and backpan; aluminum construction
- TADSSHF - Radial face critical room supply diffuser with HEPA filter brackets and backpan; stainless steel construction

FEATURES

- Air Patterns: 90° (1-way) or 180° (2-way)
- High volume, draft free
- Excellent choice for clean air environment applications
- Aluminum construction

INLET SIZES

- Round: 8", 10", 12"

PANEL SIZES

- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Stainless steel construction
- TADFILTER - HEPA filter for TADHF and TADSSHF



CRITICAL ENVIRONMENT

TADHF / TADSSHF



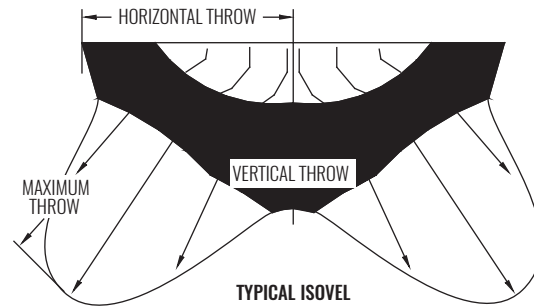
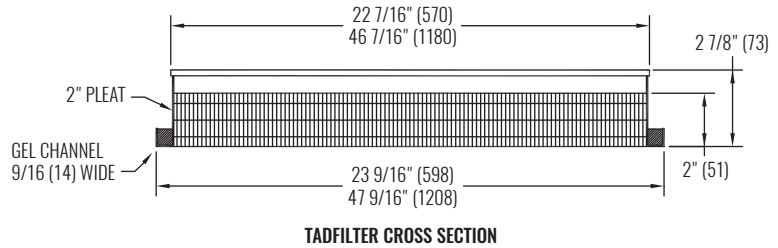
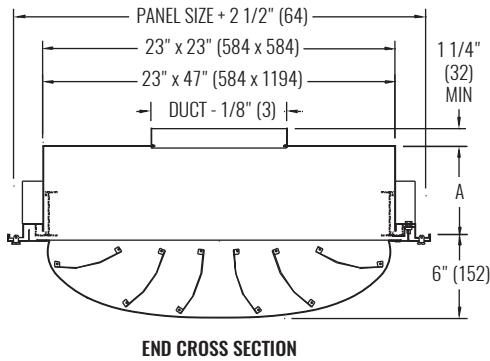
TADHF / TADSSHF

Critical Room, Radial Flow Diffuser with HEPA Filter



CRITICAL ENVIRONMENT

DIMENSIONAL DATA



DIMENSIONS - FOR 2-WAY UNITS (180° AIR PATTERN)		
PANEL SIZE	A	DUCT SIZE
24" x 24" (610 x 610)	6 1/16" (154)	8" (203)
24" x 48" (610 x 1219)	6 13/16" (173)	10" (254)
24" x 48" (610 x 1219)	7 9/16" (192)	12" (305)

NOTES: Dimensions in parentheses are millimeters (mm). 180°, 2-way throw shown; 90°, 1-way throw is available. Safety cables standard (4 per unit). Recommended filter: TADFILTER.

NOTES: Test cell dimensions 12'x12'x9'. Tested with optional backpan.

TADHF / TADSSHF

PERFORMANCE DATA

PATTERN AND SIZE			PERFORMANCE											
THROW PATTERN	PANEL SIZE		INLET DIA.	NECK VEL	AIR FLOW	Pt	Ps	ΔT	THROW, ft @ FPM					NC
	W	L							HORIZONTAL		MAX	VERTICAL		
	in.	in.							100	50	50	100	50	
90°	24"	48"	12"	1019	800	0.177	0.11	-5	5	6	12	7	-	26
	24"	48"	12"	1019	800	0.177	0.11	-15	4	5	11	8	-	26
	24"	24"	8"	1147	400	0.210	0.13	-5	5	8	12	6	9	18
	24"	24"	8"	1147	400	0.210	0.13	-15	4	6	9	7	-	18
	12"	48"	8"	1147	400	0.229	0.15	-5	3	4	9	3	4	26
	12"	48"	8"	1147	400	0.229	0.15	-15	2	4	8	4	7	26
180°	24"	48"	12"	1019	800	0.167	0.10	-5	3	4	10	3	5	29
	24"	48"	12"	1019	800	0.167	0.10	-15	2	4	8	4	8	29
	24"	24"	8"	1147	400	0.197	0.12	-5	3	4	9	4	7	21
	24"	24"	8"	1147	400	0.197	0.12	-15	2	3	8	8	-	21

NOTES: Information shown is abbreviated. See website for complete information. Throw values are given for isothermal conditions and terminal velocities of 100 and 50 FPM (0.50 and 0.25 m/s). NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

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MODEL

- 5RF - Flush face critical room supply diffuser; aluminum construction
- 9RF - Flush face critical room supply diffuser; stainless steel construction

FEATURES

- 90° and 180° discharge air patterns
- Removable flush face
- High volume, draft free

INLET SIZES

- Round: 8", uses 24"x24" panel size only
- Round: 10", uses 24"x24" and 48"x24" panel sizes
- Round: 12", uses 48"x24" panel size only

FRAME STYLES

- F22 - Surface mount ¹
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Surface mounting frames

NOTES:

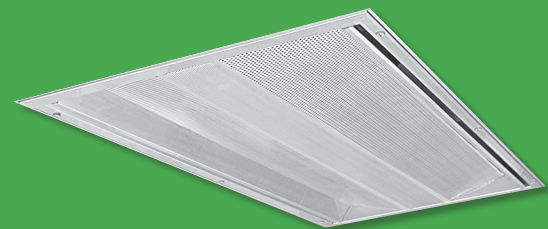
¹ F22 includes separate plaster frame, shipped loose for field installation (model 5HCF23).



RADIAFLO™ 90°, 1-WAY



RADIAFLO™ 180°, 2-WAY



CRITICAL ENVIRONMENT

RADIAFLO (5RF / 9RF)

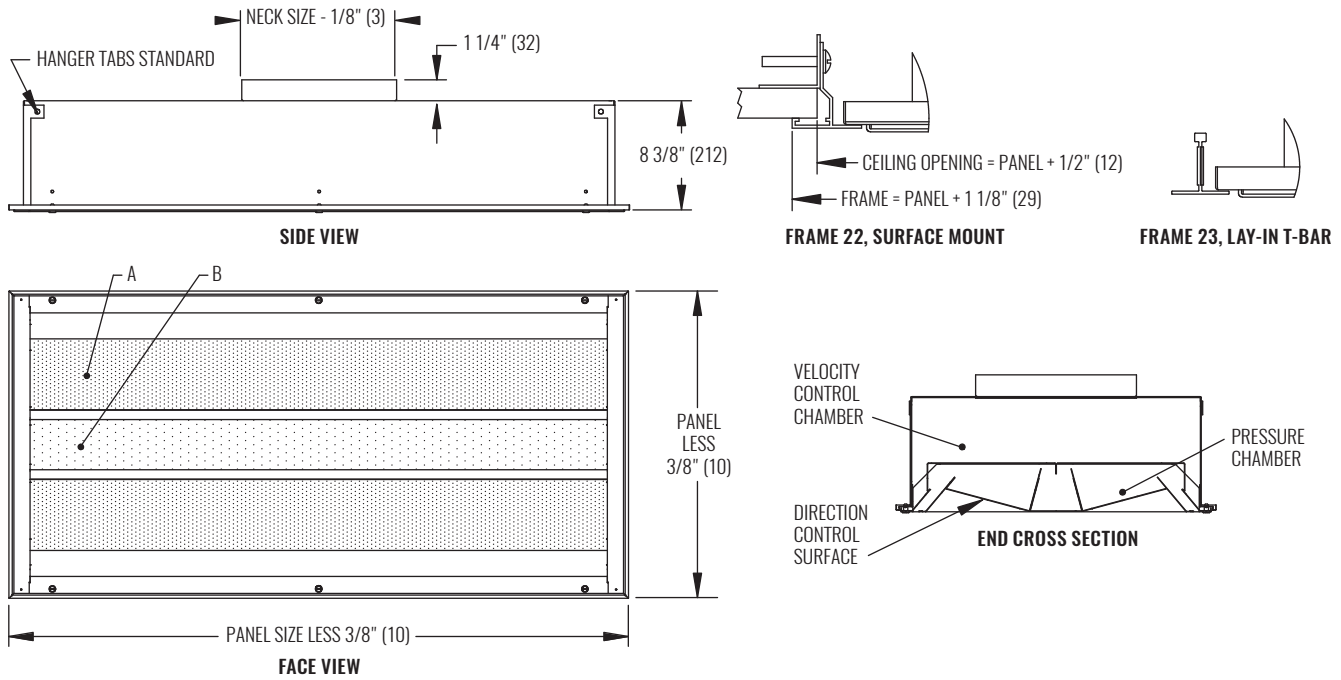
WEB SEARCH: 5RF or 9RF

RADIAFLO (5RF / 9RF)

Critical Room, Flush Face Diffuser



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). 180°, 2-way throw shown; 90°, 1-way throw is available.

PERFORMANCE DATA

PATTERN AND SIZE			PERFORMANCE											
THROW PATTERN	PANEL SIZE		INLET DIA.	NECK VEL	AIR FLOW	Pt	Ps	ΔT	THROW (ft @ FPM)					SOUND
	W	L							HORIZONTAL		MAX	VERTICAL		
	in.	in.							100	50	50	100	50	
180°	24	24	8	1146	400	0.131	0.049	-5	2	4	7	3	5	32
	24	24	8	1146	400	0.131	0.049	-15	2	5	8	7	8	32
	24	24	10	963	525	0.126	0.069	-5	3	5	8	3	6	30
	24	24	10	963	525	0.126	0.069	-15	4	6	9	8	9	30
	24	48	10	1193	650	0.163	0.074	-5	2	3	6	4	6	32
	24	48	10	1193	650	0.163	0.074	-15	2	3	9	5	9	32
	24	48	12	1070	800	0.160	0.089	-5	4	5	9	3	6	29
	24	48	12	1070	800	0.160	0.089	-15	4	6	9	7	9	29

NOTES: Information shown is abbreviated. See Krueger website for complete information. Throw values are given for isothermal conditions and terminal velocities of 100 and 50 FPM (0.50 and 0.25 m/s). NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

CRITICAL ENVIRONMENT

RADIAFLO (5RF / 9RF)

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MODEL

- 5RFHF - Flush face critical room supply diffuser with HEPA filter brackets and backpan; aluminum construction
- 9RFHF - Flush face critical room supply diffuser with HEPA filter brackets and backpan; stainless steel construction

FEATURES

- 90° and 180° discharge air patterns
- Removable flush face
- High volume, draft free

INLET SIZES

- Round: 8", uses 24"x24" panel size only
- Round: 10", uses 24"x24" and 48"x24" panel sizes
- Round: 12", uses 48"x24" panel size only

FRAME STYLES

- F22 - Surface mount ¹
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Surface mounting frames
- RFFILTER - HEPA filter for 5RFHF and 9RFHF

NOTES:

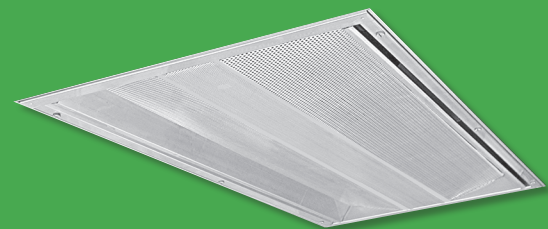
¹ F22 includes separate plaster frame, shipped loose for field installation (model 5HCF23).



RADIAFLO™ 90°, 1-WAY



RADIAFLO™ 180°, 2-WAY



CRITICAL ENVIRONMENT

RADIAFLO (5RFHF / 9RFHF)

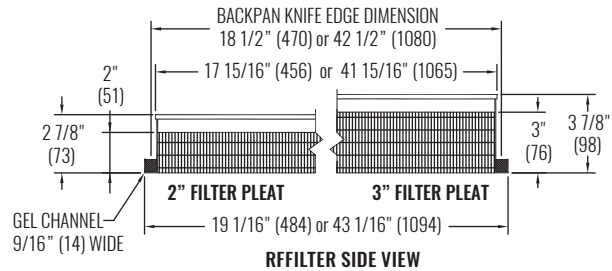
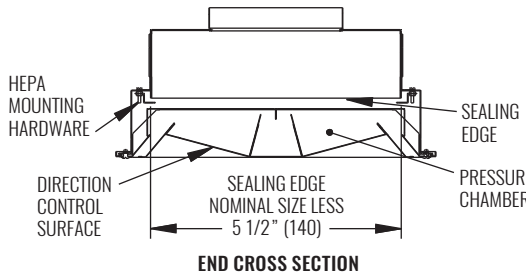
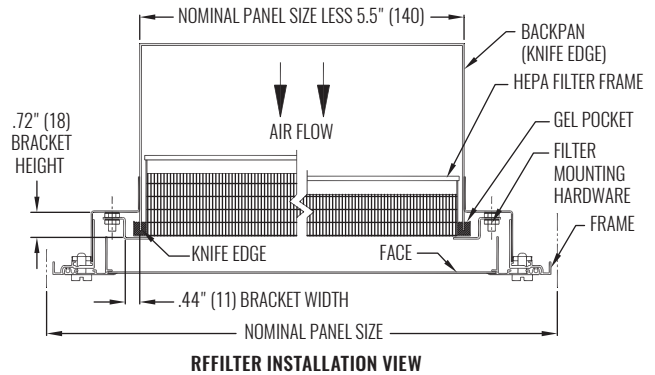
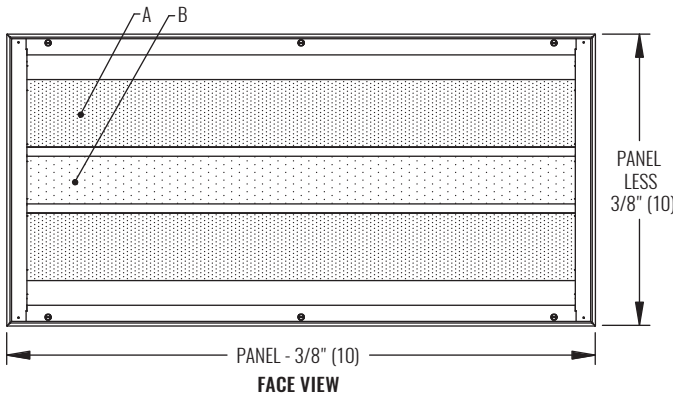
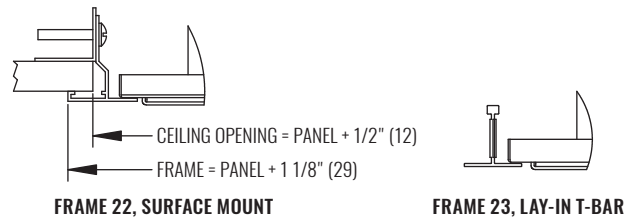
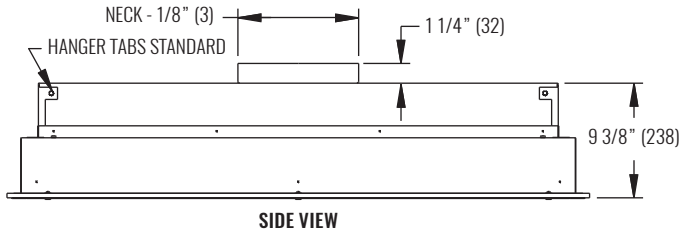
WEB SEARCH: 5RFHF or 9RFHF

RADIAFLO (5RFHF / 9RFHF)

Critical Room, Flush Face Diffuser with HEPA Filter



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are millimeters (mm). 180°, 2-way throw shown; 90°, 1-way throw is available.

PERFORMANCE DATA

PATTERN AND SIZE			PERFORMANCE											
THROW PATTERN	PANEL SIZE		INLET DIA.	NECK VEL	AIR FLOW	Pt	Ps	ΔT	THROW (ft @ FPM)					SOUND
	W	L							HORIZONTAL		MAX	VERTICAL		
	in.	in.							100	50	50	100	50	
180°	24	24	8	1146	400	0.131	0.049	-5	2	4	7	3	5	32
	24	24	8	1146	400	0.131	0.049	-15	2	5	8	7	8	32
	24	24	10	963	525	0.126	0.069	-5	3	5	8	3	6	30
	24	24	10	963	525	0.126	0.069	-15	4	6	9	8	9	30
	24	48	10	1193	650	0.163	0.074	-5	2	3	6	4	6	32
	24	48	10	1193	650	0.163	0.074	-15	2	3	9	5	9	32
	24	48	12	1070	800	0.160	0.089	-5	4	5	9	3	6	29
	24	48	12	1070	800	0.160	0.089	-15	4	6	9	7	9	29

NOTES: Information shown is abbreviated. See Krueger website for complete information. Throw values are given for isothermal conditions and terminal velocities of 100 and 50 FPM (0.50 and 0.25 m/s). NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

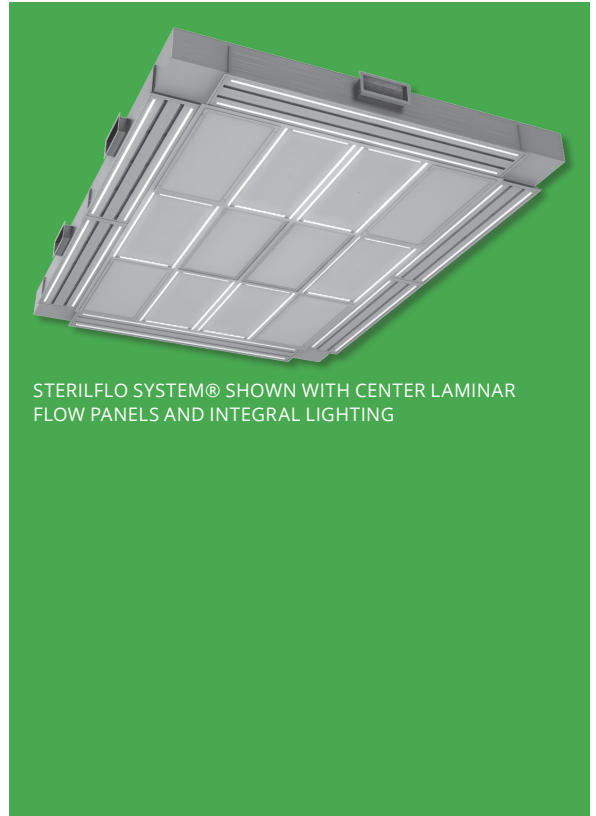
- Sterilflo System® - Custom operating room particulate control system, stainless steel construction

STERILFLO SYSTEM® FEATURES

- 100% type 304 stainless steel
- Radius corners
- Custom layouts; design specific drawings
- Tested during actual surgical procedures
- Superior air temperature and velocity control at the patient
- 1/4 turn fasteners for cleaning
- Class 1 Microbiologic Clean Air certification
- Complies with ASHRAE Standard 170
- Factory certifications (optional)
- High output LED lights (optional)

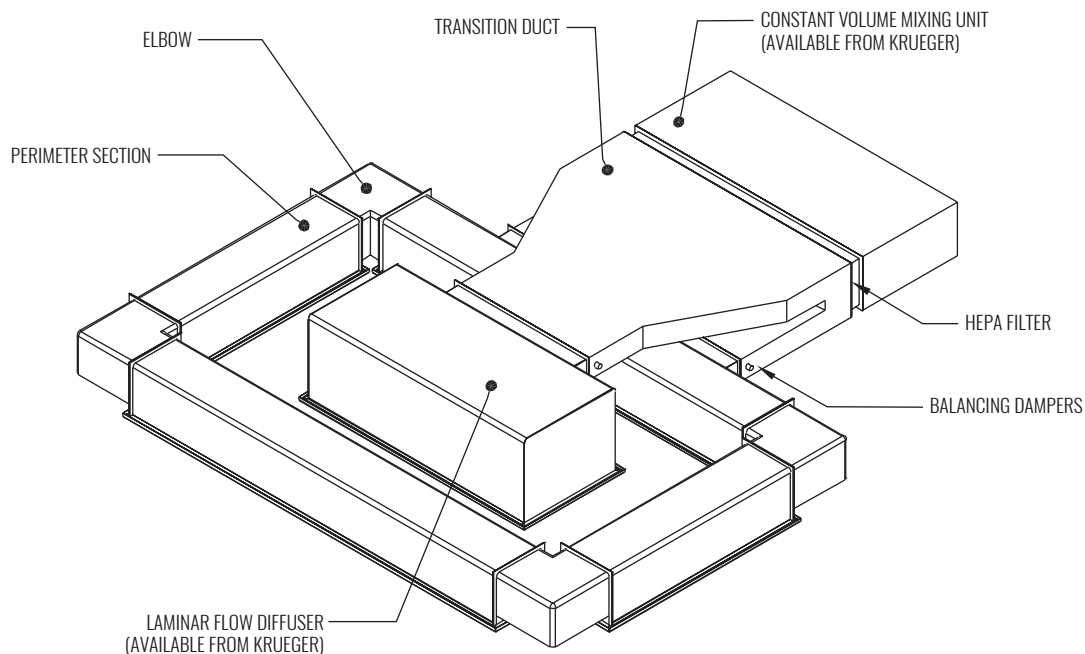
SYSTEM SIZES

- Width and height are custom for your operating room



CRITICAL ENVIRONMENT

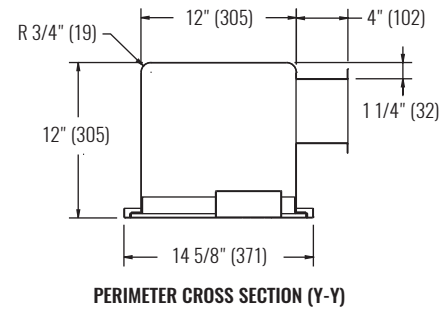
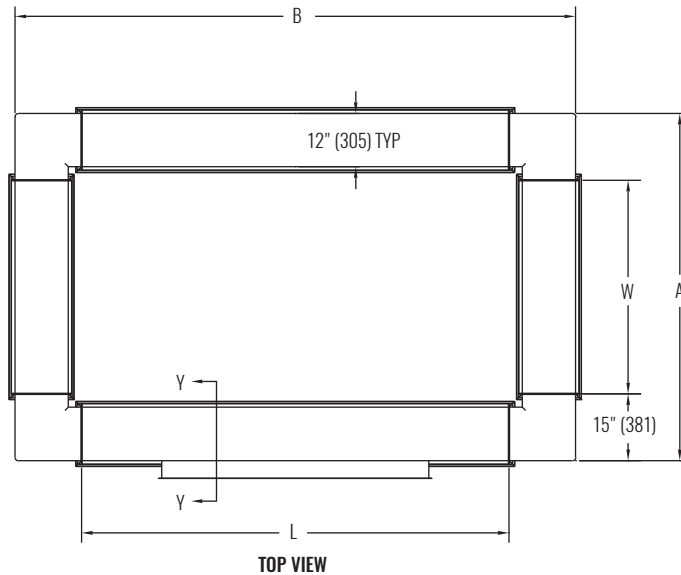
INSTALLATION VIEW



STERILFLO



DIMENSIONAL AND PERFORMANCE DATA



MODEL	PERFORMANCE			DIMENSIONS			
NUMBER	MIN CFM	MAX CFM	MID-RANGE CFM	W	L	A	B
48	900	1620	1300	4' 0"	8' 0"	6' 6"	10' 6"
58	980	1760	1400	5' 0"	8' 0"	7' 6"	10' 6"
410	1050	1890	1500	4' 0"	10' 0"	6' 6"	12' 6"
68	1050	1890	1500	6' 0"	8' 0"	8' 6"	10' 6"
510	1130	2030	1600	5' 0"	10' 0"	7' 6"	12' 6"
412	1200	2160	1700	4' 0"	12' 0"	6' 6"	14' 6"
610	1200	2160	1700	6' 0"	10' 0"	8' 6"	12' 6"
88	1200	2160	1700	8' 0"	8' 0"	10' 6"	10' 6"
512	1280	2300	1800	5' 0"	12' 0"	7' 6"	14' 6"
612	1350	2430	1900	6' 0"	12' 0"	8' 6"	14' 6"
810	1350	2430	1900	8' 0"	10' 0"	10' 6"	12' 6"
812	1500	2700	2100	8' 0"	12' 0"	10' 6"	14' 6"
1010	1500	2700	2100	10' 0"	10' 0"	12' 6"	12' 6"
814	1660	2980	2300	8' 0"	14' 0"	10' 6"	16' 6"
1212	1800	3240	2500	12' 0"	12' 0"	14' 6"	14' 6"
1214	1950	3500	2700	12' 0"	14' 0"	14' 6"	16' 6"

STATIC PRESSURE REQUIREMENTS		NOISE CRITERIA	
PERIMETER CFM PER LINEAR FOOT OF PLENUM	PERIMETER STATIC PRESSURE "WG	CFM PER LINEAR FOOT OF PLENUM	NC
20	0.016	20	12
25	0.024	25	18
30	0.034	30	23
35	0.046	35	28
40	0.060	43	32
45	0.075	45	35
50	0.092	50	39

NOTES: Information shown is abbreviated. See Krueger website for complete information. Dimensions in parentheses are millimeters (mm). Static Pressure Requirements: Add pressure drop for HEPA filter if required. Static pressure based on inlet velocities not exceeding 500 FPM. Noise Criteria: NC values are based on sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Table is based on model 48 with 24 ft linear perimeter. For each additional 4 ft, add 1 NC. Table is based on perimeter panel only. In a properly designed system, the center panels will not add to total room NC.

MODEL

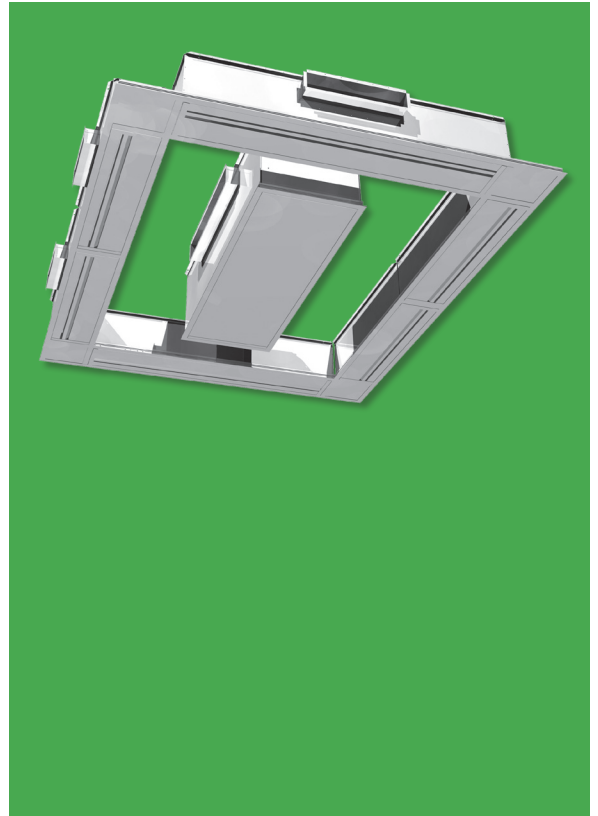
- Sterilflex™ - Modular operating room particulate control system, aluminum construction

STERILFLEX SYSTEM™ FEATURES

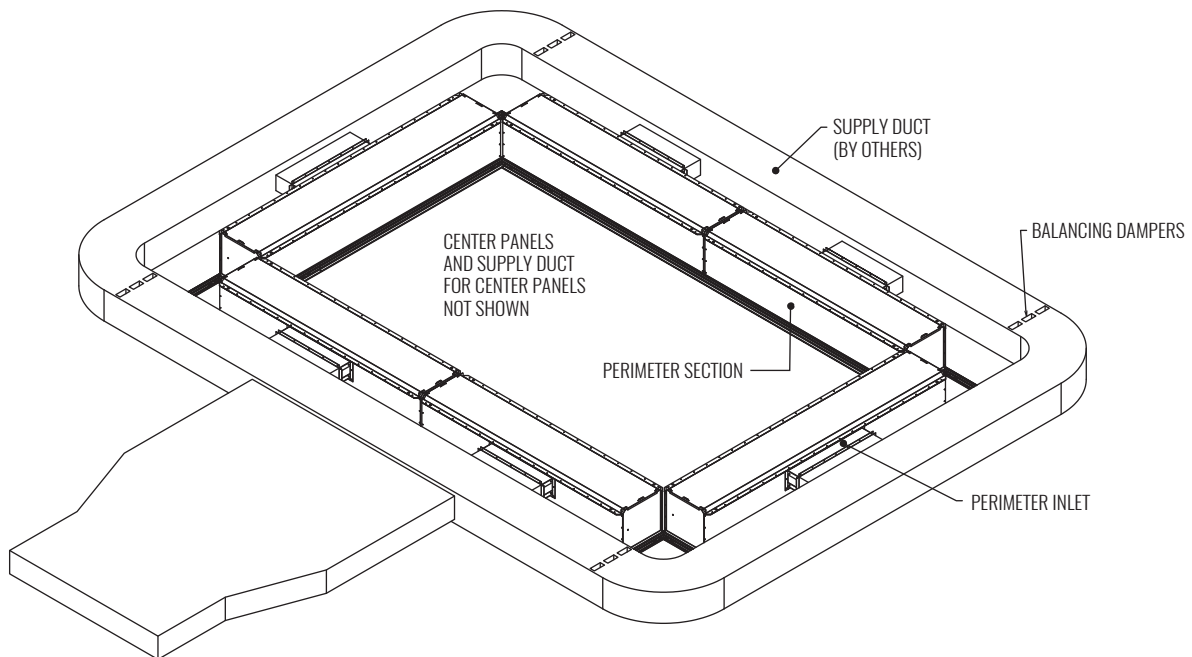
- Aluminum construction
- Best-in-class performance with a modular design
- Integra-grid ceiling frame insures a fast, accurate installation
- Compatible with sheetrock and T-bar ceiling types
- Left, center, and right side plenum inlet location
- Top centered plenum inlet location (optional)
- Lay-in faces
- Seismic restraints

MODULE SIZES

- Perimeter Module Sizes: 4 ft, 5 ft, 6 ft
- Center Module Sizes: 1x5 ft, 2x2 ft, 2x3 ft, 2x4ft, 2x5 ft, 2x6 ft



CRITICAL ENVIRONMENT

INSTALLATION VIEW

STERILFLEX

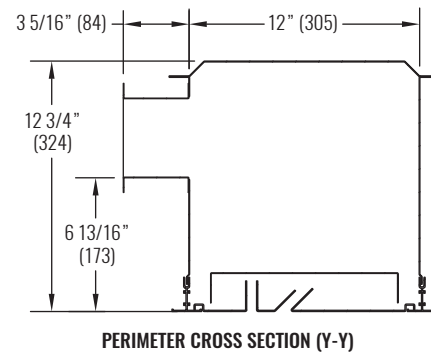
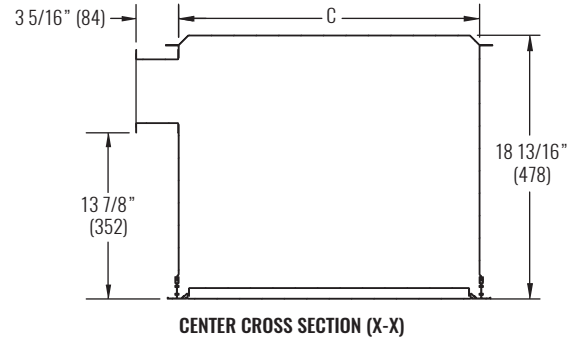
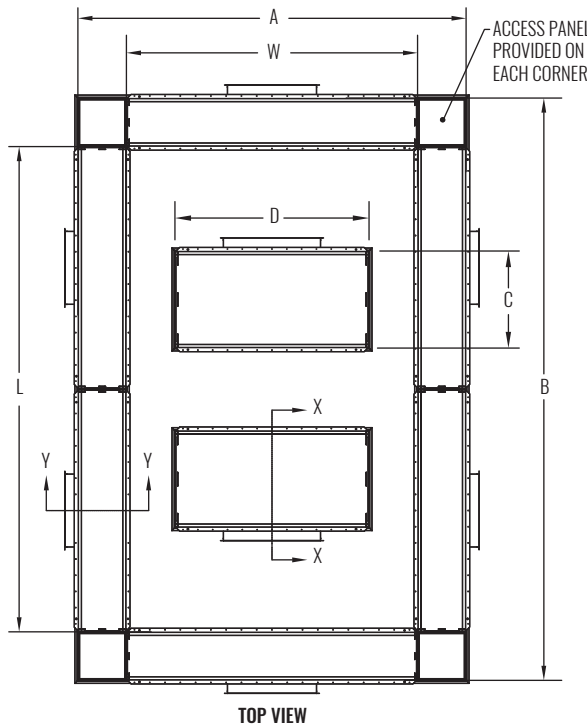


STERILFLEX SYSTEM™

Modular Hospital Operating Room Particulate Control System



DIMENSIONAL AND PERFORMANCE DATA



SIZE	PERFORMANCE			DIMENSIONS						
	MODEL	MIN CFM	MAX CFM	MID-RANGE CFM	PERIMETER AIR CURTAIN				CENTER LAMINAR PANEL	
				W	L	A	B	C	D	QTY
0608-2	1060	1900	1500	6' 0"	8' 0"	8' 0"	10' 0"	2' 0"	3' 0"	2
0510-2	1130	2030	1600	5' 0"	10' 0"	7' 0"	12' 0"	2' 0"	4' 0"	2
0808-2	1210	2170	1700	8' 0"	8' 0"	10' 0"	10' 0"	2' 0"	4' 0"	2
0512-4	1280	2300	1800	5' 0"	12' 0"	7' 0"	14' 0"	2' 0"	2' 0"	4
0810-4	1360	2440	1900	8' 0"	10' 0"	10' 0"	12' 0"	2' 0"	2' 0"	4
1010-2	1510	2710	2100	10' 0"	10' 0"	12' 0"	12' 0"	2' 0"	5' 0"	2
1012-3	1660	2980	2300	10' 0"	12' 0"	12' 0"	14' 0"	2' 0"	4' 0"	3
1212-4	1810	3250	2500	12' 0"	12' 0"	14' 0"	14' 0"	2' 0"	3' 0"	4
1214-2	1960	3520	2750	12' 0"	14' 0"	14' 0"	16' 0"	2' 0"	6' 0"	2
1216-4	2110	3790	2950	12' 0"	16' 0"	14' 0"	18' 0"	2' 0"	4' 0"	4

STATIC PRESSURE REQUIREMENTS				NOISE CRITERIA	
PERIMETER CFM PER LINEAR FOOT OF PLENUM	PERIMETER STATIC PRESSURE "WG	CENTER CFM PER SQUARE FOOT OF PANEL	CENTER STATIC PRESSURE "WG	CFM PER LINEAR FOOT OF PLENUM	NC
20	0.016	20	0.042	20	12
25	0.024	25	0.065	25	18
30	0.034	30	0.093	30	23
35	0.046	35	0.125	35	28
40	0.06	40	0.165	43	32
45	0.075	45	0.205	45	35
50	0.092	50	0.25	50	39

NOTES: Information shown is abbreviated. See Krueger website for complete information. Dimensions in parentheses are millimeters (mm). Static Pressure Requirements: Static pressure based on inlet velocities not exceeding 500 FPM. Noise Criteria: NC values are based on sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Bottom table is based on model 0408 with 24 ft linear perimeter. For each additional 4 ft, add 1 NC. Table is based on perimeter panel only. In a properly designed system, the center panels will not add to total room NC.

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MODEL

- 5000 - Laminar flow panel

FEATURES

- Low velocity, non-aspirating
- Aluminum, stainless steel, or cold rolled steel construction
- Quick opening (1/4 turn) fasteners permit complete removal of the face
- Safety cables (2) prevent accidental dropping of face
- Multiple perforated face panels included for large sizes
- Button plug on perforated face is removable for adjustment of neck mounted damper
- Ideal for use in restricted budget surgery areas, pharmaceutical manufacturing, industrial, electronic, aerospace, and other clean room applications

INLET SIZES

- Round: 6" - 12" (2" increments)

FRAME STYLES

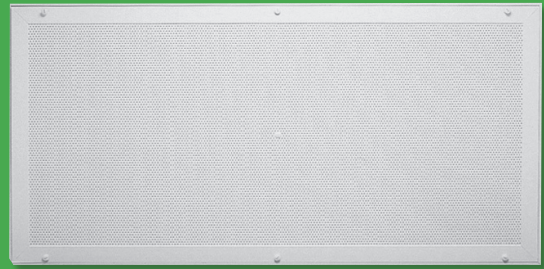
- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

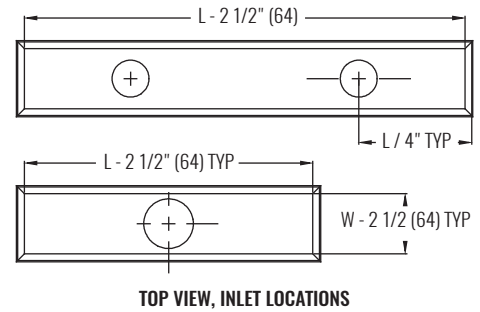
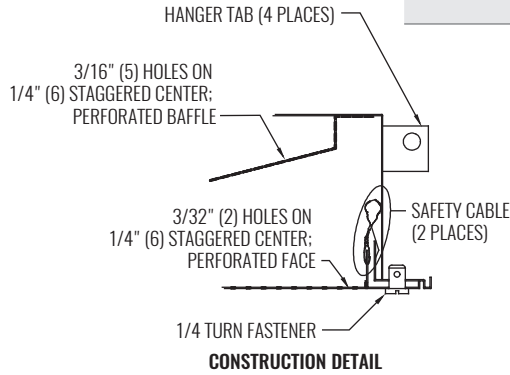
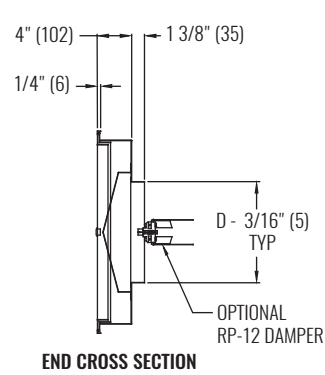
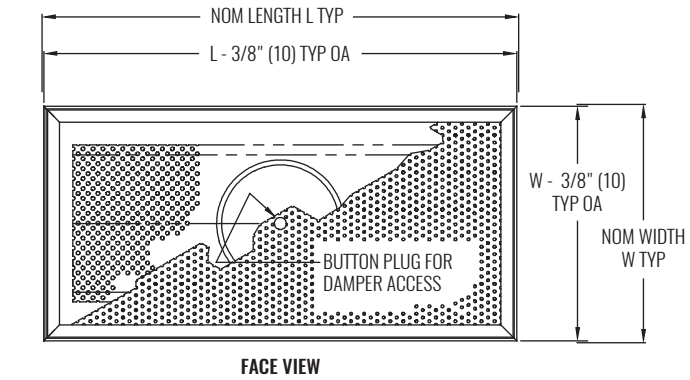
- 24"x24"
- 36"x24"
- 48"x12"
- 48"x24"
- 48"x36"
- 60"x12"
- 60"x24"
- 60"x36"
- 72"x12"
- 72"x24"
- 72"x36"

COMPATIBLE OPTIONS AND ACCESSORIES

- Volume dampers
- Integral T5 lights
- External insulation
- PR10 - Steel, radial opposed blade damper
- PRN100 - Steel, radial fan damper
- RP12 - Steel, butterfly bladed damper
- PRD10 - Steel, radial opposed blade damper (duct mount)
- PRD100 - Steel, radial fan damper (duct mount)
- PR12 - Steel, butterfly bladed damper (duct mount)
- RSG15 - Steel, round straightening grid (duct mount)
- PRSG15 - Steel, round straightening grid



DIMENSIONAL DATA



DIMENSIONS			
NOMINAL UNIT SIZE		NOMINAL INLET SIZE	
W	L	D	QTY
12" (305)	48" (1219)	6" (152) or 8" (203)	1
	60" (1524)		1
	72" (1828)		2
24" (610)	24" (610)	6" (152), 8" (203), 10" (254), or 12" (305)	1
	36" (914)		1
	48" (1219)		1
	60" (1524)		1
	72" (1828)		2
36" (914)	48" (1219)	8" (203), 10" (254), or 12" (305)	1
	60" (1524)		2
	72" (1828)		2

NOTES: Dimensions in parentheses are millimeters (mm). Dimensional data shown is for a 48"x24" panel. See Krueger's website for additional panel sizes.

PERFORMANCE DATA

SIZE	PERFORMANCE						
	FLOW RATE	Ps	VELOCITY @ 6' BELOW PANEL				NC
			5° FΔT	10° FΔT	15° FΔT	20° FΔT	
CFM/ft ²	"WG	FPM	FPM	FPM	FPM		
SINGLE PANEL	10	0.008	20	25	30	35	<20
	20	0.032	35	40	45	55	<20
	30	0.072	50	60	70	80	21
	40	0.128	65	80	95	105	25
15-30 ft ²	10	0.008	20	30	30	35	<20
	20	0.032	35	45	50	60	22
	30	0.072	50	65	80	90	26
	40	0.128	70	90	105	-	30
Over 30 ft ²	10	0.008	25	30	35	40	21
	20	0.032	40	50	60	65	25
	30	0.072	60	75	90	100	29
	40	0.128	80	100	N/A	N/A	33

NC CORRECTIONS									
ft ² OF PANELS	4	8	16	24	32	40	48	64	>64
m ² OF PANELS	0.4	0.7	1.5	2.2	3.0	3.7	4.5	6.0	>6
NC CORRECTION	-3	0	3	5	6	7	8	9	10

NOTES: Information shown is abbreviated. See Krueger website for complete information. NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

NOTES: Data is based on a 24" x 48" 5000 with 12" inlet and full, open damper. NC is based on a 10dB room attenuation sound power re 10⁻¹² Watts. Multiple panels will add to the sound level. See the table to the left for corrections.

MODEL

- 5000HF - Laminar flow panel with gel seal HEPA filter brackets
- 5FILTER - HEPA filter for 5000HF

FEATURES

- Low velocity, non-aspirating
- Aluminum or stainless steel construction
- Quick opening (1/4 turn) fasteners permit complete removal of the face
- Fast, easy room-side HEPA filter removal
- Safety cables (2) prevent accidental dropping of face
- Ideal for use in restricted budget surgery areas, pharmaceutical manufacturing, industrial, electronic, aerospace, and other clean room applications

INLET SIZES

- Round: 8" - 12" (2" increments)

FRAME STYLES

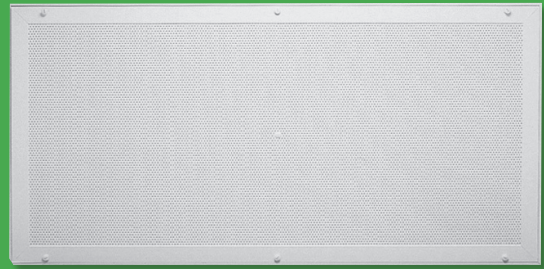
- F22 - Surface mount
- F23 - Lay-in T-bar

PANEL SIZES

- 24"x24"
- 24"x36"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Integral T5 lights
- External insulation



CRITICAL ENVIRONMENT

5000HF



5000HF

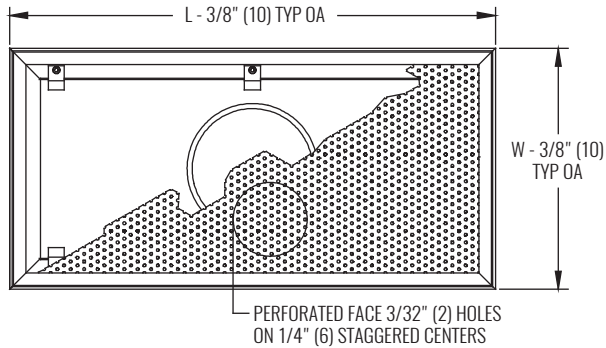
Laminar Flow Panel with HEPA Filter



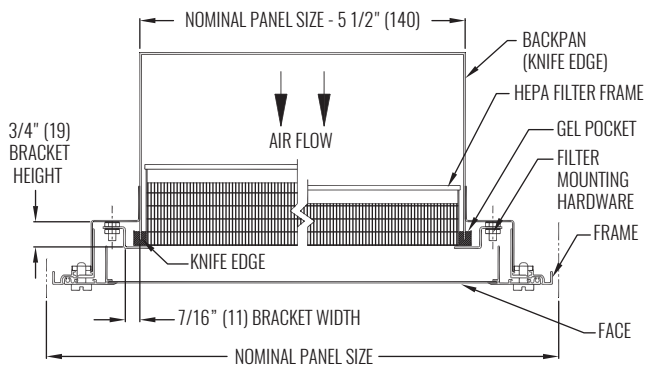
CRITICAL ENVIRONMENT

5000HF

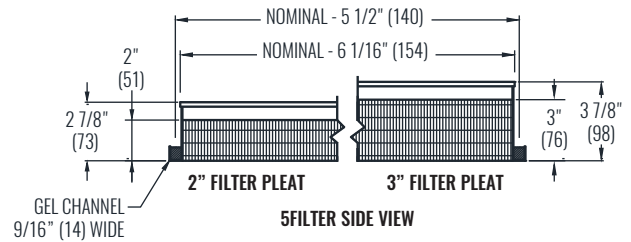
DIMENSIONAL DATA



FACE VIEW



5FILTER INSTALLATION VIEW



5FILTER SIDE VIEW

DIMENSIONS			
NOMINAL UNIT SIZE		NOMINAL INLET SIZE	
L	W	D	H
24" (610)	24" (610)	8" (203)	7" (178)
		10" (254)	7 3/4" (197)
36" (914)	24" (610)	8" (203)	7 3/8" (187)
		10" (254)	8 1/8" (206)
		12" (305)	8 7/8" (225)
48" (1219)	24" (610)	10" (254)	7 3/4" (197)
		12" (305)	8 1/2" (216)

NOTES: Dimensions in parentheses are millimeters (mm). Dimensional data shown is for a 48"x24" panel. See Krueger's website for additional panel sizes.

PERFORMANCE DATA

SIZE	PERFORMANCE						
	FLOW RATE	Ps	VELOCITY @ 6' BELOW PANEL				NC
			5° FΔT	10° FΔT	15° FΔT	20° FΔT	
CFM/ft ²	"WG	FPM	FPM	FPM	FPM		
SINGLE PANEL	10	0.008	20	25	30	35	<20
	20	0.032	35	40	45	55	<20
	30	0.072	50	60	70	80	21
	40	0.128	65	80	95	105	25
15-30 ft ²	10	0.008	20	30	30	35	<20
	20	0.032	35	45	50	60	22
	30	0.072	50	65	80	90	26
	40	0.128	70	90	105	-	30
Over 30 ft ²	10	0.008	25	30	35	40	21
	20	0.032	40	50	60	65	25
	30	0.072	60	75	90	100	29
	40	0.128	80	100	N/A	N/A	33

NC CORRECTIONS									
ft ² OF PANELS	4	8	16	24	32	40	48	64	>64
m ² OF PANELS	0.4	0.7	1.5	2.2	3.0	3.7	4.5	6.0	>6
NC CORRECTION	-3	0	3	5	6	7	8	9	10

NOTES: Information shown is abbreviated. See Krueger website for complete information. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

NOTES: Data is based on a 24" x 48" 5000 with 12" inlet and full, open damper. NC is based on a 10dB room attenuation sound power re 10⁻¹² Watts. Multiple panels will add to the sound level. See the table to the left for corrections.

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MODEL

- CRFF - Fan filter unit with HEPA filter
- CRFF-ARS - Fan filter unit with HEPA filter and room side access to filter
- CRFF-ARSM - Fan filter unit with HEPA filter and room side access to EC motor and filter

FEATURES

- Low profile design, less than 13" in height (CRFF only)
- PSC motor with solid state speed control or 3-speed switch
- Forward inclined centrifugal-type fan
- High Efficiency Particulate Air (HEPA) Filter: 99.99% @ 0.3 micron, type J
- Snap-in prefilter
- 1/2 - 20 threaded bushings (located on casing)
- Walkable plenum (excluding prefilter)
- Low power consumption
- Meets IEST-RP CC001.5 and IEST-RP-CC0034.3 leak testing
- UL listed with Standard UL 900
- Challenge and pressure ports ¹

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

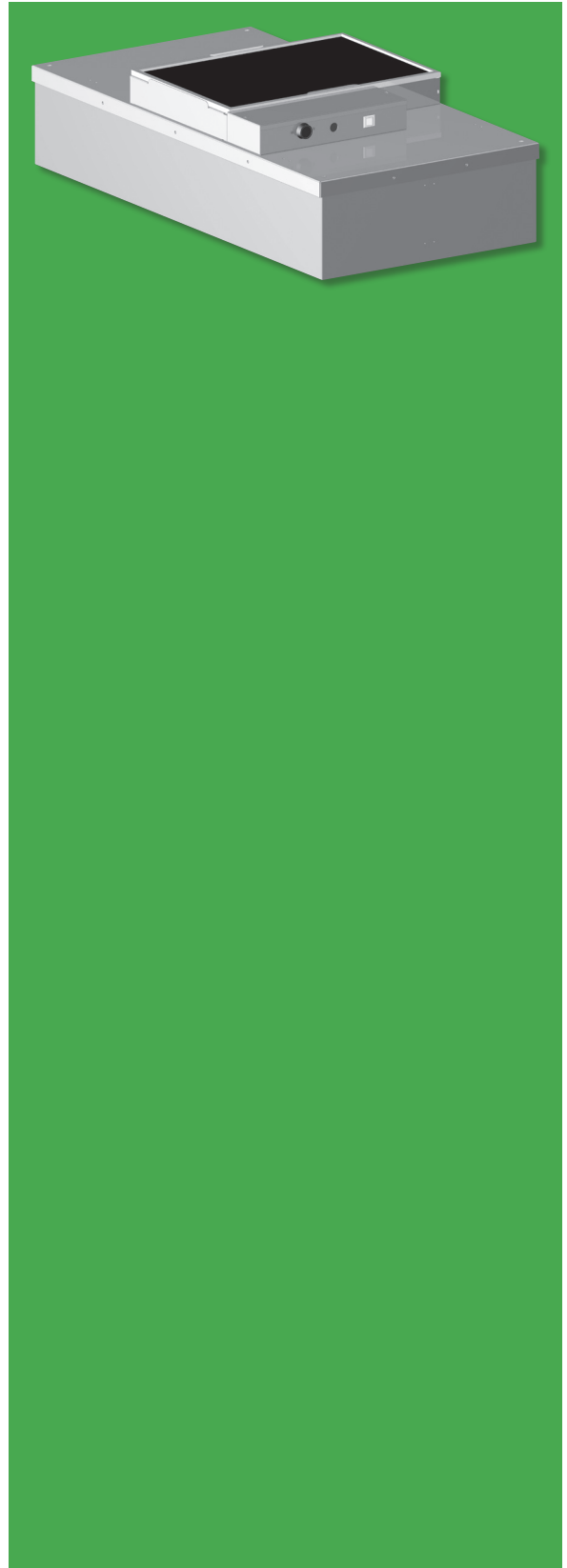
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Ultra-Low Penetration Air (ULPA) Filter: 99.9995% @ 0.12 micron, Type F
- Filter load indicator light
- Run indicator light
- Duct Collar: Allows direct connection to air duct
- Power Cord: Provides convenient plug-in (voids UL listing)
- Challenge and pressure ports on non-ARS units
- Extruded aluminum plaster frame for hard ceilings (model 5HCF23, ordered separately)
- 304 stainless steel construction

NOTES:

- ¹ Feature applies to CRFF-ARS and CRFF-ARSM only.



CRITICAL ENVIRONMENT

CRFF

[WEB SEARCH: CRFF](#)

CRFF SERIES

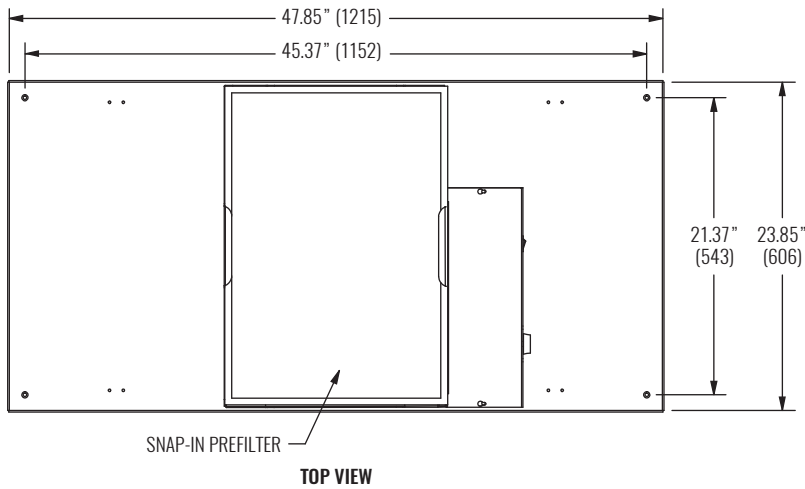
Fan Filter Units



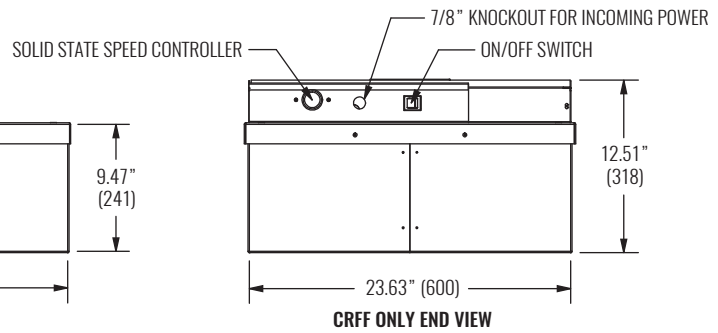
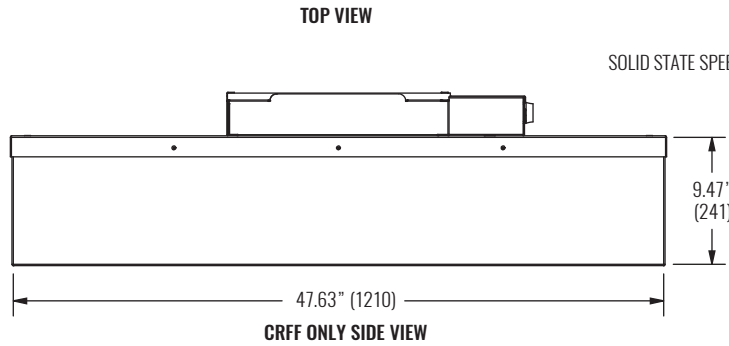
CRITICAL ENVIRONMENT

CRFF

DIMENSIONAL DATA



DIMENSIONS	
PANEL SIZE	OA FACE DIMENSION
24" x 24"	23.63" x 23.63" (600 x 600 mm)
24" x 48"	23.63" x 47.63" (600 x 1200 mm)



NOTES: Dimensions in parentheses are millimeters (mm). Dimensional data shown is for a 48"x24" panel. See Krueger's website for additional panel sizes.

PERFORMANCE DATA

MODEL AND SIZE		PERFORMANCE AND WEIGHT							FULL LOAD AMPS		
UNIT TYPE	NOMINAL UNIT SIZES	MOTOR Hp	MAX CFM	CFM @ 90 FPM	Watts @ MAX CFM	Watts @ 90 FPM	TOTAL UNIT WEIGHT Lb (kg)	SOUND LEVEL dB			
CRFF	24"x24"	1/5	410	315	200	165	41 (19)	48.0	PSC	115V	3.00
	48"x24"		660	650	315	310	66(30)	50.3		208V	1.50
CRFF-ARS	24"x24"	1/5	350	210	170	140	44 (20)	48.0		277V	1.20
	48"x24"		610	470	300	245	71 (32)	50.3	ECM	115V	5.00
CRFF-ARSM	24"x24"	1/5	350	210	170	140	44 (20)	48.0		208V	3.00
	48"x24"		610	470	300	245	71 (32)	50.3		277V	2.50

NOTES: Information shown is abbreviated. See Krueger website for complete information. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- CRFF-E - Fan filter unit with HEPA filter and EC motor
- CRFF-E-ARS - Fan filter unit with HEPA filter, EC motor, and room side access
- CRFF-E-ARSM - Fan filter unit with HEPA filter and room side access to EC motor and filter

FEATURES

- Forward inclined centrifugal-type fan
- High Efficiency Particulate Air (HEPA) Filter: 99.99% @ 0.3 micron, Type J
- Snap-in prefilter
- 1/2 - 20 threaded bushings (located on casing)
- Walkable plenum (excluding prefilter)
- Low power consumption
- Meets IEST-RP CC001.5 and IEST-RP-CC0034.3 leak testing
- UL listed with Standard UL 900
- ECM Brushless DC Motor: Constant airflow over a wide range of external static pressures
- EC motor with universal control card: VCU,0-10V or RTU Modbus control functionality
- Challenge and pressure ports ¹

FRAME STYLES

- F23 - Lay-in T-bar

PANEL SIZES

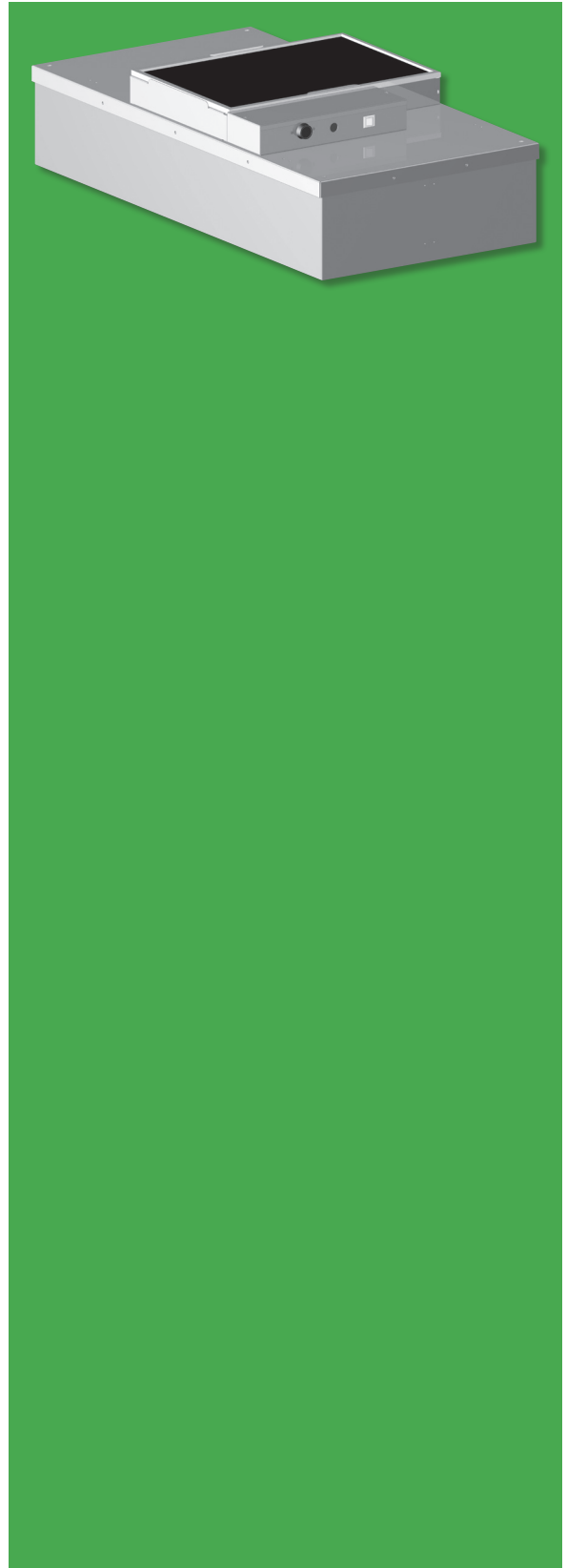
- 24"x24"
- 48"x24"

COMPATIBLE OPTIONS AND ACCESSORIES

- Ultra-Low Penetration Air (ULPA) Filter: 99.9995% @ 0.12 micron, type F
- Filter load indicator light
- Run indicator light
- Duct Collar: Allows direct connection to air duct
- Extruded aluminum plaster frame for hard ceilings (model 5HCF23, ordered separately)
- 304 stainless steel construction
- Power Cord: Provides convenient plug-in (voids UL listing)
- Infrared Speed Control: Room-side airflow adjustment with hand-held remote control (EC motors only)
- Challenge and pressure ports on non-ARS units
- Wall mounted control enclosure (EC motors only)

NOTES:

- ¹ Feature applies to CRFF-E-ARS and CRFF-E-ARSM only.



CRITICAL ENVIRONMENT

CRFF-E



CRFF-E SERIES

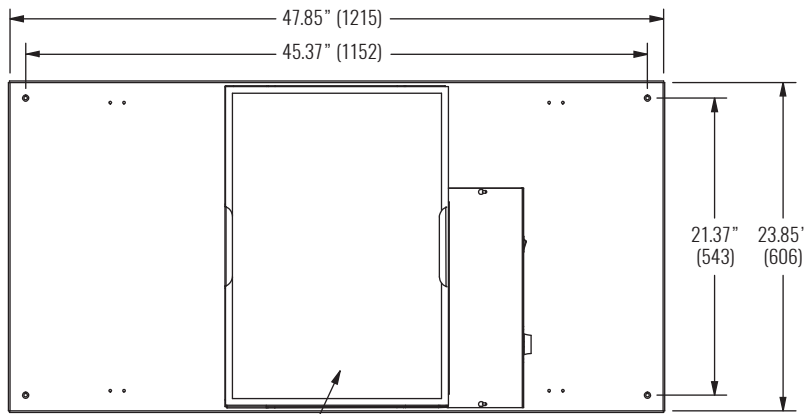
Fan Filter Units with EC Motors



CRITICAL ENVIRONMENT

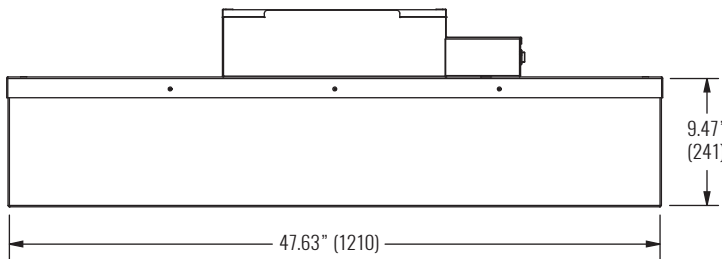
CRFF-E

DIMENSIONAL DATA

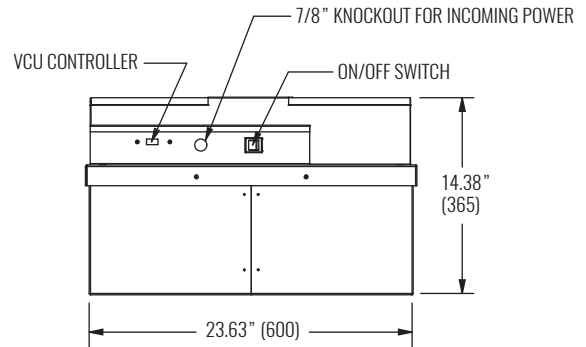


SNAP-IN PREFILTER
TOP VIEW

DIMENSIONS	
PANEL SIZE	OA FACE DIMENSION
24"x24"	23.63" x 23.63" (600 x 600 mm)
48"x24"	23.63" x 47.63" (600 x 1200 mm)



CRFF-E ONLY SIDE VIEW



CRFF-E ONLY END VIEW

NOTES: Dimensions in parentheses are millimeters (mm). Dimensional data shown is for 48"x24" panel. See Krueger's website for additional panel sizes.

PERFORMANCE DATA

MODEL AND SIZE		PERFORMANCE AND WEIGHT							FULL LOAD AMPS		
UNIT TYPE	NOMINAL UNIT SIZES	MOTOR Hp	MAX CFM	CFM @ 90 FPM	Watts @ MAX CFM	Watts @ 90 FPM	TOTAL UNIT WEIGHT Lb (kg)	SOUND LEVEL dB			
CRFF	24"x24"	1/3	410	315	145	80	41 (19)	46.5	PSC	115V	3.00
	48"x24"									660	650
CRFF-ARS	24"x24"	1/3	350	210	130	50	44 (20)	46.5		277V	1.20
	48"x24"								610	470	225
CRFF-ARSM	24"x24"	1/3	350	210	130	140	44 (20)	46.5	ECM	208V	3.00
	48"x24"									610	470

NOTES: Information shown is abbreviated. See Krueger website for complete information. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70, ISO Standard 5219, and ISO Standard 3741.

MODEL

- FDR - Cast aluminum round underfloor diffuser with helical air pattern

FEATURES

- Vertical helical air pattern for partially stratified system
- Durable cast aluminum construction to withstand any application
- Integral dust pan for easy cleaning
- 1250 lbs maximum load rating
- Face adjustable manual damper that provides occupant comfort control
- Conforms to NFPA 90A
- Factory painted flat black plenums and dust pans
- Silent operating, less than 17 NC at 100% capacity
- Ten standard powder-coat finishes to complement a range of applications
- Custom paint match (optional)

UNIT SIZES

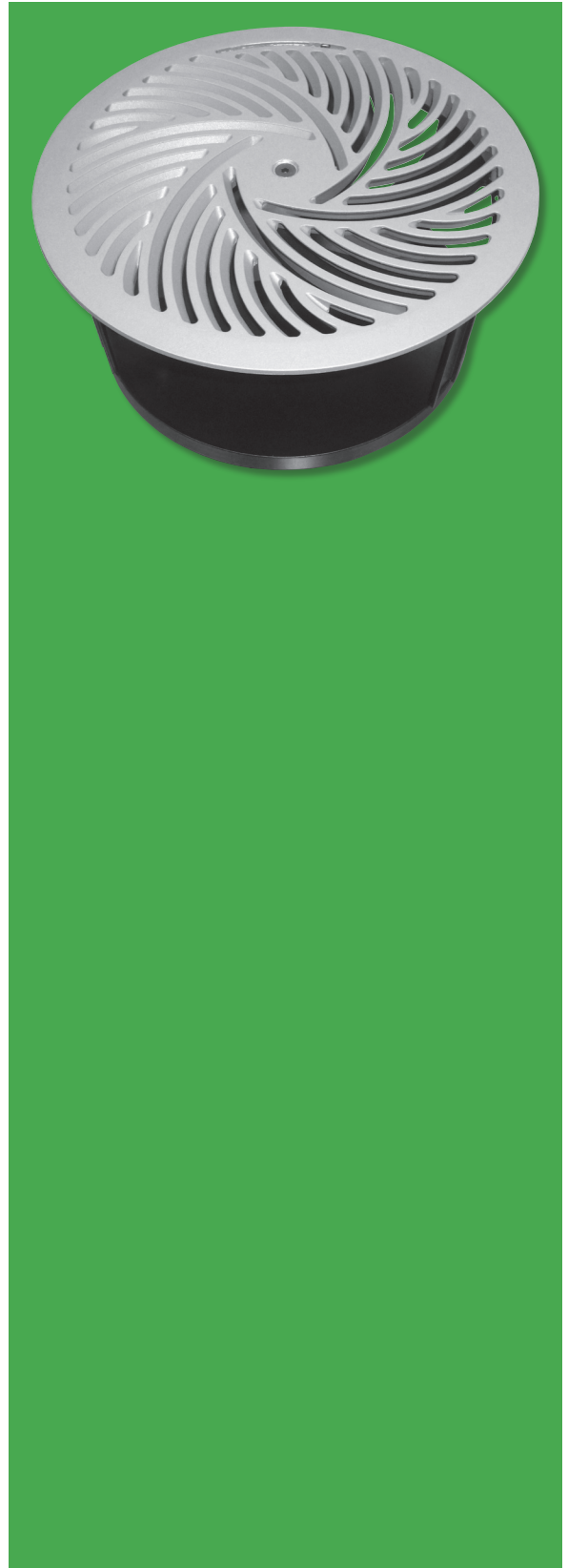
- 8" - 180° or 360° air pattern
- 10" - 360° air pattern

PLENUM OPTIONS

- 0 - No plenum, diffuser only for constant volume applications
- P - Open inlet plenum for sound baffling constant volume applications
- D - Elliptical inlet that accepts a 6" round compressed duct connection
- V - VAV inlet with 0-10VDC proportional actuator ¹
- H - Heating and cooling changeover unit. Has an elliptical inlet to accept a 6" round compressed duct connection on one side that is ducted to a underfloor fan powered terminal unit for heating. On the adjacent side is a VAV inlet with a 0-10VDC proportional actuator for cooling operation ¹

NOTE:

- ¹ Units shipped with V or H plenum option ship with a quick connect cable for both data and power.



UNDERFLOOR

FDR

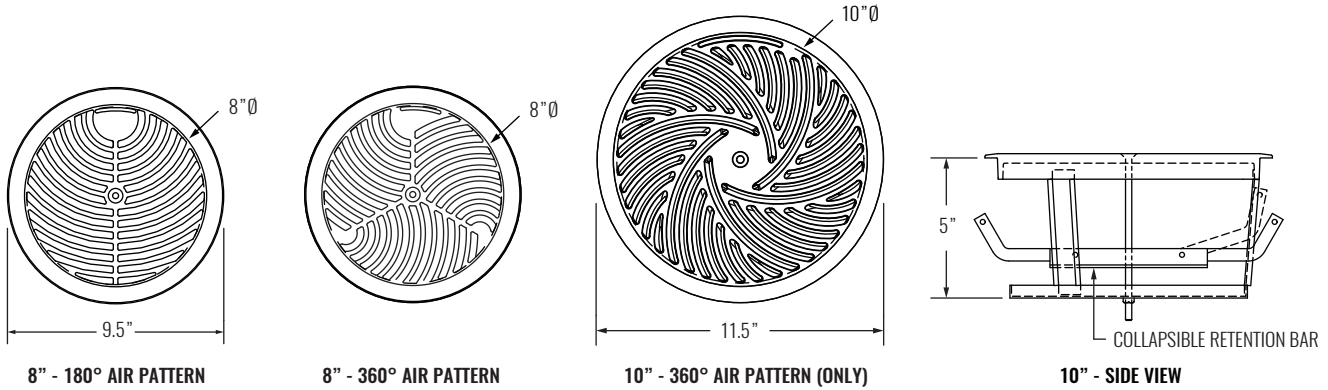


FDR

Underfloor Diffuser, Helical



DIMENSIONAL DATA

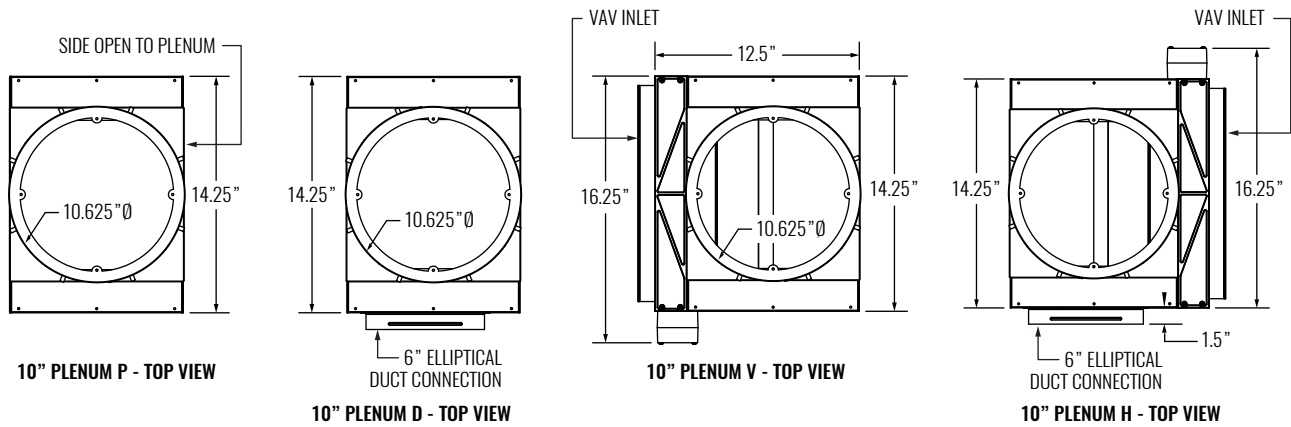


8" - 180° AIR PATTERN

8" - 360° AIR PATTERN

10" - 360° AIR PATTERN (ONLY)

10" - SIDE VIEW



10" PLENUM P - TOP VIEW

10" PLENUM D - TOP VIEW

10" PLENUM V - TOP VIEW

10" PLENUM H - TOP VIEW

NOTES: 10" diffuser plenums are shown, 8" diffuser plenums are available. See website for floor opening dimensions.

PERFORMANCE DATA

SIZE	PERFORMANCE			
UNIT	PLENUM STATIC PRESSURE "WG	AIRFLOW CFM	NC	NEAR ZONE (ft)
8"	0.03	65	-	1.0
	0.04	75	10	1.5
	0.05	82	11	2.0
	0.06	90	12	2.0
	0.07	98	15	2.5
	0.08	105	17	2.5
10"	0.03	80	-	1.0
	0.04	90	11	1.0
	0.05	99	12	1.5
	0.06	109	14	2.0
	0.07	120	15	2.0
	0.08	130	17	2.5

NOTES: Information shown is abbreviated. See Krueger website for complete information. Dash (-) in space denotes an N.C. value of less than 10. Data was obtained from test conducted in accordance with ANSI / ASHRAE Standard 70-1991. N.C. values are based on Octave Band 2 - 7 sound power levels minus a room absorption of 10dB. Near Zone is the suggested radius of unoccupied space surrounding the diffuser face to minimize occupant discomfort.

UNDERFLOOR

FDR

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MODEL

- FDD - Cast aluminum round underfloor diffuser with displacement air pattern

FEATURES

- Horizontal displacement air pattern for fully stratified system
- Durable cast aluminum construction to withstand any application
- Integral dust pan for easy cleaning
- 1250 lbs maximum load rating
- Face adjustable manual damper that provides occupant comfort control
- Conforms to NFPA 90A
- Factory painted flat black plenums and dust pans
- Silent operating, less than 17 NC at 100% capacity
- Ten standard powder-coat finishes to complement a range of applications
- Custom paint match (optional)

UNIT SIZES

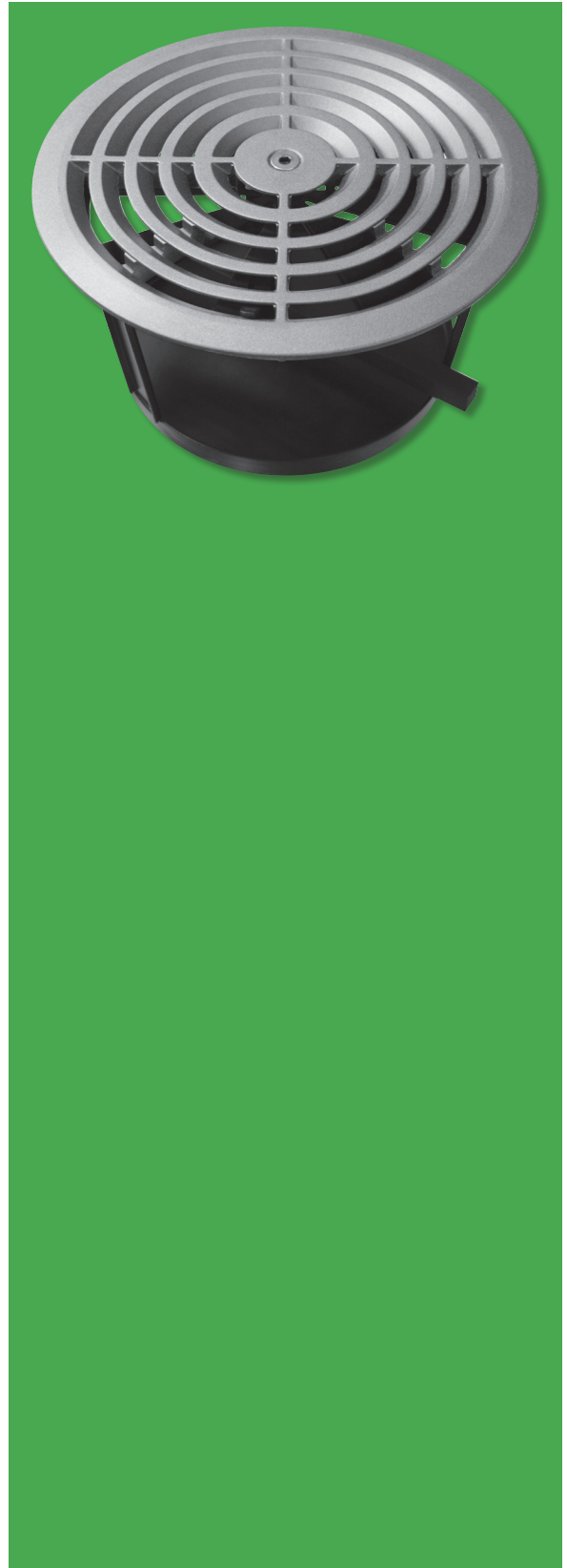
- 4" - 180° directional air pattern ¹
- 6" - 180° directional air pattern ²
- 8" - 360° air pattern
- 10" - 360° air pattern

PLENUM OPTIONS

- 0 - No plenum, diffuser only for constant volume applications
- P - Open inlet plenum for sound baffling constant volume applications
- D - Elliptical inlet that accepts a 6" round compressed duct connection
- V - VAV inlet with 0-10VDC proportional actuator ³
- H - Heating and cooling changeover unit. Has an elliptical inlet to accept a 6" round compressed duct connection on one side that is ducted to a underfloor fan powered terminal unit for heating. On the adjacent side is a VAV inlet with a 0-10VDC proportional actuator for cooling operation ³

NOTES:

- ¹ Unit size 4" is not available with dust pan.
- ² Unit size 6" is only available with plenum option 0.
- ³ Units shipped with V or H plenum option ship with a quick connect cable for both data and power.

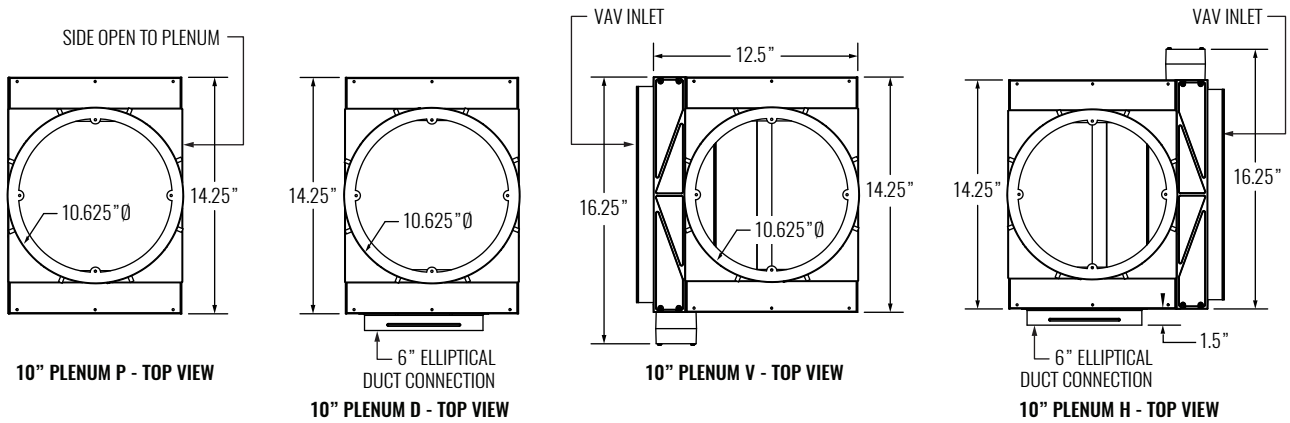
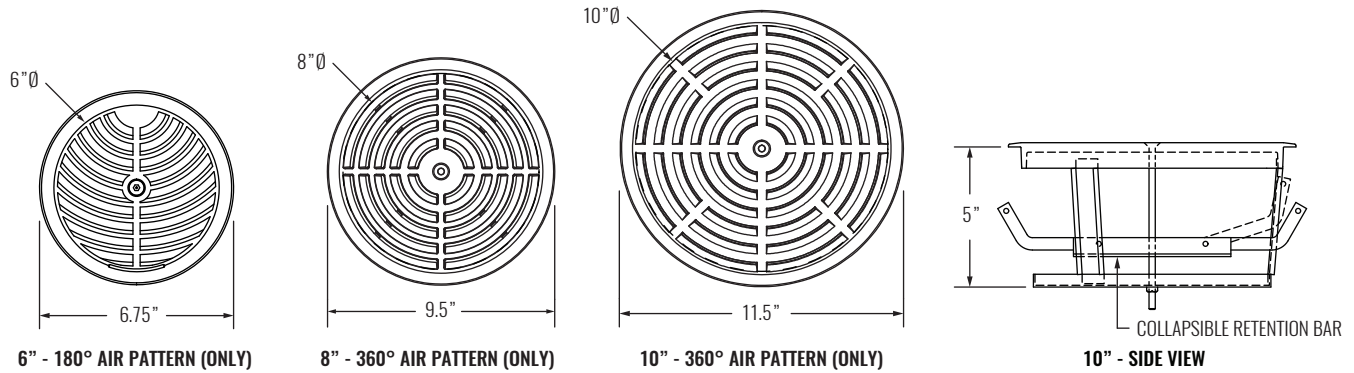


UNDERFLOOR

FDD



DIMENSIONAL DATA



NOTES: 10" diffuser plenums are shown, 8" diffuser plenums are available. See website for floor opening dimensions.

PERFORMANCE DATA

SIZE	PERFORMANCE				SIZE	PERFORMANCE			
UNIT	PLENUM STATIC PRESSURE "WG	AIRFLOW CFM	NC	NEAR ZONE (ft)	UNIT	PLENUM STATIC PRESSURE "WG	AIRFLOW CFM	NC	NEAR ZONE (ft)
4"	0.03	12	-	N/A	8"	0.03	35	-	1
	0.04	13	-	N/A		0.04	45	-	1
	0.05	15	12	N/A		0.05	50	-	1
	0.06	17	12	N/A		0.06	60	-	1
	0.07	18	12	N/A		0.07	65	13	1.5
	0.08	19	15	N/A		0.08	70	14	1.5
6"	0.03	27	-	N/A	10"	0.03	60	-	1
	0.04	31	-	N/A		0.04	66	-	1
	0.05	35	-	N/A		0.05	75	-	1
	0.06	38	13	N/A		0.06	79	-	1
	0.07	41	14	N/A		0.07	87	14	1.5
	0.08	45	16	N/A		0.08	95	16	1.5

NOTES: Information shown is abbreviated. See Krueger website for complete information. Dash (-) in space denotes an N.C. value of less than 10. Data was obtained from test conducted in accordance with ANSI / ASHRAE Standard 70-1991. N.C. values are based on Octave Band 2 - 7 sound power levels minus a room absorption of 10dB. Near Zone is the suggested radius of unoccupied space surrounding the diffuser face to minimize occupant discomfort.

MODEL

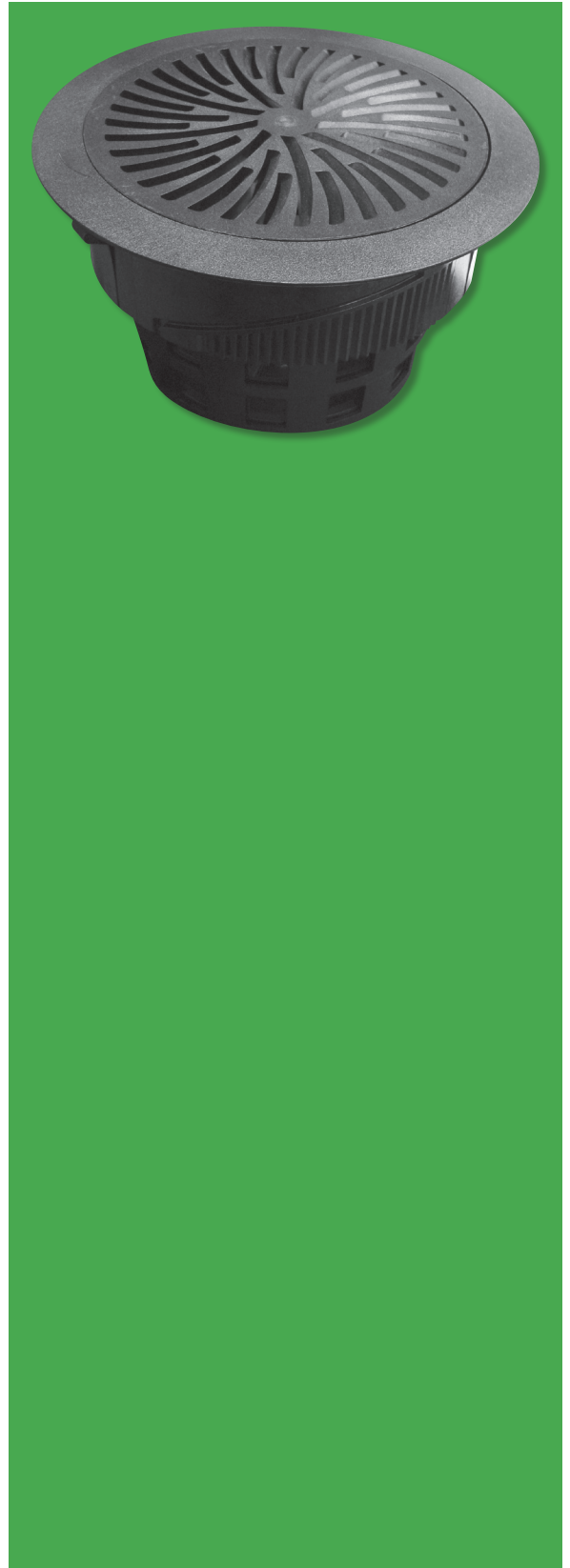
- FPDFR-R - Round, fire rated diffuser for underfloor

FEATURES

- Vertical helical air pattern for partially stratified system
- High impact polymeric construction
- Meets NFPA 90B structural requirements
- Complies with NFPA 90A
- Trim ring with 1" flange
- Underfloor flow basket serves as a receptacle for fallen debris
- Extends 5 3/4" below top of underfloor panel
- External OPEN/CLOSE indicator with internal OPEN/CLOSE stop
- Manually operated flow regulator without removal of core
- Standard face is black or gray

UNIT SIZE

- 8" - 360° air pattern



UNDERFLOOR

FPDFR-R

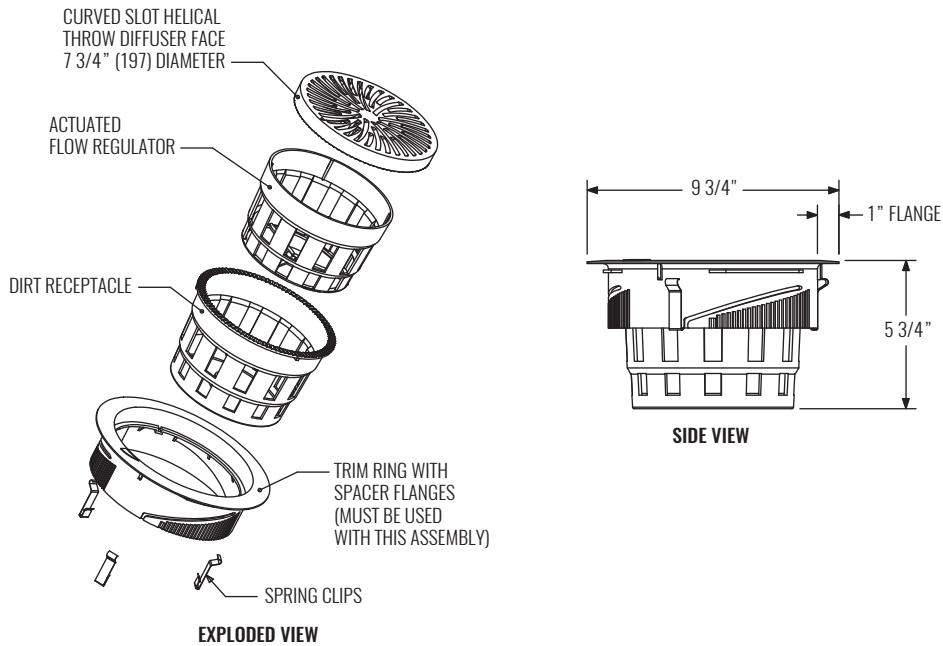


FPDFR-R

Underfloor Diffuser, Fire Rated



DIMENSIONAL DATA



UNDERFLOOR

PERFORMANCE DATA

SIZE		PERFORMANCE				
UNIT	ΔT	AIRFLOW	PLENUM PRESSURE	SPREAD 50 FPM	PROJECTION FPM	NC
		CFM	"WG	ft	ft	
8"	10°R	70	0.042	1.2	1-2-4	-
		80	0.055	1.8	2-3-5	13
		90	0.069	2.0	2-3-5	17
		100	0.086	2.2	2-3-5	20
		110	0.104	2.3	2-4-6	23
		120	0.124	2.4	3-4-6	26
	15°R	70	0.042	1.2	1-1-2	-
		80	0.055	1.8	1-1-3	13
		90	0.069	2.0	1-1-3	17
		100	0.086	2.2	1-2-3	20
		110	0.104	2.3	1-2-3	23
		120	0.124	2.4	1-2-3	26

NOTES: Information shown is abbreviated. See Krueger website for complete information. Throw values are given for terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). NC values are based on octave band 2 - 7 sound power levels minus a room absorption 10dB, re 10⁻¹² Watts. Dash in space denotes a NC value less than 10. Data was obtained from tests conducted in accordance with ANSI / ASHRAE Standard 70. Spread is the total maximum width of the 50 FPM (0.25 m/s) isovel. Projection is the maximum distance above the floor where the indicated terminal velocity was observed. Spread and projection data is determined in a room with a 9' (2.7 m) ceiling, at the indicated ΔT between the supply and average occupied zone temperatures. The proper representation of ΔT in Fahrenheit is (°R).

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MODEL

- FDS - Cast aluminum square underfloor diffuser

FEATURES

- Air patterns designed for partially stratified system
- Configurable 2-piece grille to provide multiple throw patterns
- Durable cast aluminum construction to withstand any application
- 1250 lbs maximum load rating
- Conforms to NFPA 90A
- Factory painted flat black plenums and dust pans
- Silent operating, less than 17 NC at 100% capacity
- Ten standard powder-coat finishes to complement a range of applications
- Custom paint match (optional)

UNIT SIZE

- 10" x 10" (nominal)

AIR PATTERNS

- Field configurable grille face plates provide multiple throw patterns to fit any space
- 2-Way Throw - ideal for long hallways or aisle
- 3-Way Throw - useful for directing airflow across wide open spaces from a perimeter wall
- 4-Way Throw - perfect for large open spaces that require significant airflow

PLENUM OPTIONS

- P - Open inlet plenum for sound baffling constant volume applications
- D - Elliptical inlet that accepts a 6" round compressed duct connection
- V - VAV inlet with 0-10VDC proportional actuator ¹
- H - Heating and cooling changeover unit. Has an elliptical inlet to accept a 6" round compressed duct connection on one side that is ducted to a underfloor fan powered terminal unit for heating. On the adjacent side is a VAV inlet with a 0-10VDC proportional actuator for cooling operation ¹

NOTE:

- ¹ Units shipped with V or H plenum option ship with a quick connect cable for both data and power.



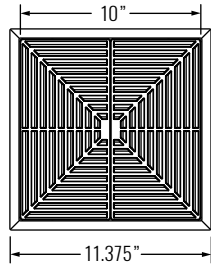
UNDERFLOOR

FDS

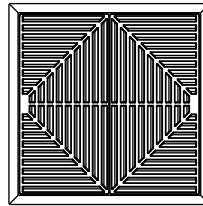
[WEB SEARCH: FDS](#)

DIMENSIONAL DATA

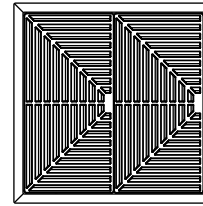
FIELD ADJUSTABLE GRILLE CONFIGURATIONS



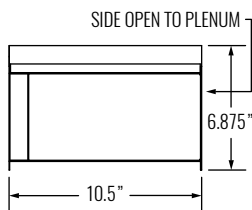
FACE VIEW, 4-WAY



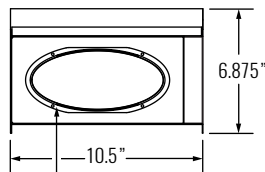
FACE VIEW, 2-WAY



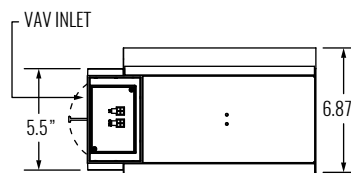
FACE VIEW, 3-WAY



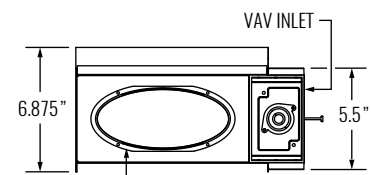
10" PLENUM P - SIDE VIEW



10" PLENUM D - SIDE VIEW



10" PLENUM V - SIDE VIEW



10" PLENUM H - SIDE VIEW

NOTES: See website for floor opening dimensions.

PERFORMANCE DATA

SIZE	PERFORMANCE					
UNIT	PLENUM STATIC PRESSURE "WG	AIRFLOW CFM	NC	2-WAY NEAR ZONE (ft)	3-WAY NEAR ZONE (ft)	4-WAY NEAR ZONE (ft)
10"x10"	0.03	95	-	3	4	3
	0.04	135	10	3	4	3
	0.05	150	13	3	4	3.5
	0.06	170	15	4	5	3.5
	0.07	180	15	4	5	4
	0.08	205	17	5	6	4

NOTES: Information shown is abbreviated. See Krueger website for complete information. Dash (-) in space denotes a N.C. value of less than 10. Data was obtained from test conducted in accordance with ANSI / ASHRAE Standard 70-1991. N.C. values are based on Octave Band 2 - 7 sound power levels minus a room absorption of 10dB. Near Zone is the suggested radius of unoccupied space surrounding the diffuser face to minimize occupant discomfort.

MODEL

- FDL - Extruded aluminum linear bar grille with plenum for underfloor

FEATURES

- Ships completely assembled - extruded aluminum bar grille and plenum
- Easily installed without removing floor tiles
- Compatible with 10" minimum height raised floors.
- 1250 lbs maximum load rating
- Conforms to NFPA 90A
- Factory painted flat black plenums and dust pans
- Silent operating, less than 23 NC at 100% capacity
- Ten standard powder-coat finishes to complement a range of applications
- Custom paint match (optional)

UNIT SIZE

- 16" x 8" (nominal)

DEFLECTIONS

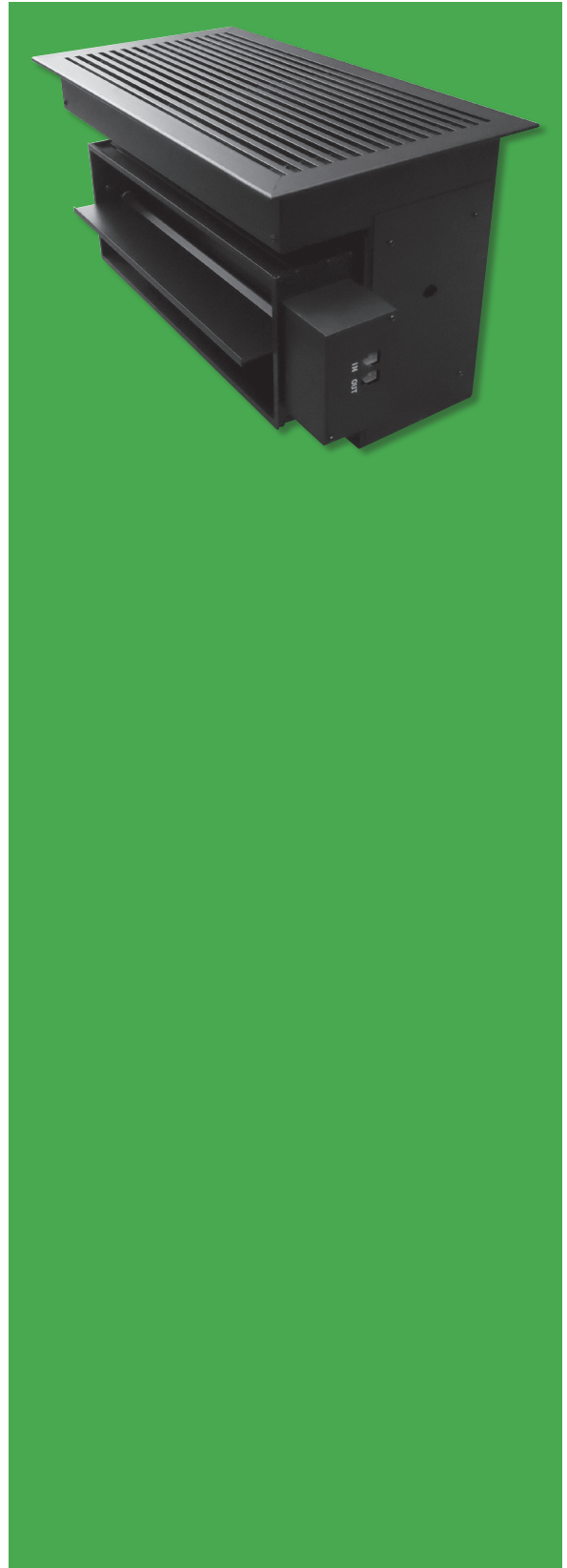
- 0°
- 15° (standard)
- 30°

PLENUM OPTIONS

- P - Open inlet plenum for sound baffling constant volume applications
- D - Side Elliptical inlet that accepts a 6" round compressed duct connection
- V - VAV inlet with 0-10VDC proportional actuator ¹
- H - Heat/Cool changeover unit. Has an elliptical inlet to accept a 6" round compressed duct connection on one side that is ducted to a underfloor fan powered terminal unit for heating. On the adjacent side is a VAV inlet with a 0-10VDC proportional actuator for cooling operation ¹
- M - Open inlet to underfloor plenum for constant volume with manual airflow adjustment

NOTE:

- ¹ Units shipped with V or H plenum option ship with a quick connect cable for both data and power.

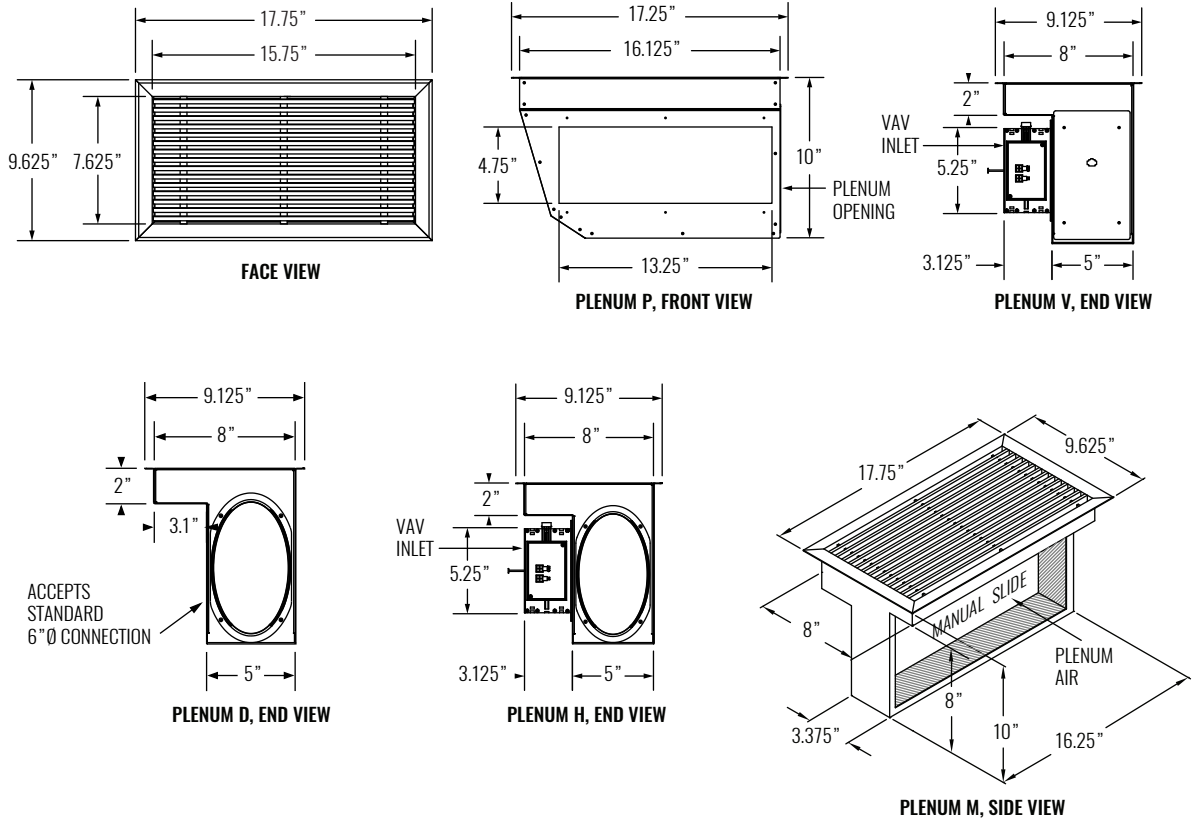


UNDERFLOOR

FDL



DIMENSIONAL DATA



PERFORMANCE DATA

SIZE	PERFORMANCE			
	UNIT	PLENUM STATIC PRESSURE "WG	AIRFLOW CFM	NC
16"x8"		0.03	145	-
		0.04	156	-
		0.05	175	12
		0.06	192	17
		0.07	205	19
		0.08	225	22

NOTES: Information shown is abbreviated. See Krueger website for complete information. Dash (-) in space denotes an N.C. value of less than 10. Data was obtained from test conducted in accordance with ANSI / ASHRAE Standard 70-1991. N.C. values are based on Octave Band 2 - 7 sound power levels minus a room absorption of 10dB.

MODEL

- FDT - Underfloor trough unit with extruded aluminum linear bar grille

FEATURES

- Assembly includes plenum trough and matching linear bar grille
- Available in 36", 48", 60", 72", 84", 96", 108" or 120" long sections
- Linear bar grille is available with butt cut ends to allow continuous looking sections
- Features a 1250 lbs. load rating
- Available with standard or high capacity VAV air valves
- Available with elliptical, round, or rectangular duct connections
- Conforms to NFPA 90A fire requirements
- Provides silent operation less than 23NC at 100% capacity
- Optional finned electric reheat or hot water coil for heating
- Compatible with 10" minimum height raised floors
- Ten standard powder-coat finishes to complement a range of applications; factory painted flat black plenums
- Custom paint match (optional)

UNIT SIZES

- Lengths - 36", 48", 60", 72", 84", 96", 108", 120"
- Widths - 6", 8", 10"
- Heights - 8", 10"

DEFLECTIONS

- 0°
- 15° (standard)
- 30°

PLENUM OPTIONS

- P - Open inlet to underfloor plenum for constant volume cooling
- D - Accept elliptical, round or rectangular duct connections for heating
- V - VAV inlet/inlets with 0-10VDC proportional actuator ¹
- H - Heat/Cool changeover unit has a duct connection that is ducted to a underfloor fan powered terminal unit. The unit is also provided a VAV inlet with 0-10 VDC proportional actuator for cooling operation. ¹

NOTES:

¹ Units shipped with V or H plenum option ship with a quick connect cable for both data and power.

² Contact Krueger application engineers for other available rows and special applications.



UNDERFLOOR

FDT

ELECTRIC HEAT

- Proportionally controlled
- Built-in temperature monitoring to ensure safe supply air temperatures
- 120V, 208V, 240V, OR 277V
- 0.5 kW - 2.5 kW
- Includes factory installed 24VAC 40VA transformer
- Single point power connection
- ETL Listed

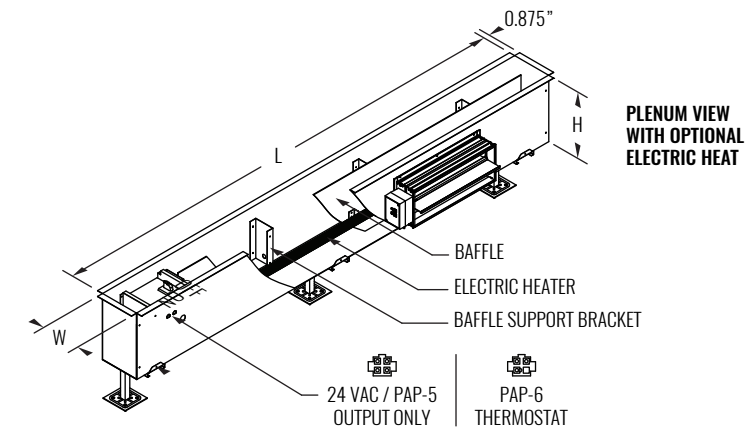
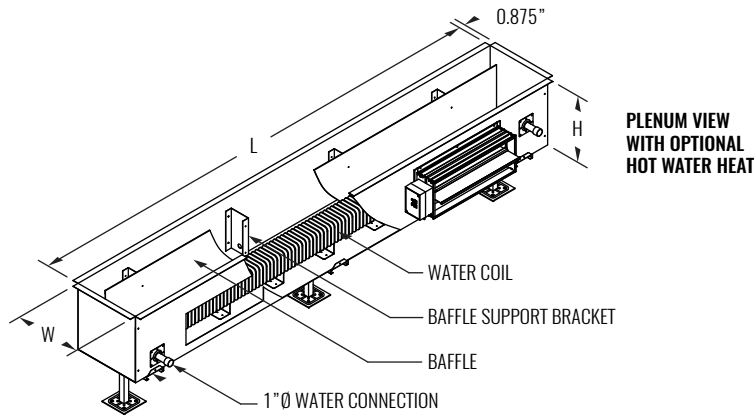
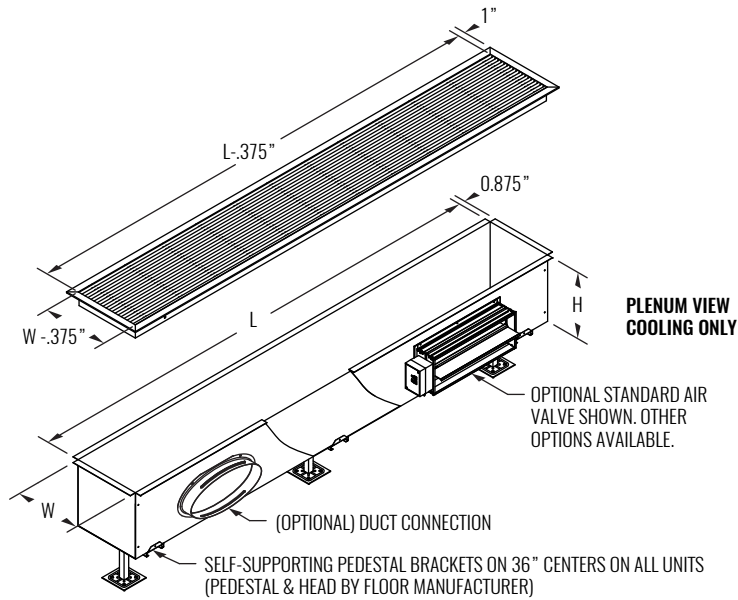
HOT WATER HEAT ²

- 3 rows
- 5 rows

WEB SEARCH: FDT



DIMENSIONAL DATA



PERFORMANCE DATA

SIZE	PERFORMANCE		
	PLENUM STATIC PRESSURE "WG	AIRFLOW CFM PER INLET	
STANDARD 13.25"x4.75"	0.03	120	
	0.04	135	
	0.05	150	
	0.06	165	
	0.07	180	
	0.08	195	
	0.09	205	
	0.10	215	
	HIGH CAPACITY 22"x4.75"	0.03	220
		0.04	275
0.05		300	
0.06		330	
0.07		360	
0.08		380	
0.09		405	
0.10		430	

DIMENSIONS - MINIMUM TROUGH LENGTH

QUANTITY INLETS	PLENUM P (OPEN)	PLENUM D (DUCTED)	PLENUM V (VAV), PLENUM H (DUCTED and VAV)	
			STANDARD	HIGH CAPACITY
2	48"	48"	48"	72"
3	72"	72"	72"	96"
4	84"	84"	84"	120"
5	96"	96"	96"	N/A

DIMENSIONS

L	36"	48"	60"	72"	84"	96"	108"	120"
W	6"	8"	10"					
H	8"	10"						

NOTES: Information shown is abbreviated. See Krueger website for complete information. Airflow is dependent on VAV inlet conditions. FDT with plenum option V is dependent on selection of VAV inlet and quantity of inlets per trough. See Minimum Trough Length table for number of inlets per trough. See FLDS performance data for open and ducted applications.

MODEL

- FLDS - Underfloor aluminum linear bar grille

FEATURES

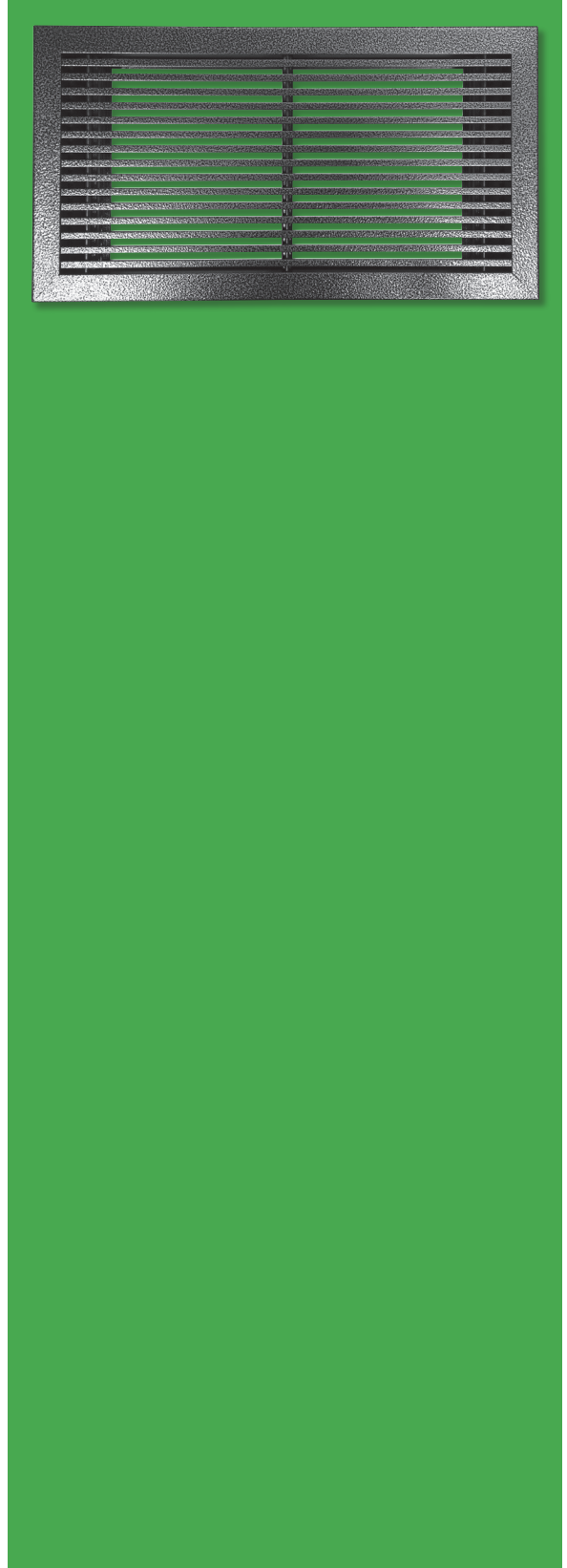
- High quality extruded aluminum linear bars
- Features a 1250 lbs. load rating
- Conforms to NFPA 90A fire requirements
- Provides silent operation less than 23NC at 100% capacity
- Optional factory installed blank off for inactive sections
- End caps (left, right, both) or butt cut
- Ten standard powder-coat finishes to complement a range of applications
- Custom paint match (optional)

GRILLE SIZE

- Length: 24" to 96" in 1/8" increments
- Width - 6", 8", 10"
- End caps (left, right, or both) or butt cut

DEFLECTIONS

- 0°
- 15° (standard)
- 30°



UNDERFLOOR

FLDS



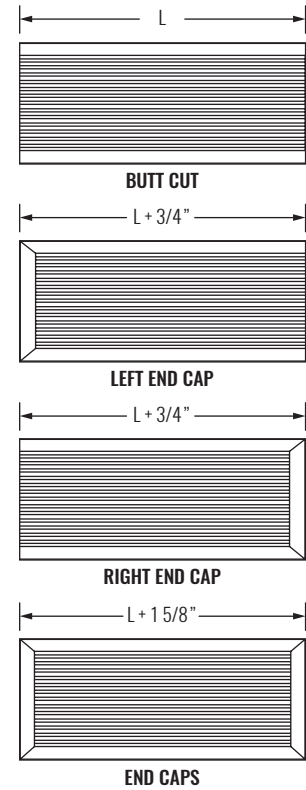
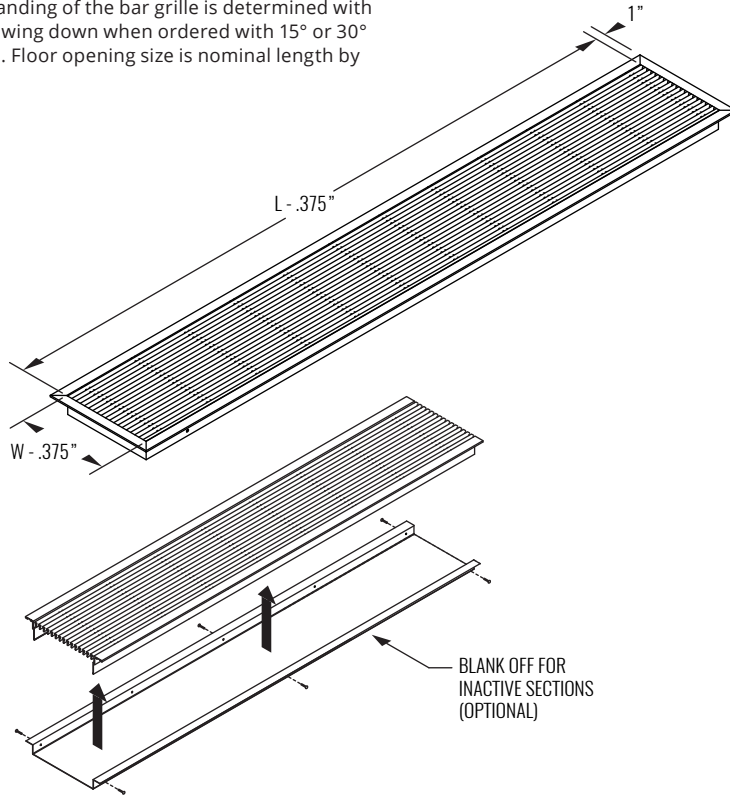
FLDS

Underfloor Linear Bar Grille



DIMENSIONAL DATA

NOTES: Handing of the bar grille is determined with the air blowing down when ordered with 15° or 30° deflection. Floor opening size is nominal length by width.



UNDERFLOOR

FLDS

PERFORMANCE DATA

SIZE		PERFORMANCE PER LINEAR FOOT		SIZE	PERFORMANCE - SOUND				
WIDTH	PLENUM STATIC PRESSURE "WG	AIRFLOW CFM	NOMINAL WIDTH 10"	NC ≤ 22 @ 0.05" WG NC CORRECTIONS / LENGTH					
10"	0.03	247	LENGTH OF GRILLE (ft)	1	5	10	15	20	
	0.04	270	NC CORRECTION	0	+2	+3	+4	+5	
	0.05	294							
	0.06	318							
	0.07	341							
	0.08	365							
	0.09	388							
	0.10	412							
12"	0.03	286							
	0.04	316							
	0.05	347							
	0.06	377							
	0.07	408							
	0.08	438							
	0.09	469							
	0.10	499							

SIZE	PERFORMANCE - SOUND				
NOMINAL WIDTH 12"	NC ≤ 20 @ 0.05" WG NC CORRECTIONS / LENGTH				
LENGTH OF GRILLE (ft)	1	5	10	15	20
NC CORRECTION	0	+2	+3	+4	+5

NOTES: Information shown is abbreviated. See Krueger website for complete information. Airflow is dependent on grille inlet conditions. Performance is based off of standard 0.25" spacing and 0.25" bar thickness with a 15° airflow angle. N.C. values are based on Octave Band 2 - 7 sound power levels minus a room absorption of 10dB.

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MODEL

- KUFS - Underfloor series terminal unit

FEATURES

- Designed for installation in a raised floor grid system
- Top access panels may be removed for service of damper, blower, or filter sections
- 20 gauge casing construction
- Analog or direct digital control options available

MOTORS

- PSC motors - Manually adjustable SCR speed controller
- EC motors - Constant airflow, pressure independent
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- 120V, 208/240V, 277V 1-phase

LINERS

- Dual Density Fiberglass - 1/2" thick
- Cellular - Fiber Free - 1/2" thick
- Foil Encapsulated Fiberglass - 1/2" thick

HOT WATER REHEAT

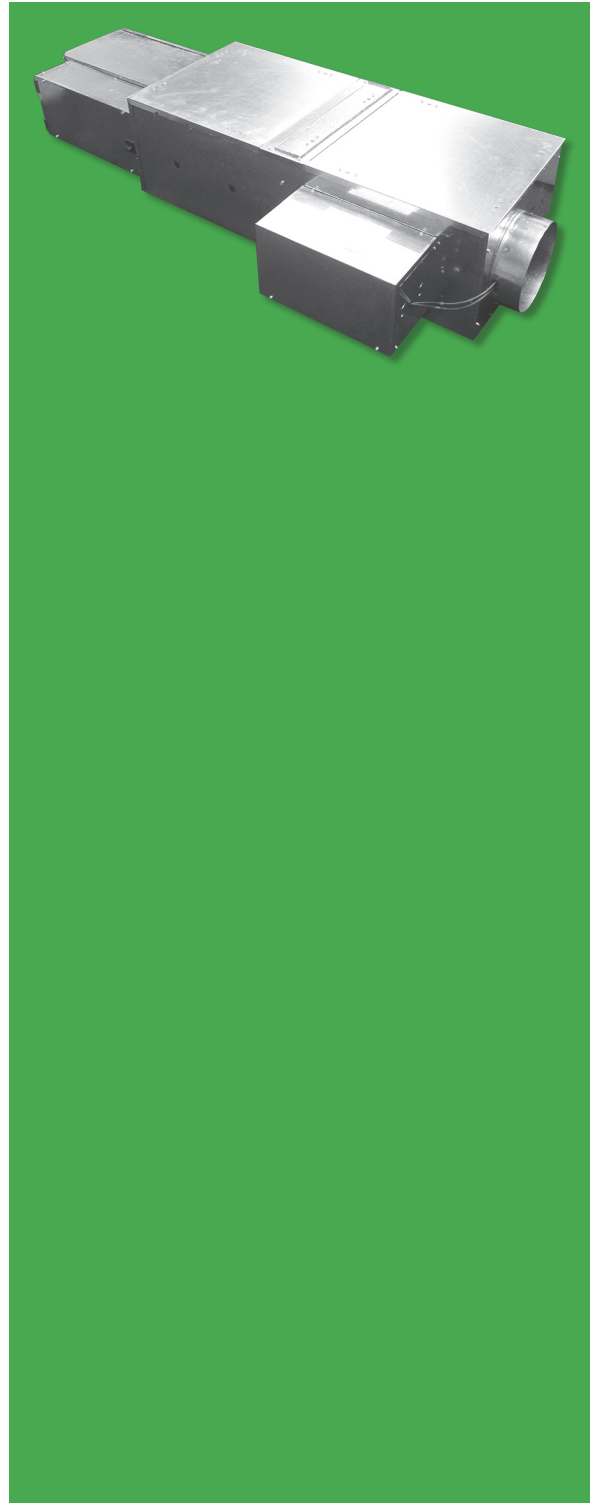
- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 FPI (fins per inch)
- 1, 2 rows of heating
- Left hand, right hand coil connections
- AHRI 410 certified

ELECTRIC HEAT

- Up to 3-stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line Voltage Options:
 - 208/240, 277, 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)

COMPATIBLE OPTIONS AND ACCESSORIES

- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- Construction induction inlet filter



UNDERFLOOR

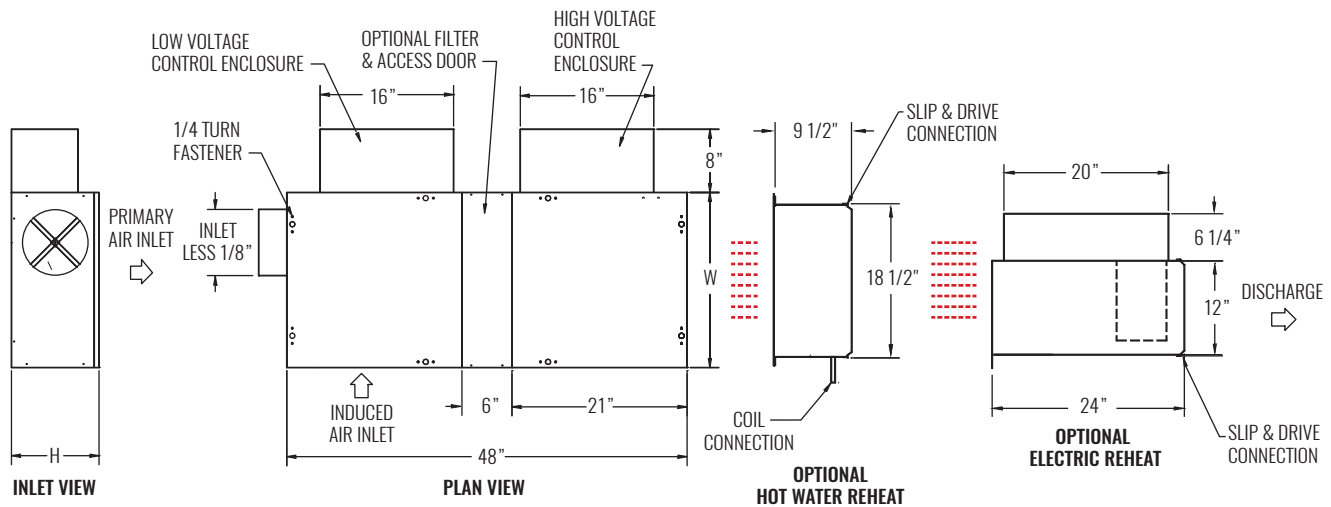
KUFS

CERTIFICATIONS

- ETL Listed - Adherence to UL 1995 and CSA C22.2 no. 236.95

[WEB SEARCH: KUFS](#)

DIMENSIONAL DATA



NOTE: See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE				DIMENSIONS				
UNIT	INLET	FAN AIRFLOW RANGE (CFM)	NOMINAL FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	W	H	BASE UNIT DISCHARGE	HOT WATER DISCHARGE	ELECTRIC HEAT DISCHARGE
PSC MOTOR										
3	9	380 - 975	680	21/30	1/4	21"	10 1/2"	7" x 6 7/8"	18 1/2" x 10"	12" x 10"
4	9, 10	650 - 1200	840	25/36	1/3	21"	14 1/8"	7" x 6 7/8"	18 1/2" x 10"	12" x 10"
EC MOTOR										
3	9	280 - 1000	650	21/29	1/3	21"	10 1/2"	7" x 6 7/8"	18 1/2" x 10"	12" x 10"
4	9, 10	360 - 1050	800	25/35	1/3	21"	14 1/8"	7" x 6 7/8"	18 1/2" x 10"	12" x 10"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Discharge sound data has been corrected for end reflection. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10^{-12} Watts) applied to AHRI Standard 885-08 modified for underfloor applications, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- KBF - Underfloor booster fan powered terminal unit

FEATURES

- 20 gauge casing construction
- Designed for installation in a raised floor grid system
- Top access construction, high and low voltage controls, easily accessible from room above
- Steel inlet screen to protect fan from unwanted debris

MOTORS

- PSC Motors - manually adjustable SCR speed controller
- EC Motors - Constant airflow, pressure independent
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- 120V, 208/240V or 277V 1-phase

HOT WATER REHEAT

- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 FPI (fins per inch)
- 1, 2 rows of heating
- Left-hand, right-hand coil connections
- AHRI 410 certified

ELECTRIC HEAT

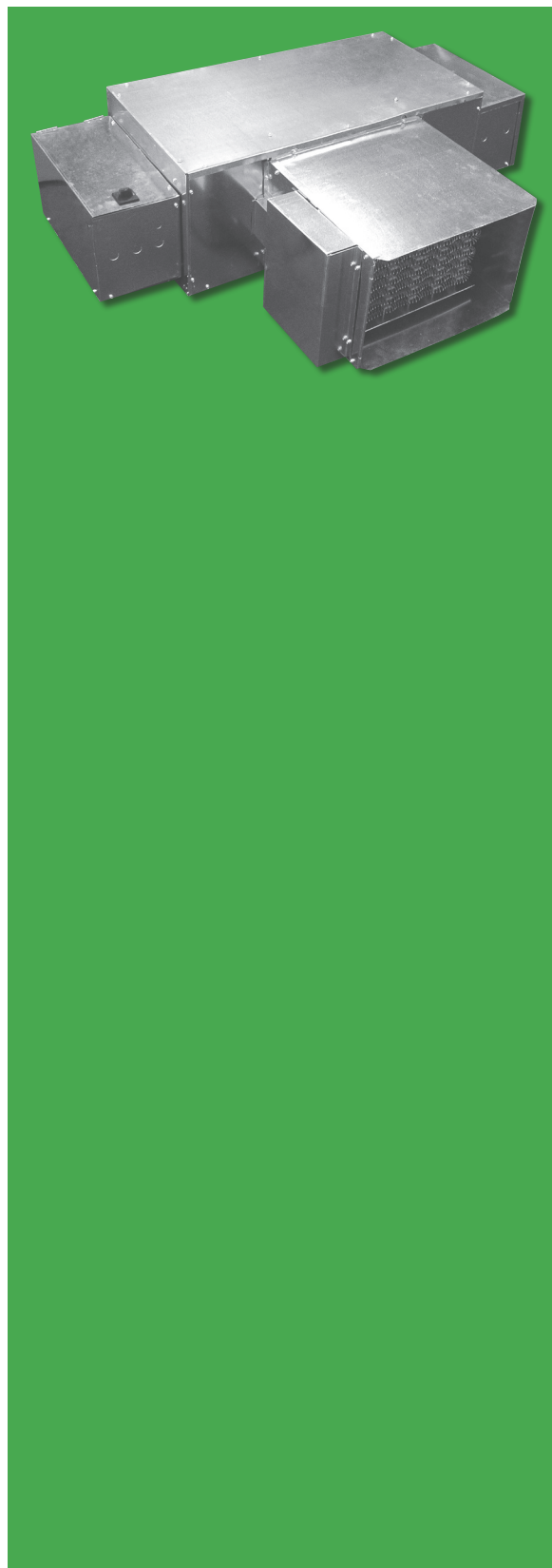
- Up to 3 stages of electric heat
- Solid State Relays available for silent operation.
- Available with LineaHeat™, silent operating electronic proportional control
- Line Voltage Options:
 - 208/240, 277, 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)

COMPATIBLE OPTIONS AND ACCESSORIES

- Induced inlet airflow sensor
- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- Construction induction inlet filter

CERTIFICATIONS

- ETL Listed - Adherence to UL 1995 and CSA C22.2 no. 236.95

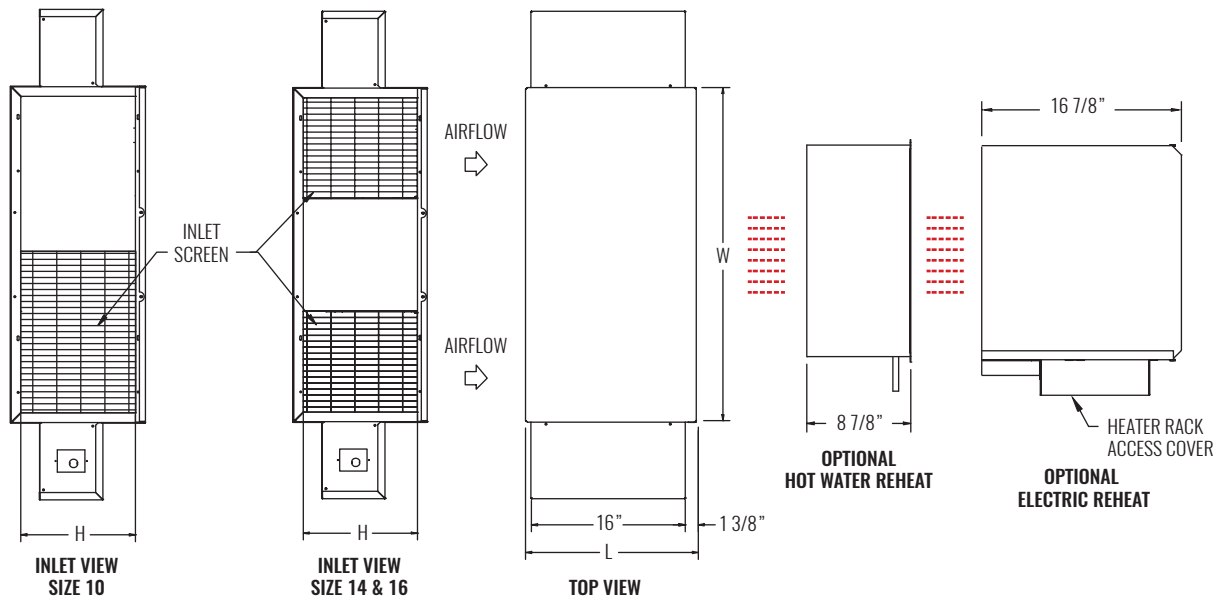


UNDERFLOOR

KBF



DIMENSIONAL DATA



NOTE: See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS					
	FAN AIRFLOW RANGE (CFM)	NOMINAL FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	L	W	H	BASE UNIT DISCHARGE	HOT WATER DISCHARGE	ELECTRIC HEAT DISCHARGE
PSC MOTOR										
10	270 - 820	575	27 / 32	1/4	18	34 7/8"	10 1/2"	15 1/4" x 7 3/4"	18 1/2" x 10"	18" x 9 1/2"
14	325 - 1750	1200	33 / 31	1/3	18	34 7/8"	14"	17 3/4" x 11 3/4"	18" x 11 1/2"	18" x 12"
16	1400 - 2800	1950	37 / 34	3/4	19	34 7/8"	16"	17 3/4" x 13 3/4"	18" x 13 7/8"	18" x 13 1/2"
EC MOTOR										
10	180 - 875	600	29 / 33	1/3	18	34 7/8"	10 1/2"	15 1/4" x 7 3/4"	18 1/2" x 10"	18" x 9 1/2"
14	275 - 1350	950	30 / 27	1/2	18	34 7/8"	14"	17 3/4" x 11 3/4"	18" x 11 1/2"	18" x 12"
16	1000 - 2600	1800	34 / 31	1	19	34 7/8"	16"	17 3/4" x 13 3/4"	18" x 13 7/8"	18" x 13 1/2"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Discharge sound data has been corrected for end reflection. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 modified for underfloor applications, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- LMHS - Single duct terminal unit

FEATURES

- 20 or 22 gauge casing construction
- Pneumatic, analog, or direct digital controls
- Attenuated units available for critical, low sound applications
- Low profile units available; max height is 10 1/4"

LINERS

- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Steriliner - Foil faced duct board, 13/16" thick
- Sterilwall - Solid double wall with 1/2" or 1" thick dual density fiberglass
- Perforated double wall with 1/2" or 1" thick dual density fiberglass

HOT WATER HEAT

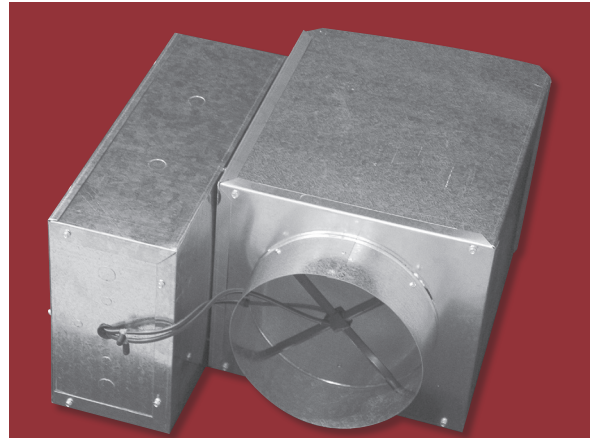
- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Vent and drain option available
- Left-hand or right-hand coil connections
- AHRI 410 certified

ELECTRIC HEAT

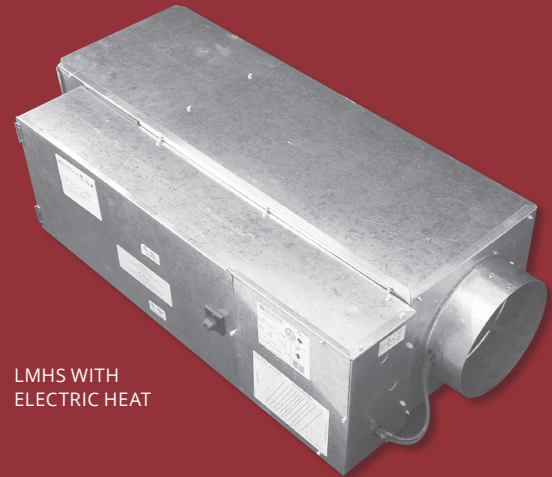
- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage options:
 - 120, 208/240, 277, or 480 volt, 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)

CERTIFICATIONS

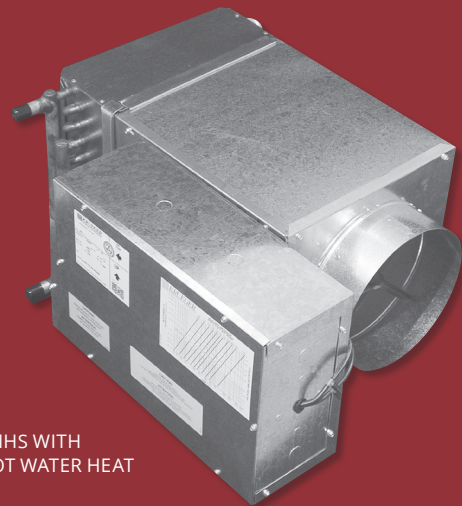
- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 429 for units with factory provided transformers
- ETL Listed - Adherence to UL 1996 for units with electric heat



LMHS BASE UNIT



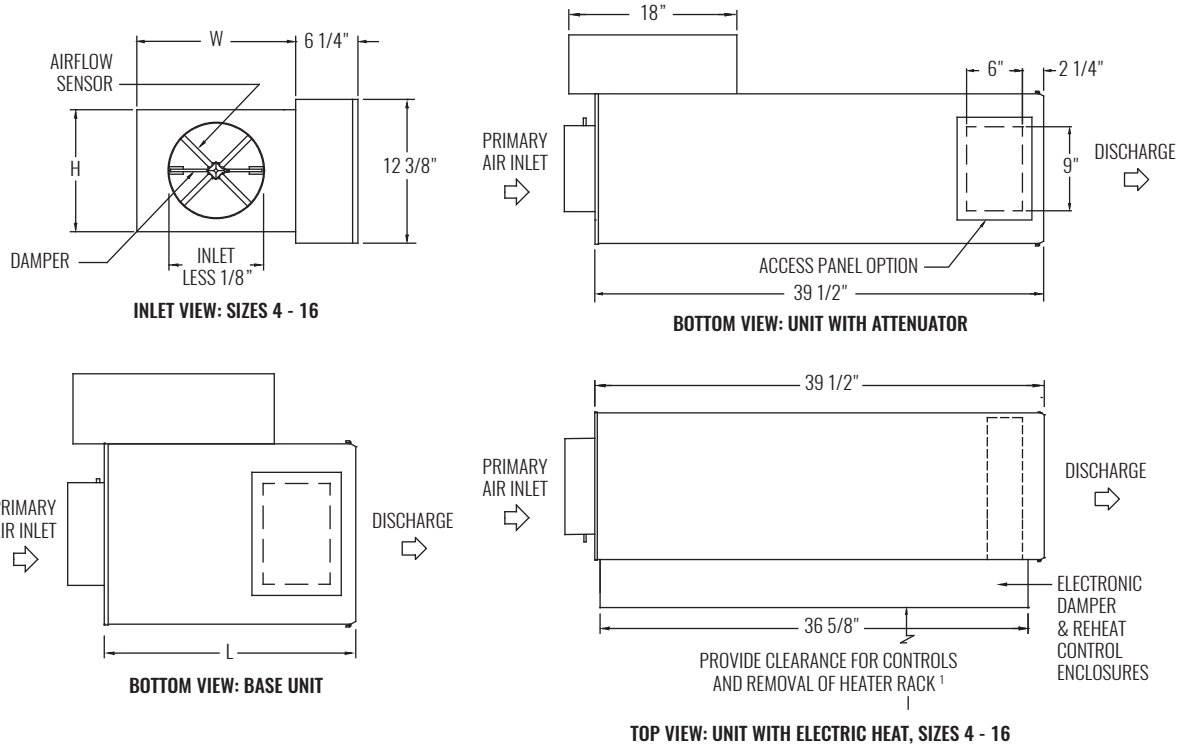
LMHS WITH ELECTRIC HEAT



LMHS WITH HOT WATER HEAT



DIMENSIONAL DATA



NOTES: Right-hand unit with electronic control enclosure shown; left-hand is available. Slip and Drive outlet duct connection. Access panel not available on electric heat units. Access panel for size 22 only available on attenuated unit. Damper extends past base unit on sizes 14 (2") and 16 (3"). See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS		
	INLET	AIRFLOW RANGE (CFM)	NOMINAL AIRFLOW (CFM)	RADIATED & DISCHARGE NC	L (BASE UNIT)	W
4"	25 - 230	150	< 20 / 26	15 1/2"	12"	8"
5"	36 - 360	250	20 / 29	15 1/2"	12"	8"
6"	52 - 515	400	27 / 29	15 1/2"	12"	8"
7"	70 - 700	550	26 / 31	15 1/2"	12"	10"
8"	92 - 920	700	28 / 31	15 1/2"	12"	10"
9"	116 - 1160	900	24 / 25	15 1/2"	14"	12 1/2"
10"	145 - 1425	1100	24 / 26	15 1/2"	14"	12 1/2"
12"	205 - 2060	1600	29 / 26	15 1/2"	16"	15"
14"	281 - 2800	2100	25 / 26	15 1/2"	20"	17 1/2"
16"	367 - 3660	2800	31 / 27	15 1/2"	24"	18"
22"	700 - 7000	5300	48 / 45	15"	38"	18"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- LMHD - Dual duct terminal unit, non-airflow mixing

FEATURES

- 20 or 22 gauge casing construction
- Dual inlet airflow sensing

LINERS

- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free - 1/2" or 1" thick
- Steriliner - Foil faced duct board, 13/16" thick
- Sterilwall - Solid double wall with 1/2" fiberglass
- Perforated double wall with 1/2" fiberglass

CONTROLS

- Pneumatic Controls - Pressure independent, factory supplied, factory mounted, and factory set airflows
- Analog Controls - Pressure independent, factory supplied and mounted
- DDC Controls - Factory mounted and supplied by others, variety of wiring and mounting configurations

COMPATIBLE OPTIONS AND ACCESSORIES

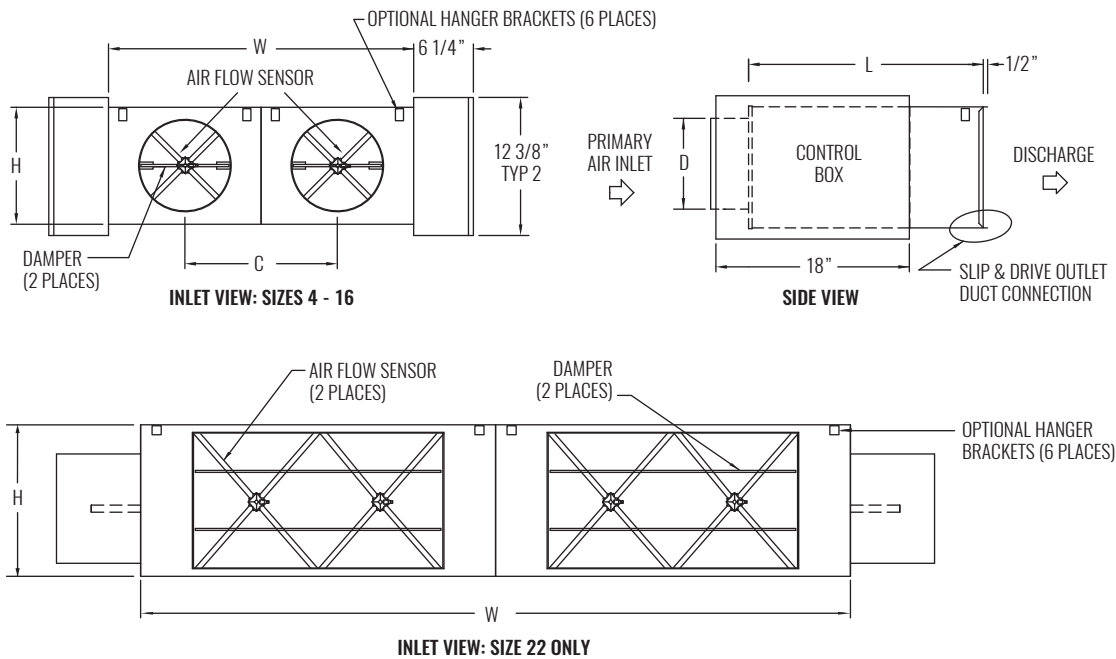
- Bottom access panels
- Hanger brackets
- Transformer - 24 VAC, 120V, 208V, 240V, or 277V
- Toggle disconnect switch

CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 429 units with factory provided transformers



DIMENSIONAL DATA



NOTES: LMHD with electronic control enclosure is shown; cold inlet designates unit casing hand. Slip and Drive outlet duct connection. Bottom access panel not available for size 22. Damper extends past base unit on sizes 14 (2") and 16 (3"). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS					
	INLET AIRFLOW RANGE (CFM PER INLET)	RATED AIRFLOW PER INLET (CFM)	RADIATED / DISCHARGE NC	A	C	D	H	L	W
4"	40 - 230	150	<20 / 23	5 3/8"	12 1/8"	3 7/8"	8"	15 1/2"	24 1/8"
5"	62 - 360	250	20 / 27	5 3/8"	12 1/8"	4 7/8"	8"	15 1/2"	24 1/8"
6"	90 - 515	400	27 / 27	3 3/8"	12 1/8"	5 7/8"	8"	15 1/2"	24 1/8"
7"	121 - 700	550	26 / 30	3 3/8"	12 1/8"	6 7/8"	10"	15 1/2"	24 1/8"
8"	160 - 920	700	28 / 29	3 3/8"	12 1/8"	7 7/8"	10"	15 1/2"	24 1/8"
9"	201 - 1160	900	24 / 24	3 3/8"	14 1/8"	8 7/8"	12 1/2"	15 1/2"	28 1/8"
10"	250 - 1425	1100	24 / 24	3 3/8"	14 1/8"	9 7/8"	12 1/2"	15 1/2"	28 1/8"
12"	360 - 2060	1600	28 / 25	3 3/8"	16 1/8"	11 7/8"	15"	15 1/2"	32 1/8"
14"	480 - 2800	2100	25 / 25	3 3/8"	20 1/8"	13 7/8"	17 1/2"	15 1/2"	40 1/8"
16"	630 - 3660	2800	31 / 28	3 3/8"	24 1/8"	15 7/8"	18"	15 1/2"	48 1/8"
22"	1212 - 7000	5300	48 / 40	3 3/8"	38 1/8"	23 7/8" x 15 7/8"	18"	15"	76 1/8"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- LMHDT - Dual duct terminal unit, airflow mixing

FEATURES

- 20 or 22 gauge casing construction
- Available in unequal inlet sizes
- Fully removable top and bottom access panels
- Multiple airflow sensor arrangements available, including discharge airflow sensing

LINERS

- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Foil Encapsulated Fiberglass - 1/2" or 1" thick
- Steriliner - Foil faced duct board, 13/16" thick
- Sterilwall - Solid double wall with 1/2" or 1" thick dual density fiberglass
- Perforated double wall with 1/2" or 1" thick dual density fiberglass, 1/2" or 1" foil encapsulated fiberglass, or Steriliner

CONTROLS

- Pneumatic Controls - Pressure independent, factory supplied, factory mounted, and factory set airflows
- Analog Controls - Pressure independent, factory supplied and mounted
- DDC Controls - Factory mounted and supplied by others, variety of wiring and mounting configurations

COMPATIBLE OPTIONS AND ACCESSORIES

- Hanger brackets
- Transformer - 24 VAC, 120V, 208V, 240V, or 277V
- Toggle disconnect switch

CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 429 for units with factory provided transformers



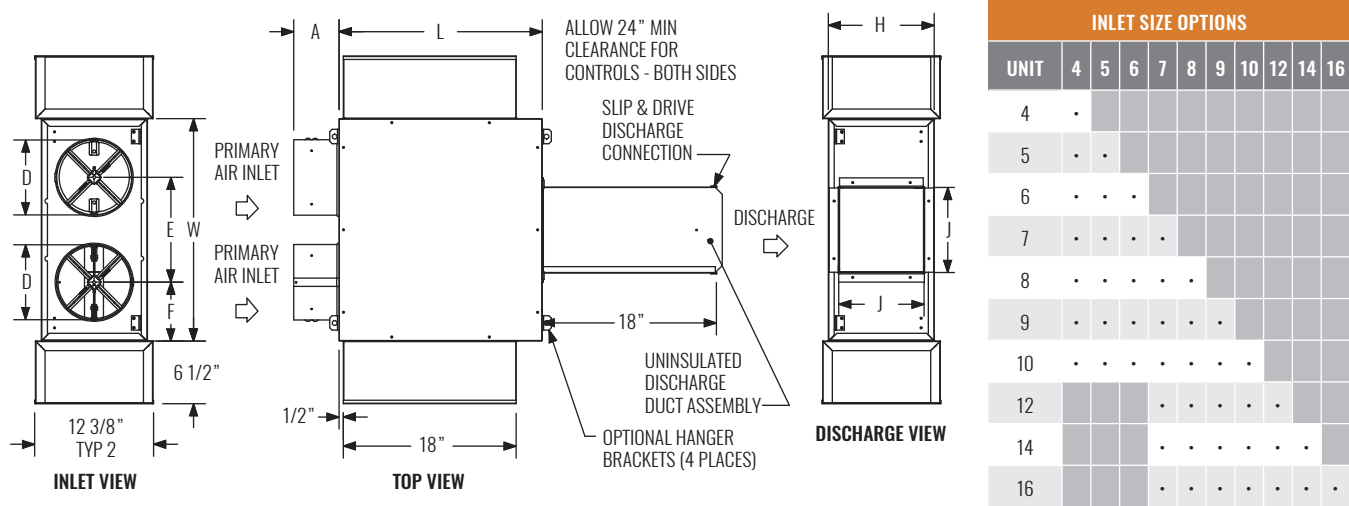
LMHDT

Dual Duct Terminal Unit, Airflow Mixing



TERMINAL UNITS

DIMENSIONAL DATA



NOTES: LMHDT with electronic control enclosure is shown with sensors in each inlet; cold inlet designates unit casing hand. Discharge duct assembly is necessary for discharge airflow sensor when selected, otherwise discharge duct assembly is optional. Slip and Drive outlet duct connection. Dot (•) in table indicates available inlet size. See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS							
	INLET AIRFLOW RANGE (CFM PER INLET)	AIRFLOW PER INLET (CFM)	RADIATED & DISCHARGE NC	L	W	H	A	D	E	F	DISCHARGE J
4"	40 - 230	150	23 / 27	17 15/16"	19 3/16"	8 7/8"	6 7/8" ¹	3 7/8"	8 15/16"	5"	6 7/8"
5"	62 - 360	250	26 / 32	17 15/16"	19 3/16"	8 7/8"	6 7/8" ¹	4 7/8"	8 15/16"	5"	6 7/8"
6"	90 - 515	400	29 / 33	17 15/16"	19 3/16"	8 7/8"	4 7/8"	5 7/8"	8 15/16"	5"	6 7/8"
7"	121 - 700	550	34 / 31	21 3/16"	23 3/16"	10 7/8"	6 7/8" ¹	6 7/8"	10 15/16"	6"	8 7/8"
8"	160 - 920	700	35 / 35	21 3/16"	23 3/16"	10 7/8"	4 7/8"	7 7/8"	10 15/16"	6"	8 7/8"
9"	201 - 1160	900	27 / 21	30 5/8"	27 3/16"	13 7/8"	4 7/8"	8 7/8"	12 15/16"	7"	9 7/8"
10"	250 - 1425	1100	30 / 27	30 5/8"	27 3/16"	13 7/8"	4 7/8"	9 7/8"	12 15/16"	7"	9 7/8"
12"	360 - 2060	1600	39 / 27	33 7/8"	33 3/16"	15 7/8"	6 7/8"	11 7/8"	17"	8"	11 7/8"
14"	480 - 2800	2100	34 / 26	37 7/16"	37 3/16"	18 1/4"	6 7/8"	13 7/8"	19"	9"	13 7/8"
16"	630 - 3660	2800	34 / 33	40 15/16"	41 3/16"	18 1/4"	6 7/8"	15 7/8"	21"	10"	15 7/8"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

¹ Dimension A for sizes 4, 5, and 7 include an inlet adapter.

MODEL

- QFC - Series fan powered terminal unit

FEATURES

- 20 or 22 gauge casing construction
- Pneumatic, analog, or direct digital controls
- Fully removable bottom access panel

MOTORS

- PSC Motors - Manually adjustable SCR speed controller
- EC Motors - Constant airflow, pressure independent
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- Multi-voltage: 120V, 208/240V, 277V 1-phase

LINERS

- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Foil Encapsulated Fiberglass - 1/2" or 1" thick

HOT WATER HEAT

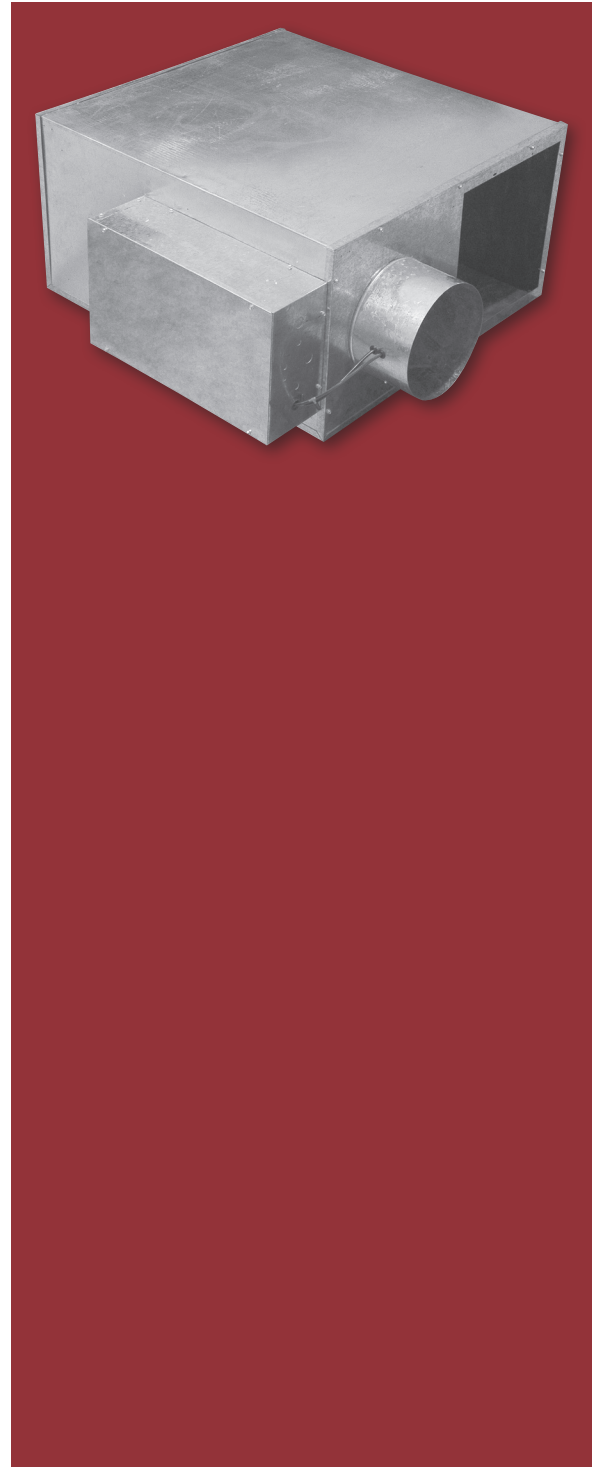
- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Left-hand or right-hand coil connections
- Available access panel for servicing water coil fin pack
- Vent and drain option available
- AHRI 410 certified

ELECTRIC HEAT

- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage options:
 - 120, 208/240, 277, or 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)

COMPATIBLE OPTIONS AND ACCESSORIES

- Induction inlet attenuator
- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- Construction induction inlet filter
- MERV 8 induction inlet filter



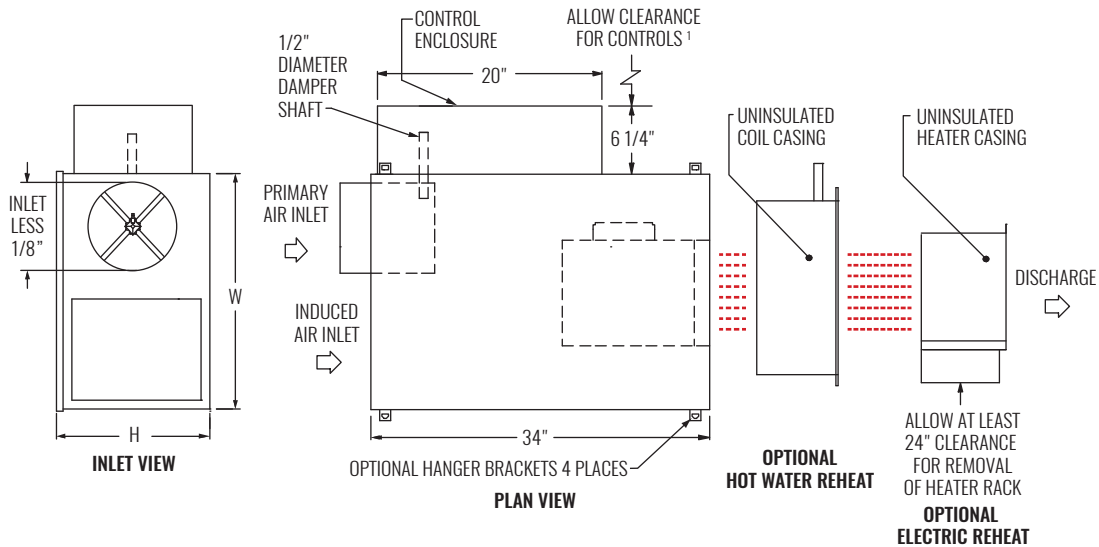
CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 1995 and CSA C22.2 No. 236

WEB SEARCH: QFC



DIMENSIONAL DATA



PERFORMANCE	
PRIMARY INLET SIZE	AIRFLOW RANGE (CFM)
6"	90 - 515
8"	160 - 920
10"	250 - 1425
12"	360 - 2060
14"	480 - 2800
16"	630 - 3660

NOTES: Left-hand unit with electronic control enclosure shown; right-hand is available. Discharge requires flanged duct; connection by others. Unit size 7 is a dual blower unit. Above drawing does not accurately represent a unit size 7, refer to Krueger website for full drawings. See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE				DIMENSIONS				
UNIT	AVAILABLE INLETS (in.)	FAN AIRFLOW RANGE (CFM)	NOMINAL FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	W	H	BASE UNIT DISCHARGE	HOT WATER DISCHARGE	ELECTRIC HEAT DISCHARGE
PSC MOTOR										
2	6	100 - 560	390	38 / 28	1/10	21"	15"	6 3/4"x7 1/2"	15"x 12 1/2"	11"x11"
3	6, 8	300 - 990	700	38 / 31	1/4	21"	15"	9 1/4"x7 1/2"	15"x 12 1/2"	11"x11"
4	8, 10, 12	550 - 1440	1000	38 / 29	1/4	32 1/4"	17 3/4"	11 7/8"x7 1/2"	22"x12 1/2"	14 1/2"x13"
5	10, 12	1100 - 2140	1500	45 / 32	1/2	32 1/4"	17 3/4"	13 1/8"x7 1/2"	22"x15"	14 1/2"x13"
6	12, 14	1200 - 2530	1775	42 / 35	3/4	32 1/4"	17 3/4"	13 1/8"x7 1/2"	24 1/2"x15"	14 1/2"x13"
7	16	2100 - 3900	2730	47 / 34	(2) 3/4	32 1/4"	17 3/4"	32"x11"	34"x 15"	34"x15"
EC MOTOR										
3	6, 8	165 - 1100	775	39 / 31	1/2	21"	15"	9 1/4"x7 1/2"	15"x 12 1/2"	11"x11"
6	10, 12, 14	385 - 2550	1800	42 / 35	1	32 1/4"	17 3/4"	13 1/8"x7 1/2"	24 1/2"x15"	14 1/2"x13"
7	16	685 - 4550	3200	48 / 35	(2) 1	32 1/4"	17 3/4"	32"x11"	34"x 15"	34"x15"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- QFV - Parallel fan powered terminal unit

FEATURES

- 20 or 22 gauge casing construction
- Pneumatic, analog, or direct digital control options
- Fully removable bottom access panel

MOTORS

- PSC Motors - Manually adjustable SCR speed controller
- Multi-voltage: 120V, 208/240V, or 277V 1-phase

LINERS

- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Foil Encapsulated Fiberglass - 1/2" or 1" thick

HOT WATER HEAT

- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Left-hand or right-hand coil connections
- Vent and drain option available
- Available access panel for servicing water coil fin pack
- AHRI 410 certified

ELECTRIC HEAT

- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage options:
 - 120, 208/240, 277, or 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)

COMPATIBLE OPTIONS AND ACCESSORIES

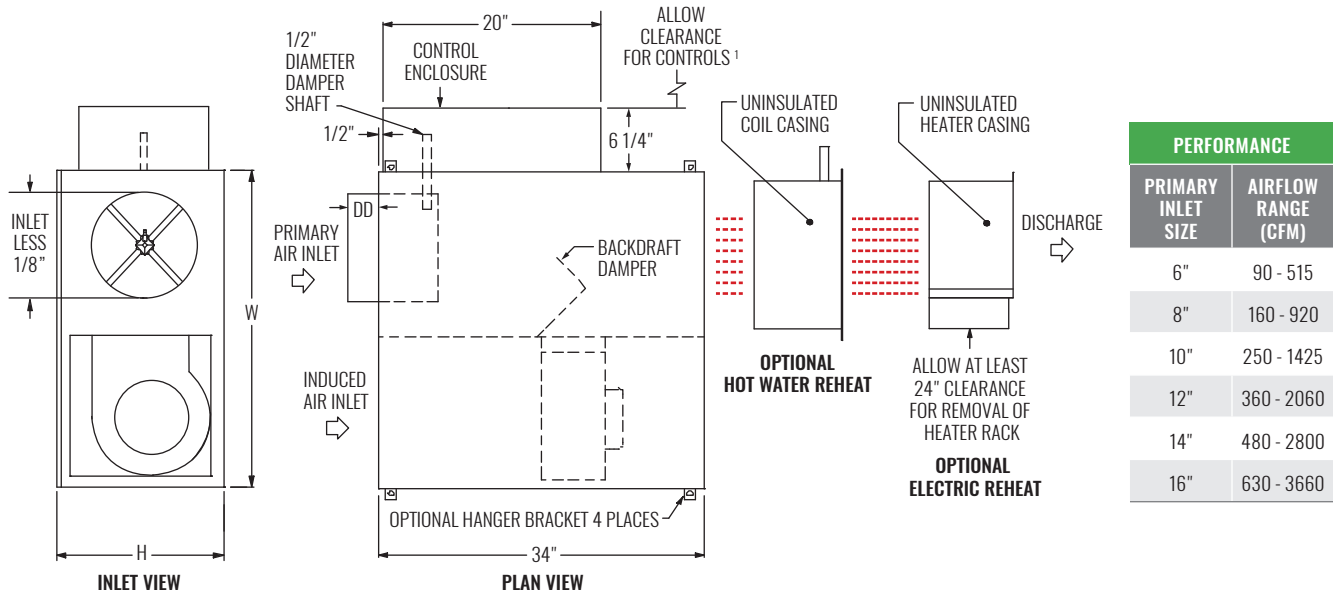
- Induction inlet attenuator
- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Construction induction inlet filter
- Main line fuses

CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 1995 and CSA C22.2 No. 236



DIMENSIONAL DATA



NOTES: Unit available as left-hand primary air configuration only, as shown. Discharge requires flanged duct; connection by others. See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE					DIMENSIONS				
UNIT	AVAILABLE INLETS (in.)	FAN AIRFLOW RANGE (CFM)	PRIMARY AIRFLOW (CFM)	FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	W	H	BASE UNIT DISCHARGE	HOT WATER DISCHARGE	ELECTRIC HEAT DISCHARGE
PSC MOTOR											
2	6, 8	200 - 400	640	320	36 / 35	1/10	29"	15"	11 1/2"x11 1/2"	15"x12 1/2"	11 1/2"x11 1/2"
3	8, 10	300 - 600	960	480	35 / 35	1/10	29"	15"	11 1/2"x11 1/2"	15"x12 1/2"	11 1/2"x11 1/2"
4	10, 12	480 - 1050	1680	840	38 / 34	1/4	29"	15"	11 1/2"x11 1/2"	22"x12 1/2"	11 1/2"x11 1/2"
5	12, 14	860 - 1500	2400	1200	42 / 36	1/2	37"	17 3/4"	15 1/2"x14"	22"x15"	15 1/2"x14"
6	14, 16	930 - 1800	2880	1440	43 / 36	1/2	37"	17 3/4"	15 1/2"x14"	24 1/2"x15"	15 1/2"x14"
7	16	1140 - 2200	3200	1760	44 / 36	3/4	37"	17 3/4"	15 1/2"x14"	24 1/2"x15"	15 1/2"x14"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- KQFS - Ultra quiet, series fan powered terminal unit

FEATURES

- 20 gauge casing construction
- Pneumatic, analog, or direct digital controls
- Easily removable access panel

MOTORS

- PSC Motors - Manually adjustable SCR speed controller
- EC Motors - Constant airflow, pressure independent
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- Multi-voltage: 120V, 208/240V, or 277V 1-phase

LINERS

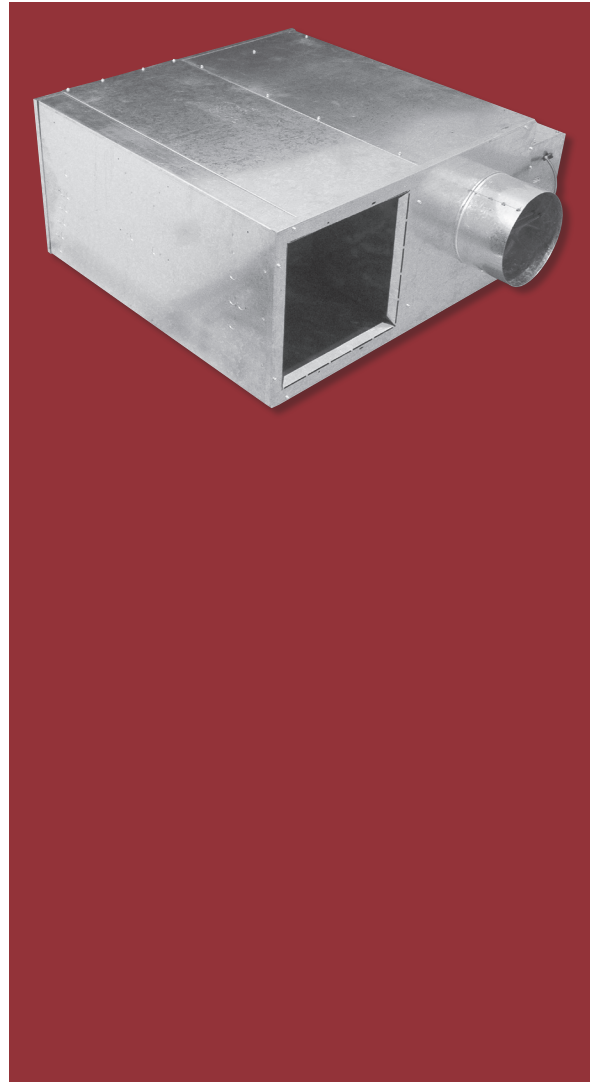
- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Foil Encapsulated Fiberglass - 1/2" or 1" thick
- Steriliner - Foil faced duct board, 13/16" thick
- Sterilwall - Solid double wall with 1/2" or 1" thick dual density fiberglass
- Perforated double wall with 1/2" or 1" thick dual density fiberglass or foil encapsulated fiberglass

HOT WATER HEAT

- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Left-hand or right-hand coil connections
- Vent and drain option available
- AHRI 410 certified

ELECTRIC HEAT

- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage options:
 - 120, 208/240, 277, 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)



COMPATIBLE OPTIONS AND ACCESSORIES

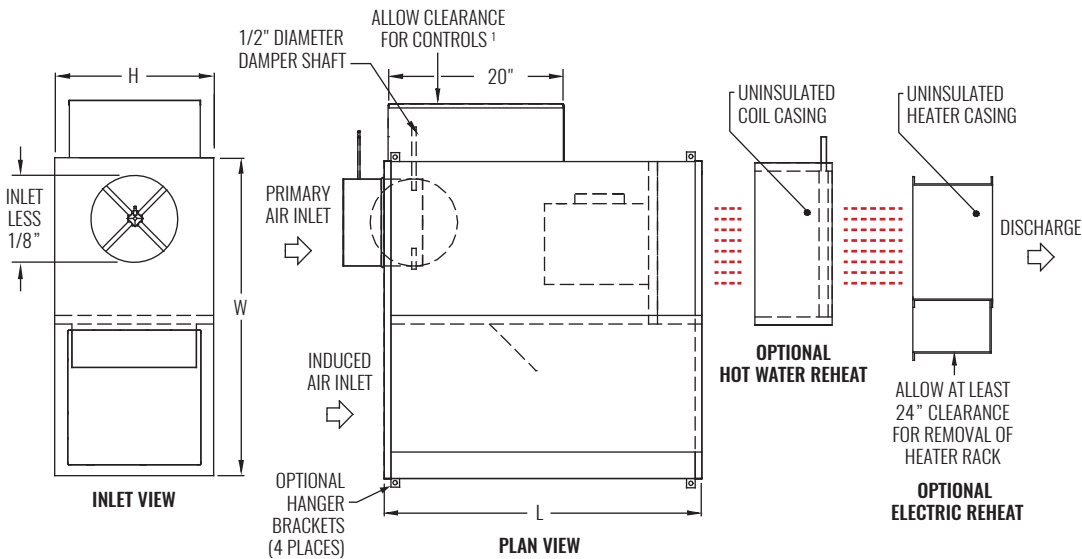
- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- Construction induction inlet filter
- MERV 8 induction inlet filter

CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 1995 and CSA C22.2 No. 236

[WEB SEARCH: KQFS](#)

DIMENSIONAL DATA



PERFORMANCE	
PRIMARY INLET SIZE	AIRFLOW RANGE (CFM)
6"	90 - 515
8"	160 - 920
10"	250 - 1425
12"	360 - 2060
14"	480 - 2800
16"	630 - 3000

NOTES: Left-hand unit with electronic control enclosure shown; right-hand is available. Discharge requires flanged duct; connection by others. See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE				DIMENSIONS					
UNIT	AVAILABLE INLETS (in.)	FAN AIRFLOW RANGE (CFM)	NOMINAL FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	L	W	H	BASE UNIT DISCHARGE	HOT WATER DISCHARGE	ELECTRIC HEAT DISCHARGE
PSC MOTOR											
2	6, 8	50 - 530	370	27 / 29	1/10	39 1/2"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
3	6, 8, 10, 12	200 - 1110	800	34 / 28	1/4	39 1/2"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
4	8, 10, 12	500 - 1400	1000	36 / 31	1/4	42 1/8"	46 1/8"	20 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
5	10, 12, 14	800 - 1850	1300	35 / 29	1/2	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
6	10, 12, 14, 16	1200 - 2600	1800	38 / 32	3/4	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
7	10, 12, 14, 16	1250 - 3000	2100	43 / 35	1	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
EC MOTOR											
3	6, 8, 10, 12	250 - 1050	750	32 / 26	1/2	39 1/2"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
6	10, 12, 14, 16	500 - 2000	1400	32 / 27	1	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
7	10, 12, 14, 16	600 - 2500	1750	36 / 32	1	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power Levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- KQFS-FA - Ultra quiet, fresh air, series fan powered terminal unit

FEATURES

- Additional fresh air inlet to provide pressure independent ventilation control
- 20 gauge casing construction
- Direct digital controls
- Easily removable access panel

MOTORS

- PSC Motors - Manually adjustable SCR speed controller
- EC Motors - Constant airflow, pressure independent
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- Multi-voltage: 120V, 208/240V, or 277V 1-phase

LINERS

- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Foil Encapsulated Fiberglass - 1/2" or 1" thick
- Steriliner - Foil faced duct board - 13/16" thick
- Sterilwall - Solid double wall with 1/2" or 1" thick dual density fiberglass
- Perforated double wall with 1/2" or 1" thick dual density fiberglass or foil encapsulated fiberglass

HOT WATER REHEAT

- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Left-hand or right-hand coil connections
- Vent and drain option available
- AHRI 410 certified

ELECTRIC HEAT

- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage Options:
 - 120, 208/240, 277, 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)



TERMINAL UNITS

KQFS-FA

COMPATIBLE OPTIONS AND ACCESSORIES

- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- Construction induction inlet filter

CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 1995 and CSA C22.2 No. 236

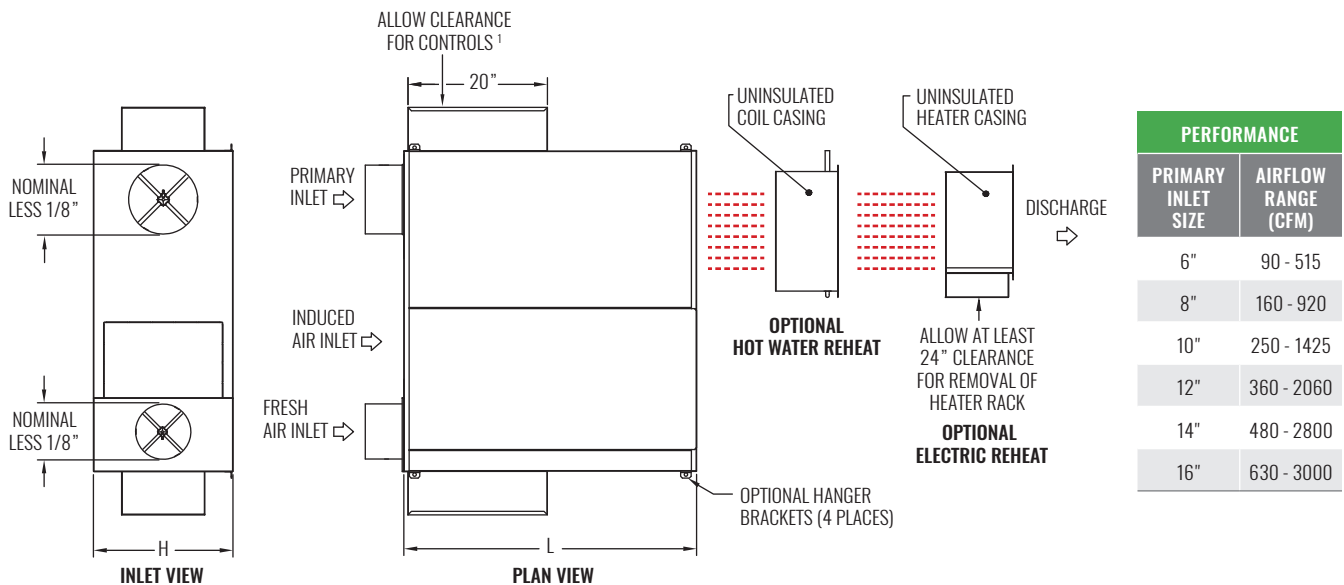
WEB SEARCH: KQFS-FA


KQFS-FA

Ultra Quiet Fan Powered Terminal Unit, Series Flow, Fresh Air



DIMENSIONAL DATA



NOTES: Left-hand unit with electronic control enclosure shown; right-hand is available. Hand is determined by primary inlet side. Discharge requires flanged duct; connection by others. See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

PERFORMANCE	
PRIMARY INLET SIZE	AIRFLOW RANGE (CFM)
6"	90 - 515
8"	160 - 920
10"	250 - 1425
12"	360 - 2060
14"	480 - 2800
16"	630 - 3000

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE				DIMENSIONS					
UNIT	AVAILABLE INLETS (in.)	FAN AIRFLOW RANGE (CFM)	NOMINAL FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	L	W	H	BASE UNIT DISCHARGE	HOT WATER DISCHARGE	ELECTRIC HEAT DISCHARGE
PSC MOTOR											
2	6, 8	50 - 530	370	27 / 29	1/10	36 1/8"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
3	6, 8, 10, 12	200 - 1110	800	34 / 28	1/4	36 1/8"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
4	8, 10, 12	500 - 1400	1000	36 / 31	1/4	42 1/8"	46 1/8"	20 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
5	10, 12, 14	800 - 1850	1300	35 / 29	1/2	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
6	10, 12, 14, 16	1200 - 2600	1800	38 / 32	3/4	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
7	10, 12, 14, 16	1250 - 3000	2100	43 / 35	1	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
EC MOTOR											
3	6, 8, 10, 12	250 - 1050	750	32 / 26	1/2	36 1/8"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
6	10, 12, 14, 16	500 - 2000	1400	32 / 27	1	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
7	10, 12, 14, 16	600 - 2500	1750	36 / 32	1	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

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MODEL

- KQFP - Ultra quiet, parallel fan powered terminal unit

FEATURES

- 20 gauge casing construction
- Pneumatic, analog, or direct digital controls
- Easily removable access panel

MOTORS

- PSC Motors - Manually adjustable SCR speed controller
- EC Motors - Electronically Commutated Motor
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- Multi-voltage: 120V, 208/240V, or 277V 1-phase

LINERS

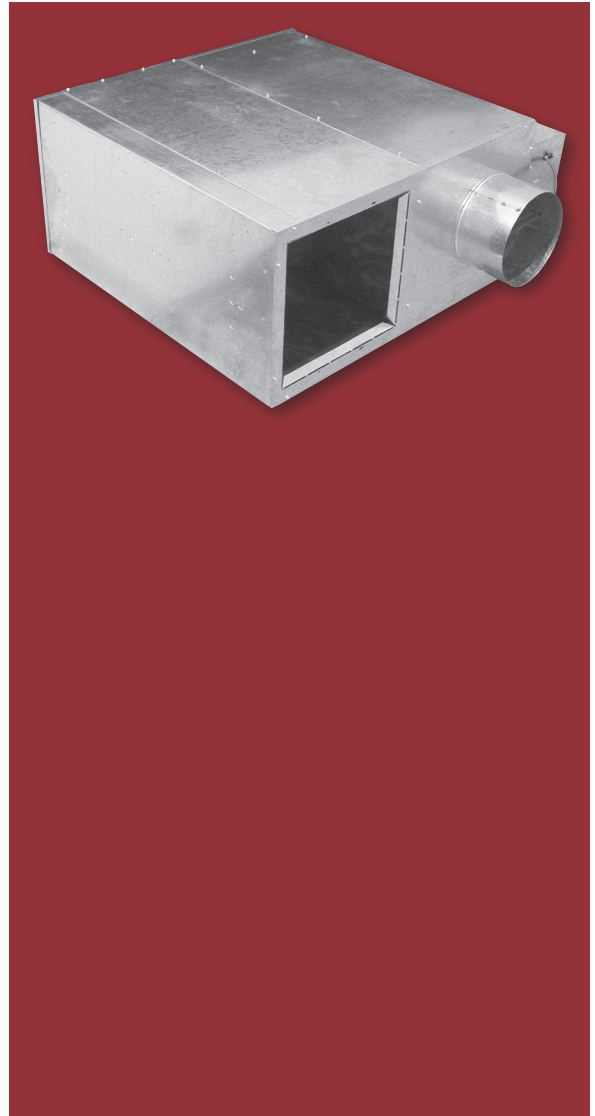
- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Foil Encapsulated Fiberglass - 1/2" or 1" thick
- Steriliner - Foil faced duct board, 13/16" thick
- Sterilwall - Solid double wall with 1/2" or 1" thick dual density fiberglass
- Perforated double wall with 1/2" or 1" thick dual density fiberglass or foil encapsulated fiberglass

HOT WATER REHEAT

- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Left-hand or right-hand coil connections
- Induced inlet and discharge mounting configurations
- Vent and drain option available
- AHRI 410 certified

ELECTRIC HEAT

- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage options:
 - 120, 208/240, 277, 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)



COMPATIBLE OPTIONS AND ACCESSORIES

- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- Construction induction inlet filter
- MERV 8 induction inlet filter

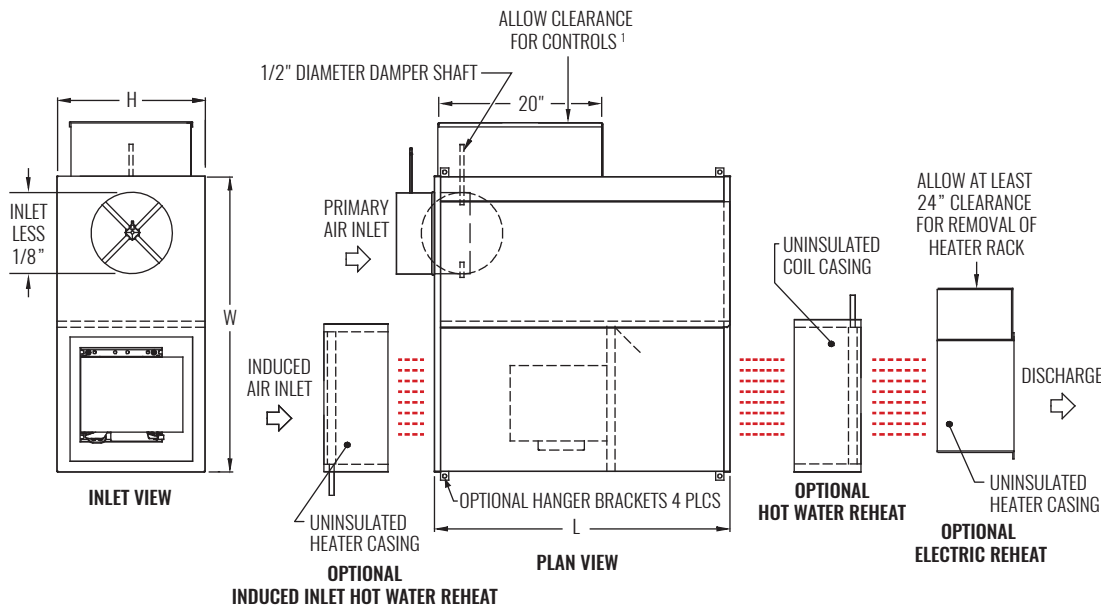
CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 1995 and CSA C22.2 No. 236

WEB SEARCH: KQFP



DIMENSIONAL DATA



PERFORMANCE	
PRIMARY INLET SIZE	AIRFLOW RANGE (CFM)
6"	90 - 515
8"	160 - 920
10"	250 - 1425
12"	360 - 2060
14"	480 - 2800
16"	630 - 3660

NOTES: Left-hand unit with electronic control enclosure shown; right-hand is available. Discharge requires flanged duct; connection by others. See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE					DIMENSIONS					
UNIT	AVAILABLE INLETS (in.)	FAN AIRFLOW RANGE (CFM)	PRIMARY AIRFLOW (CFM)	NOMINAL FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	L	W	H	BASE UNIT DISCHARGE	HOT WATER DISCHARGE	ELECTRIC HEAT DISCHARGE
PSC MOTOR												
2	6, 8	150 - 500	700	350	35 / 22	1/4	39 1/2"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
3	6, 8, 10	160 - 800	1100	550	33 / 26	1/4	39 1/2"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
4	6, 8, 10, 12	190 - 900	1260	630	33 / 22	1/4	42 1/8"	46 1/8"	20 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
5	10, 12, 14	480 - 1700	1600	800	35 / 21	1/2	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
6	10, 12, 14, 16	500 - 1700	2000	1000	40 / 28	1/2	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
7	10, 12, 14, 16	780 - 2000	2400	1200	42 / 27	3/4	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"
EC MOTOR												
3	6, 8, 10, 12	150 - 1000	1400	700	35 / 24	1/2	39 1/2"	36 1/8"	18 1/16"	14"x11"	17"x15 1/8"	14 1/2"x11 1/2"
7	10, 12, 14, 16	240 - 1600	2240	1120	41 / 26	1	42 1/8"	46 1/8"	20 1/16"	17"x15"	25"x17 5/8"	17"x15"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

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MODEL

- KLPS - Low profile, series fan powered terminal unit

FEATURES

- 20 gauge casing construction
- Pneumatic, analog, or direct digital controls
- Fully removable bottom access panel

MOTORS

- PSC Motors - Manually adjustable SCR speed controller
- EC Motors - Constant airflow, pressure independent
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- Available Voltages: 120V, 208/240V, or 277V 1-phase

LINERS

- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Foil Encapsulated Fiberglass - 1/2" or 1" thick
- Steriliner - Foil faced duct board, 13/16" thick
- Sterilwall - Solid double wall with 1/2" thick dual density fiberglass
- Perforated double wall with 1/2" thick dual density fiberglass or foil encapsulated fiberglass

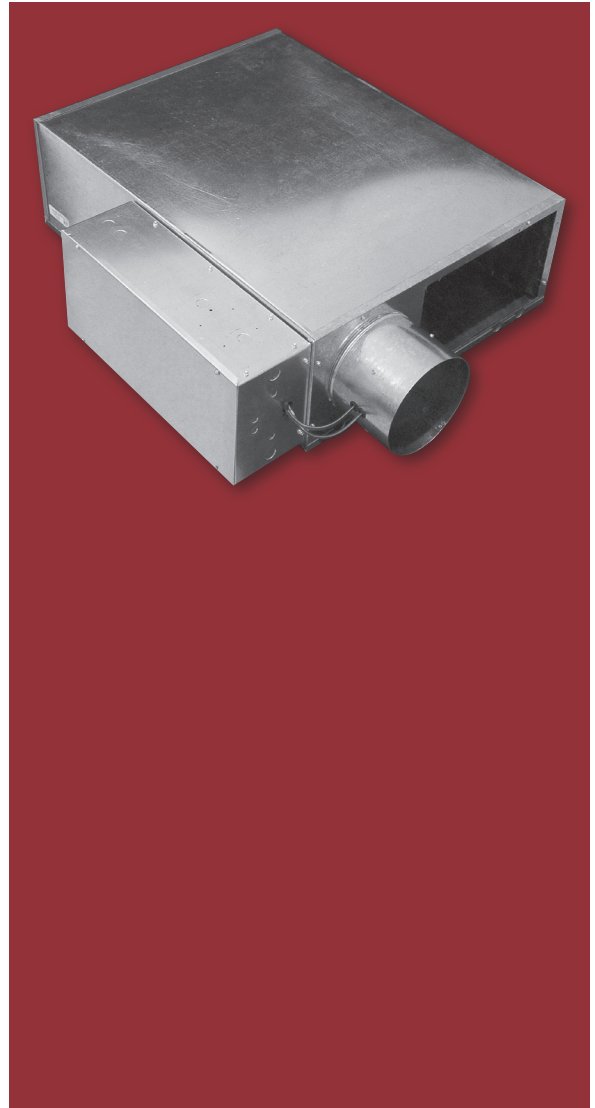
NOTE: 1" and Steriliner liners only available on unit size 5.

HOT WATER HEAT

- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Left-hand or right-hand coil connections
- Vent and drain option available
- AHRI 410 certified

ELECTRIC HEAT

- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage options:
 - 120, 208/240, 277, 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)



COMPATIBLE OPTIONS AND ACCESSORIES

- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- Construction induction inlet filter
- MERV 8 induction inlet filter

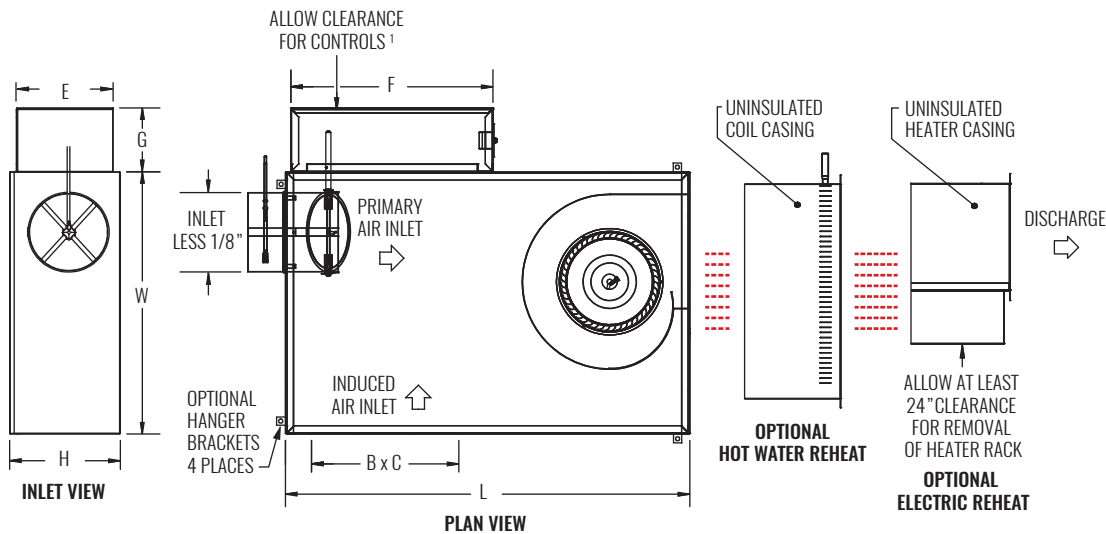
CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 1995 and CSA C22.2 No. 236

WEB SEARCH: KLPS



DIMENSIONAL DATA



PERFORMANCE	
PRIMARY INLET SIZE	AIRFLOW RANGE (CFM)
4"	40 - 230
5"	60 - 320
6"	90 - 515
7"	120 - 700
8"	160 - 920
10"	250 - 1425
12"	360 - 2060
14"	480 - 2800

NOTES: Left-hand unit with electronic control enclosure shown; right-hand is available. Discharge requires flanged duct; connection by others. Unit size 4 is a dual blower unit. Above drawing does not accurately represent a unit size 4, refer to Krueger website for full drawings. See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

PERFORMANCE AND DIMENSIONAL DATA

UNIT	SIZE	PERFORMANCE				DIMENSIONS								
		AVAILABLE INLETS (in.)	FAN AIRFLOW RANGE (CFM)	NOMINAL FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	L	W	H	E	F	G	BASE UNIT DISCHARGE	HOT WATER DISCHARGE
PSC MOTOR														
3	8, 10	460 - 1075	750	34 / 32	1/4	40"	26"	11"	9 5/8"	20"	6 1/4"	9"x6 7/8"	21 7/8"x8 3/4"	10 1/2"x8 1/2"
4	10, 8x14	805 - 1650	1150	39 / 32	(2) 1/6	40 1/8"	43"	11"	9 5/8"	20"	6 1/4"	20 1/2"x6 7/8"	28 1/8"x8 3/4"	20 1/2"x8 1/2"
5	10, 12, 14	840 - 1970	1375	34 / 31	1/2	46"	36"	17"	12"	20"	6 1/4"	10"x10 5/8"	22"x15"	14 1/2"x13"
EC MOTOR														
1	4, 5, 6, 7	125 - 850	600	38 / 38	1/3	48"	32"	8 5/8"	8 1/8"	32 1/8"	8 1/8"	10"x5 7/8"	20 1/2"x7 5/8"	10 1/2"x7 3/4"
2	6, 8	140 - 925	650	38 / 39	1/3	48"	32"	9 1/2"	8 1/8"	32 1/8"	8 1/8"	10"x5 7/8"	20 1/2"x7 5/8"	10 1/2"x7 3/4"
3	6, 8, 10	170 - 1125	790	33 / 31	1/3	40"	26"	11"	9 5/8"	20"	6 1/4"	9"x6 7/8"	21 7/8"x8 3/4"	10 1/2"x8 1/2"
4	10, 8x14	285 - 1900	1325	44 / 34	(2) 1/3	40 1/8"	43"	11"	9 5/8"	20"	6 1/4"	20 1/2"x6 7/8"	28 1/8"x8 3/4"	20 1/2"x8 1/2"
5	8, 10, 12, 14	265 - 1790	1250	32 / 27	1/2	46"	36"	17"	12"	20"	6 1/4"	10"x10 5/8"	22"x15"	14 1/2"x13"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- KLPS-D - DOAS construction, series fan powered terminal unit

FEATURES

- Induced inlet cooling coil for additional sensible cooling
- Four different low profile unit heights
- 20 gauge casing construction
- Direct digital controls
- Fully removable bottom access panel
- Construction induction inlet filter

MOTORS

- EC Motor - Constant airflow, pressure independent, energy efficient, electronically commutated motor
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- Available voltages: 120V, 208/240V, or 277V 1-phase

LINERS

- Dual Density Fiberglass - 1/2" or 1" thick
- Cellular - Fiber free, 1/2" or 1" thick
- Foil Encapsulated Fiberglass - 1/2" or 1" thick
- Steriliner - Foil faced duct board, 13/16" thick
- Sterilwall - Solid double wall with 1/2" thick dual density fiberglass
- Perforated double wall with 1/2" thick dual density fiberglass or foil encapsulated fiberglass

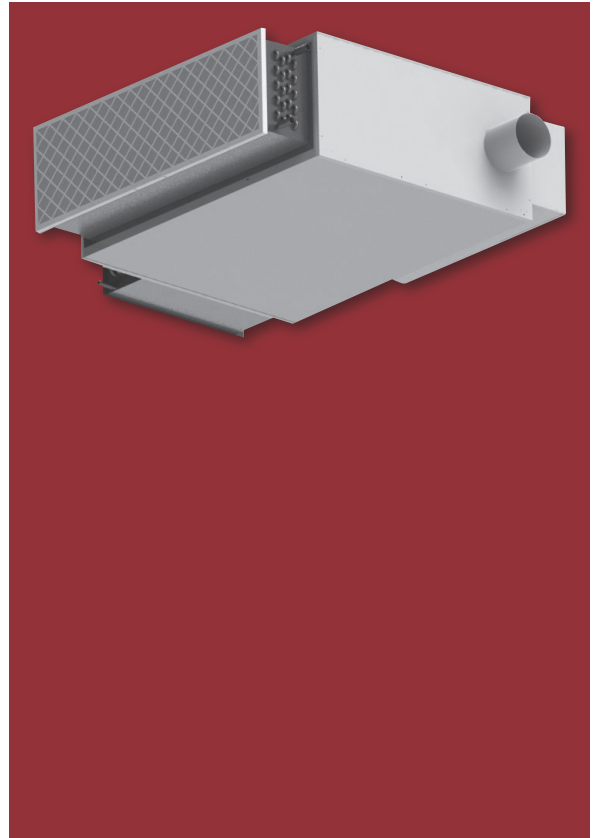
NOTE: 1" and Steriliner liners only available on unit size 5.

SENSIBLE COOLING COIL

- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum, 10 FPI
- 2, 4, 6, or 8 rows of cooling
- Upstream or downstream coil connection
- Factory provided drip tray
- Vent and drain option available
- AHRI 410 certified

HOT WATER HEAT

- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Left-hand, right-hand coil connections
- Vent and drain option available
- AHRI 410 certified



TERMINAL UNITS

KLPS-D

ELECTRIC HEAT

- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage Options:
 - 120, 208/240, 277, or 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)

COMPATIBLE OPTIONS AND ACCESSORIES

- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- MERV 8 induction inlet filter

CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 1995 and CSA C22.2 No. 236

WEB SEARCH: KLPS-D or DOAS



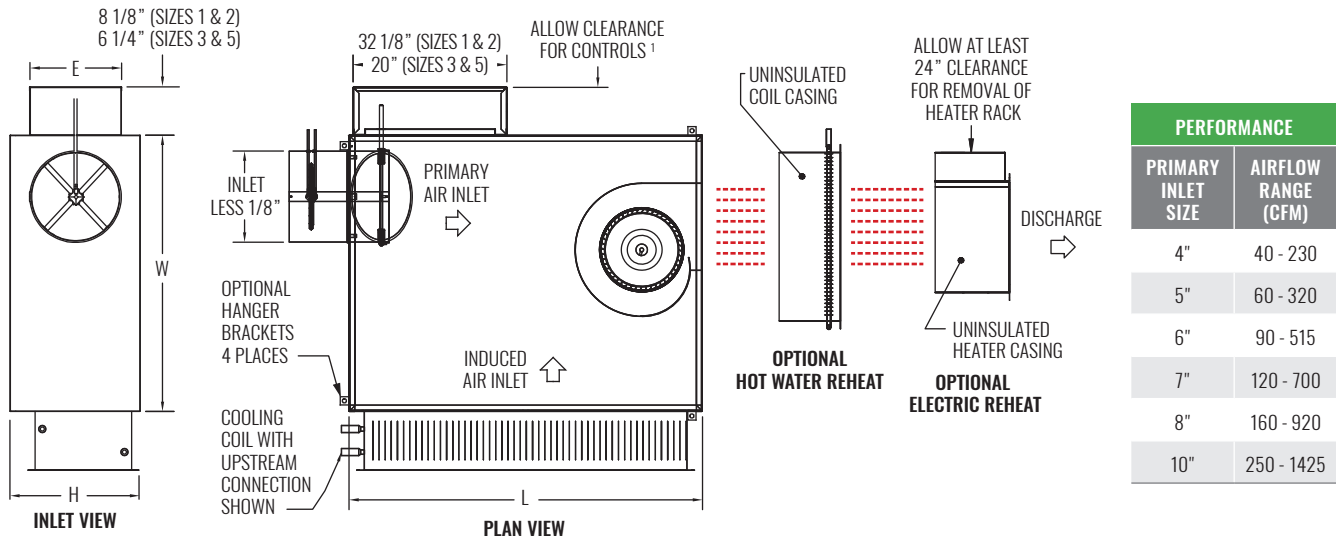
KLPS-D

Low Profile Fan Powered Terminal Unit, Series Flow, DOAS



TERMINAL UNITS

DIMENSIONAL DATA



PERFORMANCE	
PRIMARY INLET SIZE	AIRFLOW RANGE (CFM)
4"	40 - 230
5"	60 - 320
6"	90 - 515
7"	120 - 700
8"	160 - 920
10"	250 - 1425

NOTES: Left-hand unit with electronic control enclosure shown; right-hand is available. Discharge requires flanged duct; connection by others. See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

KLPS-D

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE					DIMENSIONS						
UNIT	AVAILABLE INLETS (in.)	FAN AIRFLOW RANGE (CFM)	NOMINAL FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	SENSIBLE COOLING MBH	L	W	H	E	BASE UNIT DISCHARGE	HOT WATER DISCHARGE	ELECTRIC HEAT DISCHARGE
EC MOTOR													
1	4, 5, 6, 7	105 - 775	660	35 / 31	1/3	9.1	48"	32"	8 5/8"	8 1/8"	10"x5 7/8"	20 1/2"x7 5/8"	10 1/2"x7 3/4"
2	4, 5, 6, 7	135 - 875	745	37 / 35	1/3	10	48"	32"	9 1/2"	8 1/8"	10"x5 7/8"	20 1/2"x7 5/8"	10 1/2"x7 3/4"
3	4, 5, 6, 7, 8	150 - 1000	850	31 / 27	1/3	11.3	40"	26"	11"	9 5/8"	9"x6 7/8"	21 1/8"x8 3/4"	10 1/2"x8 3/8"
5	6, 7, 8, 10	250 - 1625	1200	37 / 27	1/2	15.6	46"	36"	17"	12"	10"x10 5/8"	22"x15"	14 1/2"x12 7/8"

NOTES: Information shown is abbreviated. See website for complete information. Coil performance shown is with a 6 row sensible cooling coil, 57°F EWT, 4 GPM, and 20% primary air supply. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power Levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

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MODEL

- KLPP - Low profile, parallel fan powered terminal unit

FEATURES

- 20 gauge casing construction
- Pneumatic, analog, or direct digital controls
- Fully removable bottom access panel

MOTORS

- PSC Motors - Manually adjustable SCR speed controller
- EC Motors - Electronically commutated motor
- Manual, 0-10VDC, 2-10VDC speed controller options for EC motors
- Available voltages: 120V, 208/240V, or 277V 1-phase

LINERS

- Dual Density Fiberglass - 1/2" thick
- Cellular - Fiber free, 1/2" thick
- Foil Encapsulated Fiberglass - 1/2" thick
- Sterilwall - Solid double wall with 1/2" thick dual density fiberglass
- Perforated double wall with 1/2" thick dual density fiberglass

HOT WATER REHEAT

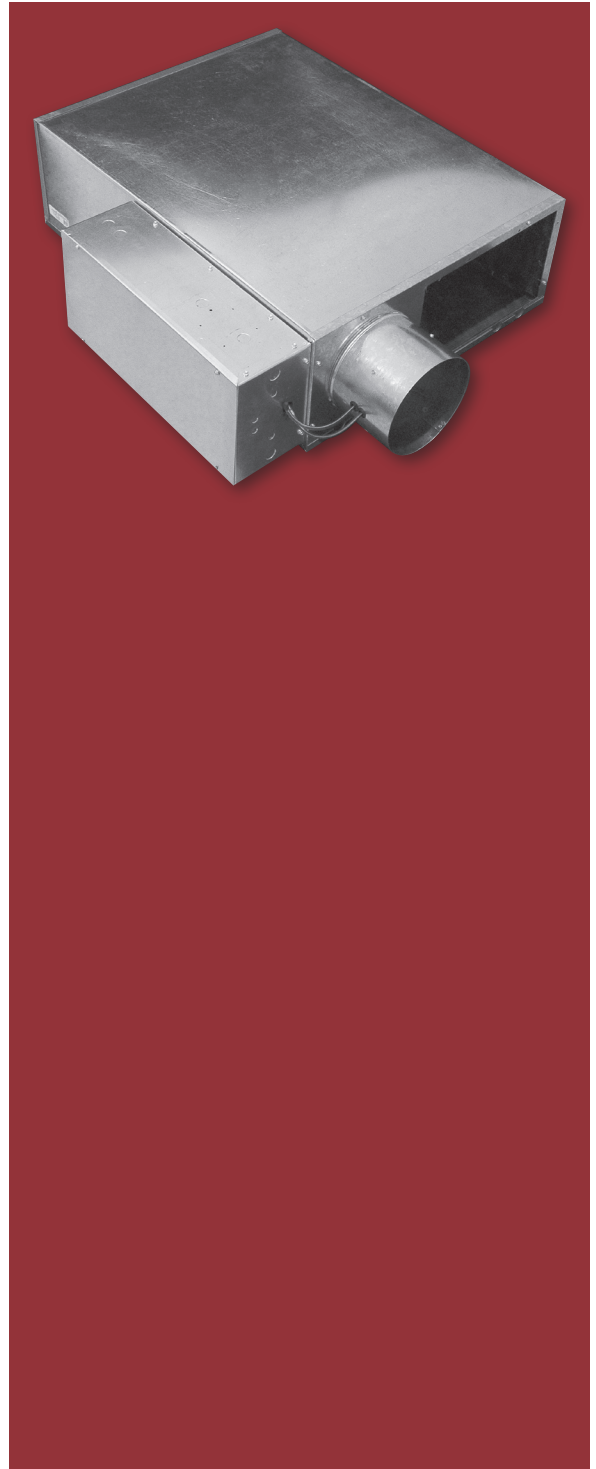
- 1/2" O.D. copper tubes (0.016" tube wall thickness)
- 0.0045" thick aluminum fins
- 10 or 12 FPI (fins per inch)
- 1, 2, 3, or 4 rows of heating
- Left-hand or right-hand coil connections
- Vent and drain option available
- AHRI 410 certified

ELECTRIC HEAT

- Up to 3 stages of electric heat
- Solid state relays available for silent operation
- Available with LineaHeat™, silent operating electronic proportional control
- Line voltage options:
 - 120, 208/240, 277, 480 volt (with neutral), 1-phase
 - 208 volt, 3-phase, 3-wire
 - 480 volt, 3-phase, 4-wire (with neutral)

COMPATIBLE OPTIONS AND ACCESSORIES

- Motor toggle disconnect switch
- Door interlocking disconnect switch
- Fan motor fuse
- Main line fuses
- Construction induction inlet filter
- MERV 8 induction inlet filter



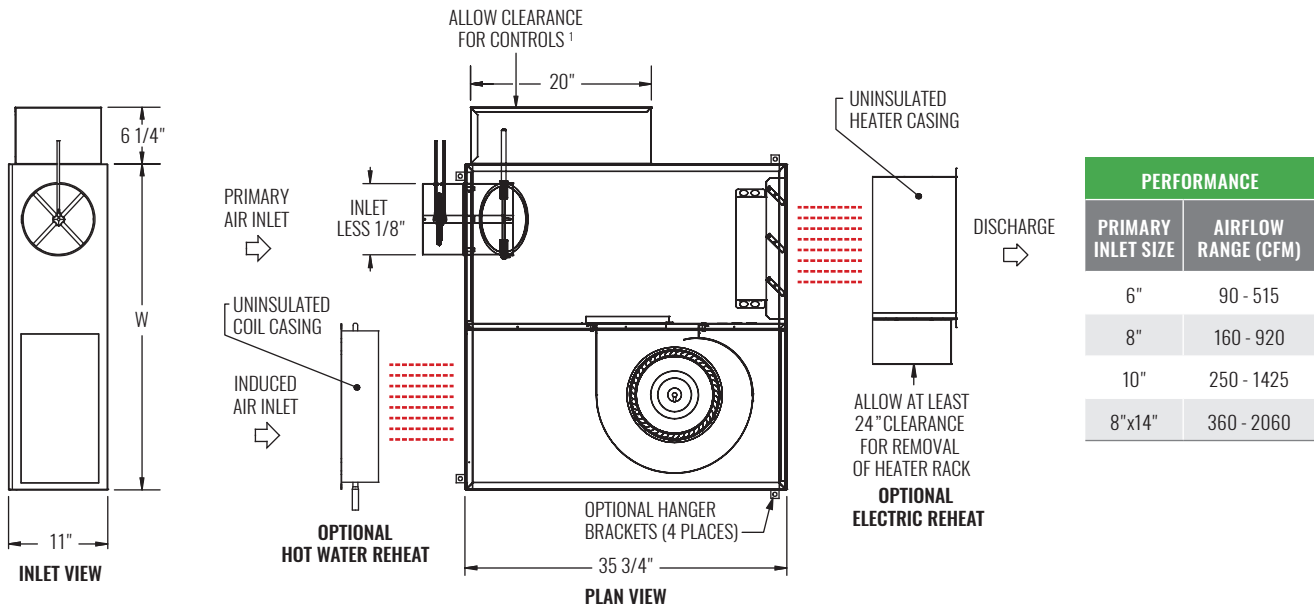
CERTIFICATIONS

- AHRI 880 certified sound performance data
- ETL Listed - Adherence to UL 1995 and CSA C22.2 No. 236

WEB SEARCH: KLPP



DIMENSIONAL DATA



NOTES: Left-hand unit with electronic control enclosure shown; right-hand is available. Discharge requires flanged duct; connection by others. See table below for dimensional references.

¹ Check NEC for unit clearance requirements.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE					DIMENSIONS		
UNIT	AVAILABLE INLETS (in.)	FAN AIRFLOW RANGE (CFM)	PRIMARY AIRFLOW (CFM)	FAN AIRFLOW (CFM)	RADIATED / DISCHARGE NC	MOTOR HP	W	BASE UNIT OR WITH HOT WATER HEAT DISCHARGE	ELECTRIC HEAT DISCHARGE
PSC MOTOR									
2	6, 8, 10	350 - 665	1060	530	35 / 27	1/6	30 1/8"	10" x 7 7/8"	10 1/2" x 7 7/8"
4	8, 10, 8 x 14	420 - 855	1400	700	39 / 16	1/4	36 1/8"	15 7/8" x 7 7/8"	16 1/2" x 7 7/8"
EC MOTOR									
2	6, 8, 10	125 - 820	1300	650	37 / 31	1/3	30 1/8"	10" x 7 7/8"	10 1/2" x 7 7/8"
4	8, 10, 8 x 14	135 - 885	1440	720	39 / 16	1/3	36 1/8"	15 7/8" x 7 7/8"	16 1/2" x 7 7/8"

NOTES: Information shown is abbreviated. See website for complete information. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- SVE - Slide-in, retrofit terminal unit

FEATURES

- Available in many sizes; mounts in almost any square or rectangular duct
- Gasket around the orifice plate and mounting plate give the unit a tight seal inside the existing duct
- Multipoint center averaging sensor amplifies flow signal for best control of low flow rates; center averaging feature provides signal accuracy, regardless of inlet duct configuration
- Multi-blade damper is constructed of heavy gauge galvanized steel to prevent vibration under high pressure conditions
- Elastomer seals on edges of damper blades allow low leakage during full shut off
- Pneumatic, analog, and direct digital controls available
- Formed flanges provide added duct stiffness at insertion point
- Casing may be configured to mount on either right or left side of existing duct

CONTROLS

- Pneumatic Controls – Pressure independent, factory supplied, factory mounted, factory set airflows
- Analog Controls – Pressure independent, factory supplied and mounted
- DDC Controls – Variety of wiring and mounting configurations, factory mounted supplied by others

COMPATIBLE OPTIONS AND ACCESSORIES

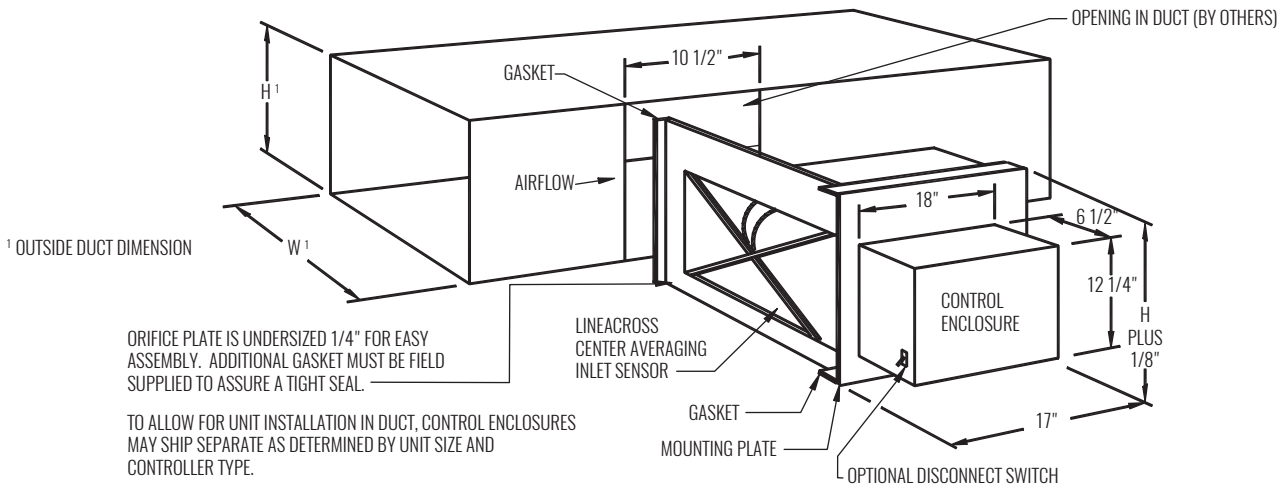
- Control enclosure
- 24 VAC, 50VA transformer
- Disconnect switch for digital controls

CERTIFICATIONS

- ETL Listed - Adherence to UL 429 for units with factory provided transformers
- AHRI certified sound performance data



DIMENSIONAL DATA



PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE				DIMENSIONS	
UNIT	DAMPER	INLET AIRFLOW RANGE (CFM)	NOMINAL AIRFLOW (CFM)	MIN Ps@ NOMINAL AIRFLOW ("WG)	RADIATED / DISCHARGE NC	DUCT SIZES (in.)	
						WIDTH (W)	HEIGHT (H)
A	5" x 5"	79 - 456	235	0.556	35 / 41	5, 6, 8, 10, 12	5
						6, 8, 10, 12	6
						8, 10, 12	8
B	6" x 6"	114 - 656	350	0.548	35 / 39	6, 8, 10, 12, 14	6
						8, 10, 12, 14	8
						10, 12, 14	10
C	8" x 6"	152 - 875	575	0.535	35 / 40	8, 10, 12, 14, 16	6, 8
						10, 12, 14, 16	10
D	10" x 8"	253 - 1458	675	0.561	35 / 37	10, 12, 14, 16, 18	8, 10
						12, 14, 16, 18	12
E	14" x 8"	354 - 2042	1000	0.567	36 / 34	14, 16, 18, 20, 22, 24	8, 10, 12
F	18" x 6"	341 - 1969	950	0.560	36 / 34	18, 20, 22, 24, 26	6, 8, 10
G	12" x 10"	379 - 2188	1075	0.561	35 / 34	12, 14, 16, 18, 20, 22	10, 12
						14, 16, 18, 20, 22	14
H	18" x 10"	568 - 3281	1775	0.541	37 / 35	18, 20, 22, 24, 26, 28, 30	10, 12, 14
J	18" x 12"	682 - 3938	2300	0.543	39 / 36	18, 20, 22, 24, 26, 28	12, 14, 16
K	20" x 14"	884 - 5104	3550	0.520	40 / 38	20, 22, 24, 26, 28, 30	14, 16, 18
L	30" x 12"	1137 - 6563	4725	0.222	45 / 39	30, 32, 34, 36	12, 14, 16
M	22" x 16"	1111 - 6417	4625	0.290	44 / 40	22, 24, 26, 28, 30, 32, 34, 36	16, 18, 20
N	24" x 18"	1364 - 7875	5650	0.221	44 / 38	24, 26, 28, 30, 32, 34, 36	18, 20, 24, 26
P	30" x 20"	1894 - 10938	7875	0.223	43 / 37	30, 32, 34, 36, 38, 40, 42, 44, 46	20, 24, 26
R	40" x 20"	2526 - 14583	10475	0.221	43 / 36	40, 42, 44, 46, 48, 50, 52	20, 24, 26

NOTES: Information shown is abbreviated. See website for complete information. Min Ps is the pressure drop across the unit at nominal CFM shown. Max CFM value is based on a 1" WG differential pressure signal from the inlet airflow sensor. Min CFM value is based on a .03" WG differential pressure signal from the inlet airflow sensor. Minimum may also be 0. To operate a unit below Min CFM value shown above, the DDC controller must be able to accurately read below 0.03" WG. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

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MODEL

- RVE - Retrofit terminal unit

APPLICATIONS

- Retrofitting a high pressure, constant volume system and converting it to a low pressure, variable volume system
- An exhaust or non-reheat supply application where a round to round duct connection is desired

FEATURES

- 22 gauge galvanized steel casing construction
- Round inlet and outlet sizes ranging from 4" to 16" diameter; slightly undersized to fit standard spiral and flex duct
- Four quadrant center averaging airflow sensor
- Cast position indicator on damper shaft for easy monitoring of damper position
- Delrin® damper bearings are self-lubricating; unaffected by temperature and humidity

CONTROLS

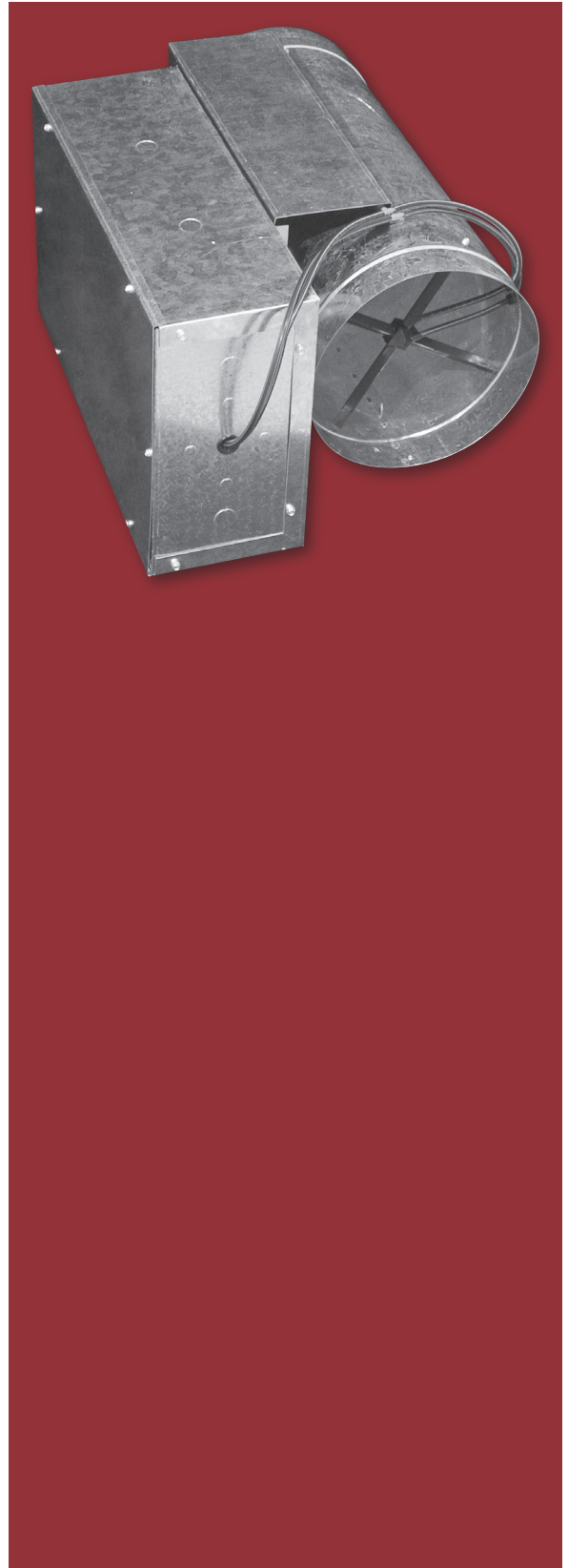
- Pneumatic Controls – Pressure independent, factory supplied, factory mounted, factory set airflows
- Analog Controls – Pressure independent, factory supplied and mounted
- DDC Controls – Variety of wiring and mounting configurations, factory mounted supplied by others

COMPATIBLE OPTIONS AND ACCESSORIES

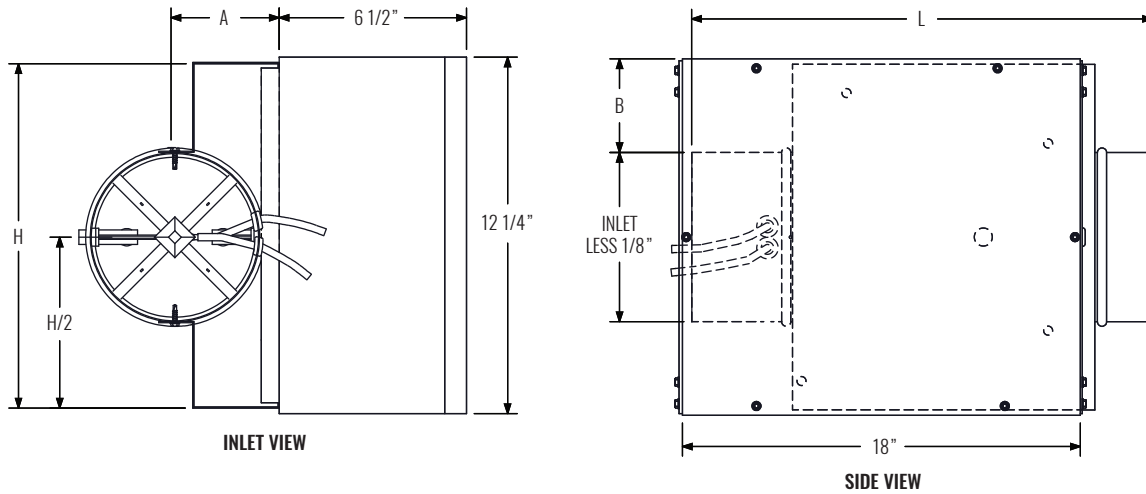
- 20 gauge galvanized steel casing construction
- Optional Stainless Steel Construction: Stainless steel construction is ideal for lab applications where the exhausted air contains corrosive materials that isn't suitable for contacting standard galvanized steel
 - Spot welded stainless steel duct casing
 - Linear averaging airflow sensor is stainless steel, if selected
 - Stainless steel damper shaft / damper blades
 - Brass damper shaft bearings
- Control enclosure
- Manual damper position lock for pressure dependent applications
- 24 VAC 50VA transformer
- Disconnect switch for digital controls
- Removable airflow sensor for cleaning and maintenance (4-quadrant center averaging sensor or linear averaging sensor)

CERTIFICATIONS

- ETL Listed - Adherence to UL 429 for units with factory provided transformers



DIMENSIONAL DATA



NOTES: Right-hand RVE with electronic control enclosure shown; left-hand is available. See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE				DIMENSIONS			
INLET	INLET AIRFLOW RANGE (CFM)	MIN P _s @ MAX AIRFLOW ("WG)	NOMINAL AIRFLOW (CFM)	RADIATED / DISCHARGE NC	A	B	H	L
4"	40 - 230	0.24	150	<20 / <20	3 9/16"	4 3/16"	12"	18"
5"	62 - 360	0.26	250	20 / <20	3 9/16"	3 11/16"	12"	18"
6"	90 - 515	0.24	400	24 / 20	3 9/16"	3 3/16"	12"	16"
7"	121 - 700	0.25	550	25 / 20	4 1/16"	2 11/16"	12"	16"
8"	160 - 920	0.26	700	27 / 25	4 9/16"	2 3/16"	12"	16"
9"	201 - 1160	0.26	900	27 / 24	5 1/16"	1 11/16"	12"	20"
10"	250 - 1425	0.25	1100	28 / 23	5 9/16"	1 3/16"	12"	20"
12"	360 - 2060	0.25	1600	31 / 27	6 9/16"	3/16"	12"	20"
14"	480 - 2800	0.26	2100	31 / 30	7 9/16"	N/A	14"	24"
16"	630 - 3660	0.25	2800	34 / 32	8 9/16"	N/A	16"	24"

NOTES: Information shown is abbreviated. See website for complete information. Min P_s is the pressure drop across the unit. Discharge sound power is the sound emitted from the unit discharge. Radiated sound power is the sound transmitted through the casing walls. All sound data is based on tests conducted in accordance with AHRI 880-11. NC application data is based on Sound Power levels (dB, re 10⁻¹² Watts) applied to AHRI Standard 885-08 Appendix E, as a function of flow rate shown. All data points listed are application ratings outside the scope of the Certification Program.

MODEL

- KMS - Krueger Measure Station

APPLICATION

- Designed to accurately measure airflow with a linear or 4-quadrant multipoint differential pressure sensor
- Install the KMS in any round duct work upstream of existing pressure dependent units to provide a means of flow measurement

FEATURES

- Round duct sizes 4" to 16" available
- Standard 22 gauge galvanized steel construction
- Optional 20 gauge galvanized steel construction
- Optional stainless steel construction
- Standard K4 LineaCross 4-quadrant, multipoint center averaging sensor, offers low resistance to airflow while providing an amplified velocity pressure signal
- Optional linear, multipoint averaging velocity sensor

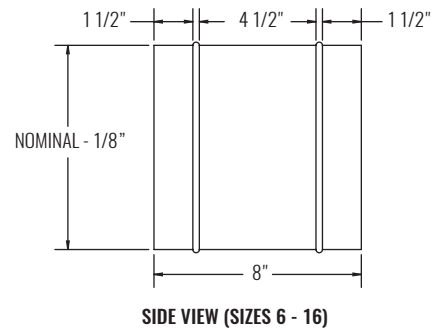
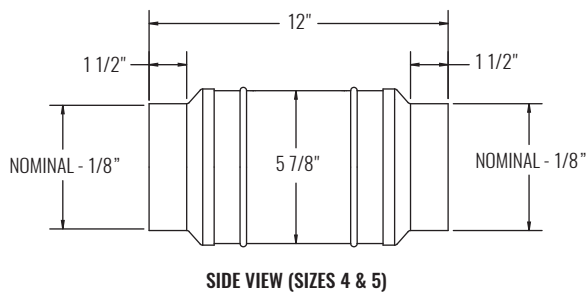
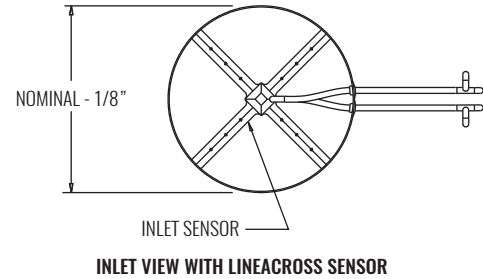
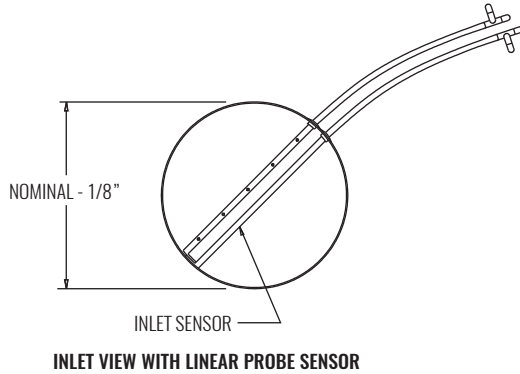


TERMINAL UNITS

KMS



DIMENSIONAL DATA



PERFORMANCE DATA

SIZE	PERFORMANCE
INLET	INLET AIRFLOW RANGE (CFM)
4"	40 - 230
5"	62 - 360
6"	89 - 520
7"	121 - 700
8"	159 - 920
9"	201 - 1160
10"	248 - 1430
12"	357 - 2060
14"	486 - 2800
16"	634 - 3660

NOTES: Information shown is abbreviated. See website for complete information. Minimum CFM value is based on a signal of 0.03" WG differential pressure of the inlet sensor. Minimum may be 0. Maximum CFM value is based on a signal of 1.0" WG differential pressure of the inlet sensor.

MODEL

- KLB - Bypass terminal unit

APPLICATION

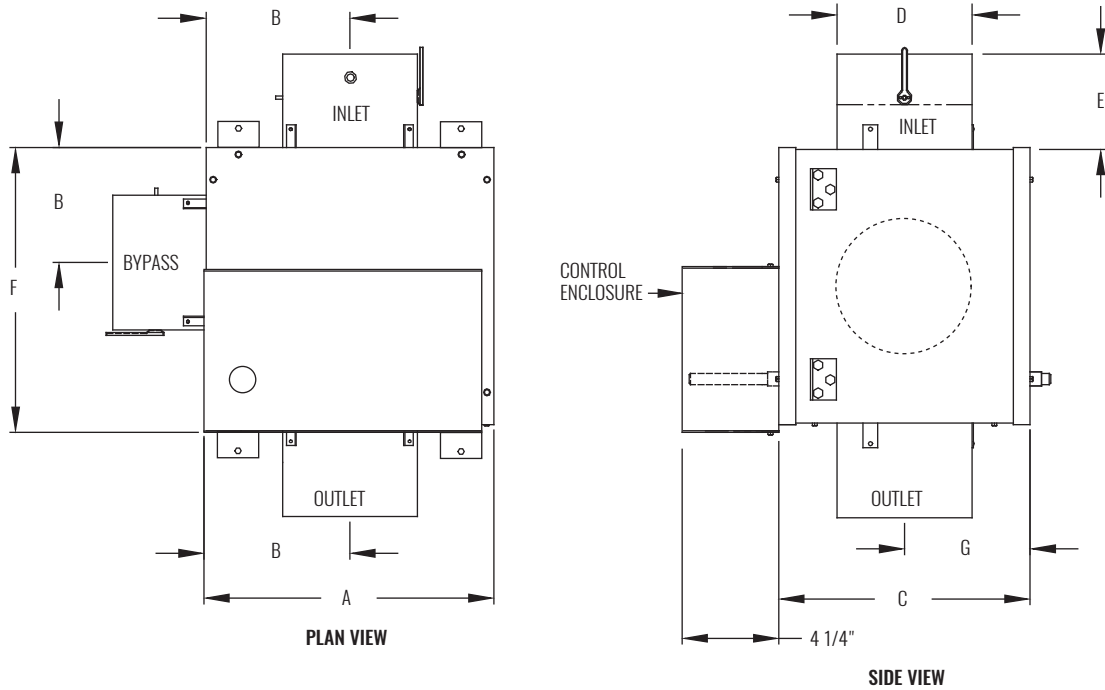
- Designed to maintain occupant comfort by varying the amount of cold air from the constant volume air handler and bypassing the excess cooling air back to the air handler
- Allows the air handler to operate at constant volume, while individual zones benefit from increased control of comfort levels
- Resulted Savings
 - Eliminates the need for variable speed drives on the AHU fan(s)
 - Lower return air temperature allows the air handler to operate more efficiently at reduced cooling demand

FEATURES

- 20 gauge galvanized steel casing construction
- Round inlet, outlet, and bypass collars to accommodate standard flex duct sizes
- Optional manual dampers are available on inlet, bypass, and outlet connections
- 1/2" thick, 1 1/2 lb. dual density, fiberglass insulation that meets UL 181 and NFPA 90A requirements
- Pressure dependent pneumatic and electric control types are available
- A "no control" unit is also available for field mounting of controls
- Optional hanger brackets
- Optional factory supplied and wired 24 volt control transformer



DIMENSIONAL DATA



NOTES: (D) dimension is diameter of inlet, bypass, and outlet connections. Unit may be job site rotated 180° to have controls located on the bottom of the unit. See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE		DIMENSIONS						
	INLET	MAX CFM ¹	NOMINAL CFM	A	B	C	D	E	F
6"	500	400	12 7/8"	7 1/8"	11 1/8"	5 7/8"	4 1/4"	12 3/8"	5 9/16"
8"	900	700	12 7/8"	7 1/8"	11 1/8"	7 7/8"	5 1/4"	12 3/8"	5 9/16"
10"	1300	1000	14 7/8"	8 1/8"	13 1/8"	9 7/8"	6 1/4"	14 3/8"	6 9/16"
12"	2000	1600	18 7/8"	10 1/8"	17 1/8"	11 7/8"	7 1/4"	18 3/8"	8 9/16"
14"	2500	2000	18 7/8"	10 1/8"	17 1/8"	13 7/8"	8 1/4"	18 3/8"	8 9/16"
16"	3600	2700	22 7/8"	12 1/8"	21 1/8"	15 7/8"	9 1/4"	22 3/8"	10 9/16"
18"	4400	3200	22 7/8"	12 1/8"	21 1/8"	17 7/8"	10 1/4"	22 3/8"	10 9/16"

NOTES: Information shown is abbreviated. See website for complete information.

¹ Max CFM value is based on a inlet velocity not to exceed 2625 FPM.

MODEL

- KHFE - Horizontal standard fan coil unit, exposed cabinet

FEATURES

- Galvanized steel construction
- Durable powder coat paint
- 1/2" thick fiberglass, foil faced, or cellular insulation
- 1 1/2" duct discharge collar
- Four point hanger mounting brackets
- 1" throwaway or pleated filters (MERV 8)
- Double deflection discharge grille
- Stamped louver supply and return air grilles
- Ducted supply and/or return
- 18 gauge bottom panel construction

COILS

- Cooling - chilled water (3, 4, or 5 rows) or DX (3 or 4 rows)
- Heating - hot water (1 or 2 row), reheat or preheat position
- 6 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" or .025" tube wall thickness)
- Stainless steel coil casing (optional)
- High efficiency aluminum fin surface
- Left or right hand, same or opposite side connections
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Removable, field reversible
- Condensate overflow switch (optional)
- Auxiliary drain pan galvanized or stainless steel (optional)
- 7/8" O.D. primary drain connection (3/4" MPT for stainless steel pan)
- 5/8" O.D. secondary drain connection (3/8" MPT for stainless steel pan)

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 & 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 & 277V, 1-phase EC motors
- Quick disconnect motor connections
- Removable fan/motor deck for service



ELECTRICAL

- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit and remote mounted three speed fan switches (optional)
- Bottom hinged electrical enclosure (optional)
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle or door interlocking (optional)
- Electric reheat available
- Silent electric heat relays and fan relay (optional)

PIPING PACKAGES

- Factory assembled, shipped loose for field installation
- 1/2" and 3/4" piping size
- 2-way and 3-way 2-position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Remote mounted analog, digital display or programmable thermostats

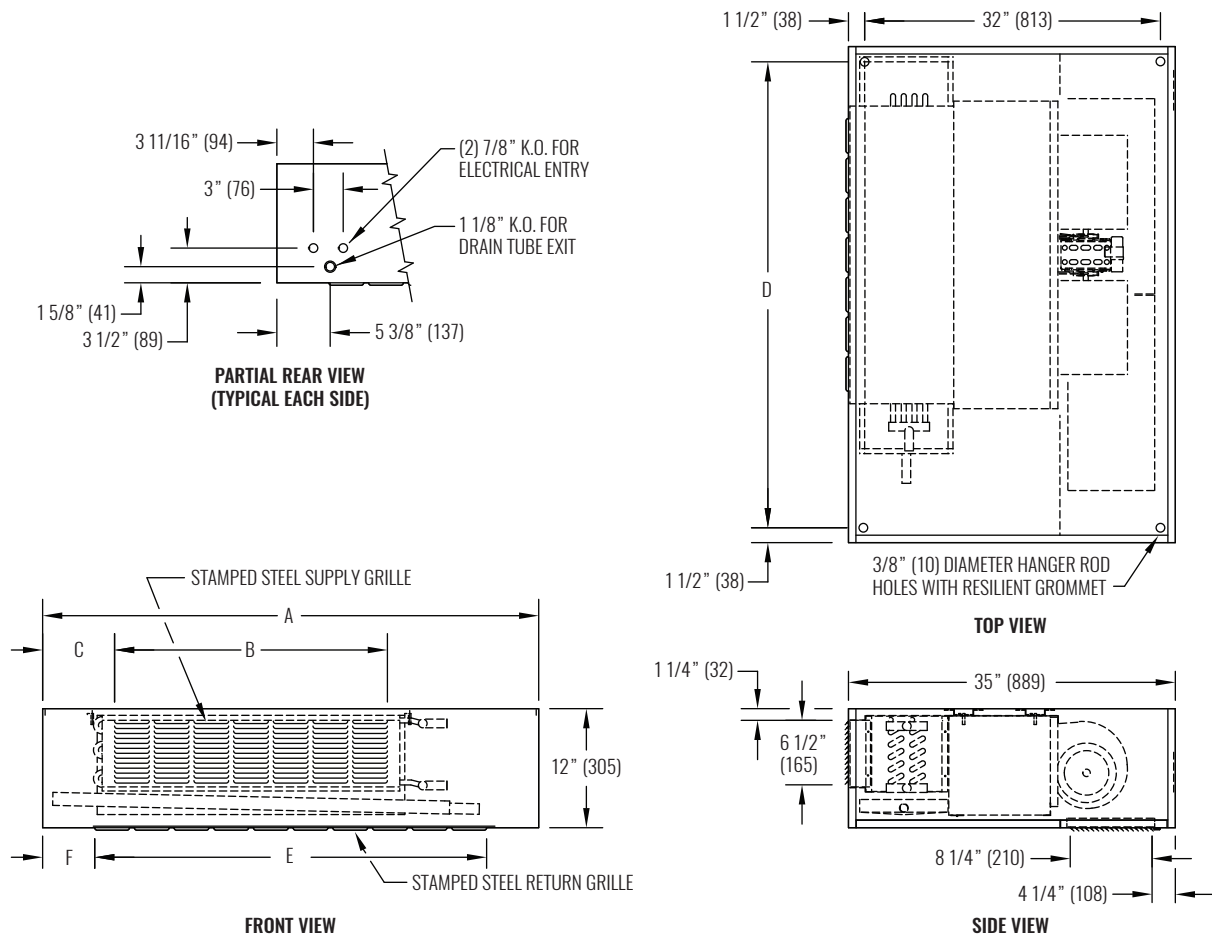
CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data

WEB SEARCH: KHFE



DIMENSIONAL DATA



NOTE: Front stamped supply grille and bottom stamped return grille is shown. Other configurations are available. Left hand coil connection shown, right hand is available. Provide access clearance for electrical enclosure per local and national electrical code requirements. Dimensions in parentheses are in millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS					
	UNIT	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A	B	C	D	E
20	238 - 253	5 - 8	12 - 20	40" (1016)	19 1/2" (495)	6 1/4" (159)	37" (940)	27 1/2" (699)	6 1/4" (159)
25	385 - 403	9 - 10	18 - 30	46" (1168)	23 1/2" (597)	6 1/4" (159)	43" (1092)	35 1/2" (902)	5 1/4" (133)
30	556 - 604	10 - 14	23 - 40	50" (1270)	27 1/2" (699)	7 1/4" (184)	47" (1194)	39 1/2" (1003)	5 1/4" (133)
40	702 - 743	15 - 21	29 - 30	60" (1524)	39 1/2" (1003)	6 1/4" (159)	57" (1448)	47 1/2" (1207)	6 1/4" (159)
50	1011 - 1103	19 - 29	39 - 69	70" (1778)	47 1/2" (1207)	7 1/4" (184)	67" (1702)	59 1/2" (1511)	5 1/4" (133)
60	1230 - 1355	21 - 33	48 - 85	80" (2032)	59 1/2" (1511)	6 1/4" (159)	77" (1956)	67 1/2" (1715)	6 1/4" (159)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KHFH - Horizontal standard fan coil unit, concealed ceiling

FEATURES

- Galvanized steel construction
- 1 1/2" duct discharge collar
- Four point hanger mounting brackets
- 1/2" thick fiberglass, foil faced, or cellular insulation
- Solid ceiling access panels (optional)

COILS

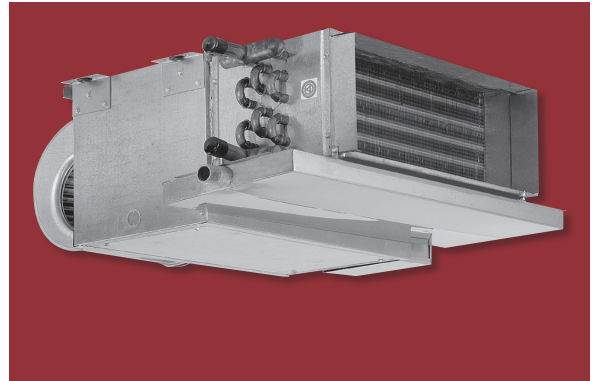
- Cooling - chilled water (3, 4, or 5 rows) or DX (3 or 4 rows)
- Heating - hot water (1 or 2 row), reheat or preheat position
- 6 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" or 0.025 tube wall thickness)
- Stainless steel coil casing (optional)
- High efficiency aluminum fin surface
- Left or right hand, same or opposite side connections
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Removable, field reversible
- Condensate overflow switch (optional)
- Auxiliary drain pan, galvanized or stainless steel (optional)
- 7/8" O.D. primary drain connection (3/4" MPT for stainless steel pan)
- 5/8" O.D. secondary drain connection (3/8" MPT for stainless steel pan)

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 & 277V, 1-phase, 3-speed PSC motors
- Quick disconnect motor connections
- Removable fan/motor deck for service



ELECTRICAL

- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit and remote mounted three speed fan switches (optional)
- Bottom hinged electrical enclosure (optional)
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle or door interlocking (optional)
- Electric reheat available
- Silent electric heat relays and fan relay (optional)

PIPING PACKAGES

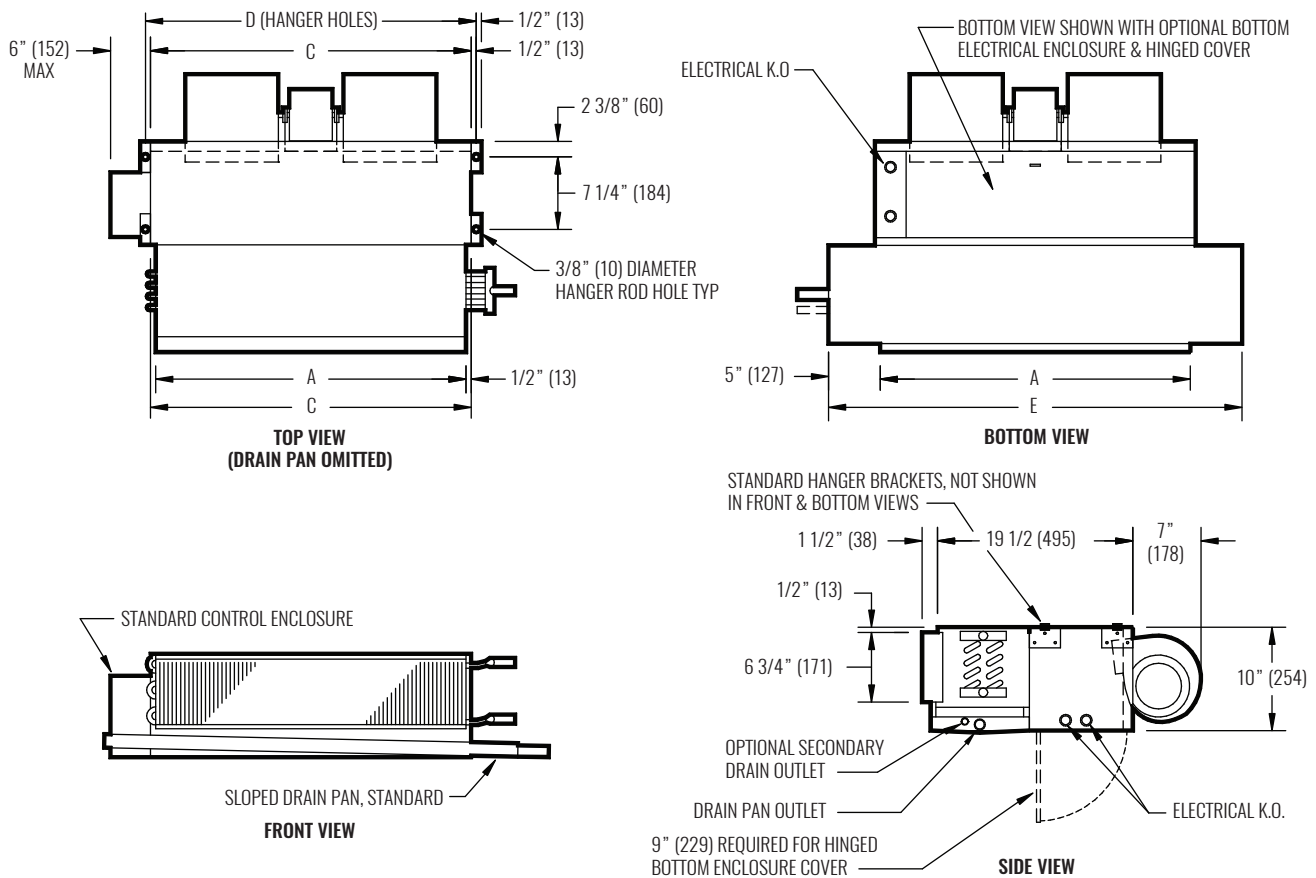
- Factory assembled, shipped loose for field installation
- 1/2" and 3/4" piping size
- 2-way and 3-way 2 position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Remote mounted analog, digital display or programmable thermostats

CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data



DIMENSIONAL DATA



NOTE: Left hand coil shown, right hand is available. Provide access clearance for electrical enclosure per local and national electrical code requirements. Dimensions in parentheses are in millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS			
UNIT SIZE	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A	C	D	E
20	291 - 313	6 - 8	14 - 23	20" (508)	21" (533)	22" (559)	30" (762)
25	423 - 441	9 - 11	19 - 32	26" (660)	27" (686)	28" (711)	36" (914)
30	643 - 694	12 - 16	25 - 45	30" (762)	31" (787)	32" (813)	40" (1016)
40	752 - 796	15 - 22	30 - 31	40" (1016)	41" (1041)	42" (1067)	50" (1270)
50	1148 - 1181	20 - 32	42 - 73	50" (1270)	51" (1295)	52" (1321)	60" (1524)
60	1385 - 1437	23 - 36	51 - 90	60" (1524)	61" (1549)	62" (1575)	70" (1778)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KHFP - Horizontal standard fan coil unit, concealed with plenum

FEATURES

- Galvanized steel construction
- 1/2" thick fiberglass, foil faced, or cellular insulation
- 1 1/2" duct discharge collar
- Four point hanger mounting brackets
- Integral filter rack with 1" throwaway or MERV8 filter
- Integral rear ducted return, field reversible to bottom return
- Bottom return (optional)
- Telescoping bottom panels (optional)

COILS

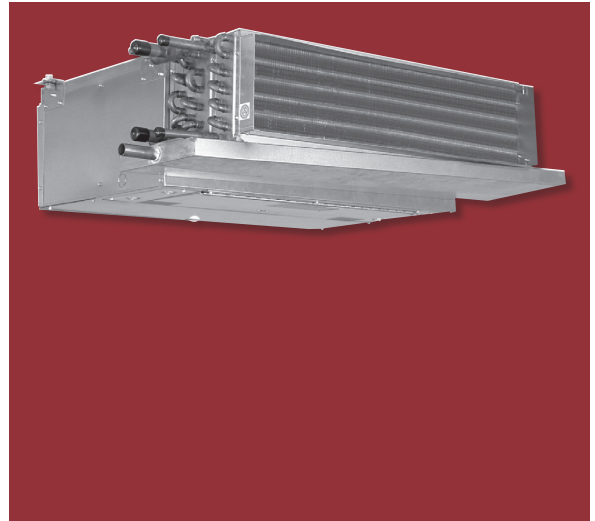
- Cooling - chilled water (3, 4, or 5 rows) or DX (3 or 4 rows)
- Heating - hot water (1 or 2 row), reheat or preheat position
- 6 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" or 0.025 tube wall thickness)
- Stainless steel coil casing (optional)
- High efficiency aluminum fin surface
- Left or right hand, same or opposite side connections
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Removable, field reversible
- Condensate overflow switch (optional)
- Auxiliary drain pan, galvanized or stainless steel (optional)
- 7/8" O.D. primary drain connection (3/4" MPT for stainless steel pan)
- 5/8" O.D. secondary drain connection (3/8" MPT for stainless steel pan)

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 & 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 & 277V, 1-phase EC motors
- Quick disconnect motor connections
- Removable fan/motor deck for service



ELECTRICAL

- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit and remote mounted three speed fan switches (optional)
- Bottom hinged electrical enclosure (optional)
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle or door interlocking (optional)
- Electric reheat available
- Silent electric heat relays and fan relay (optional)

PIPING PACKAGES

- Factory assembled, shipped loose for field installation
- 1/2" and 3/4" piping size
- 2-way and 3-way 2 position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Remote mounted analog, digital display or programmable thermostats

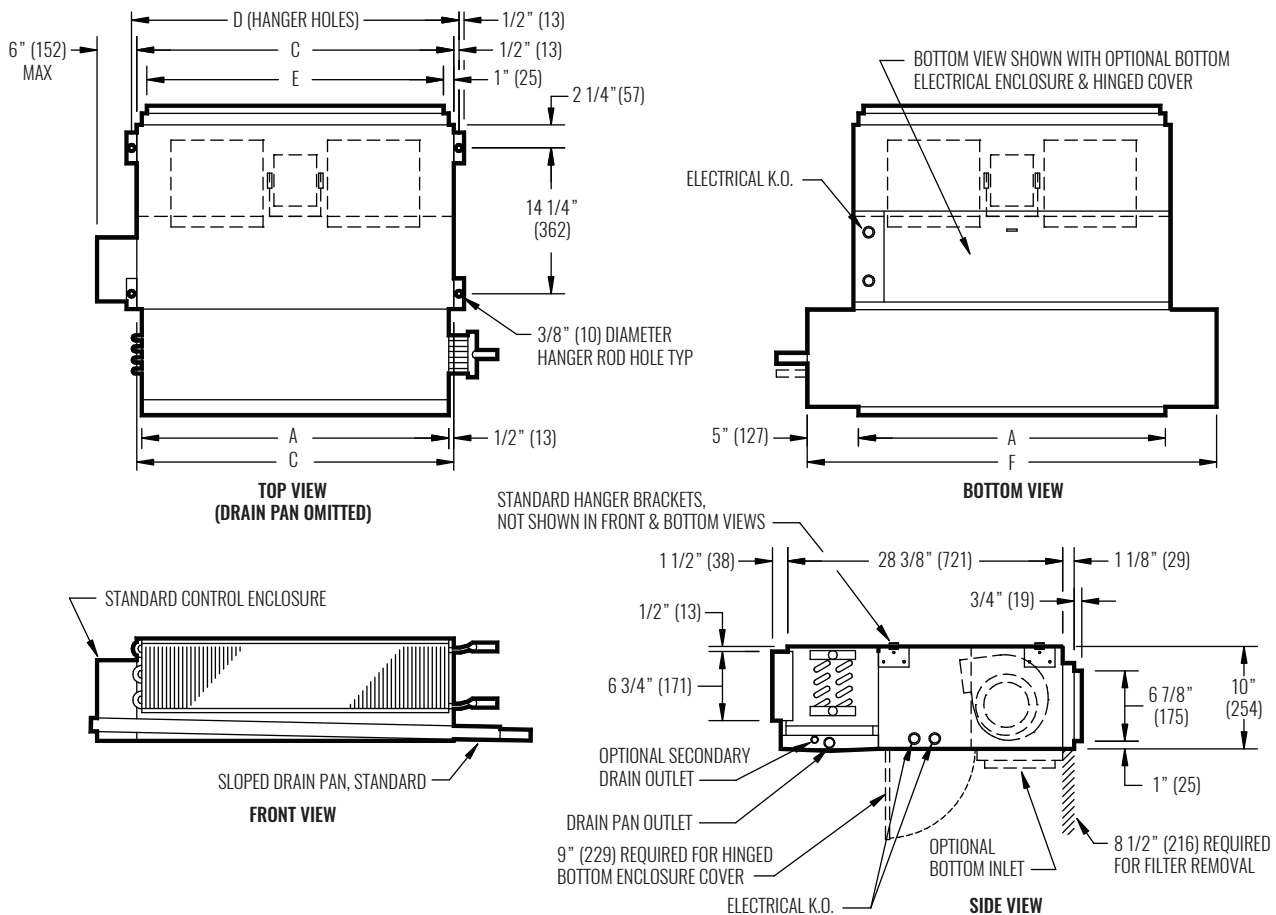
CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data

WEB SEARCH: KHFP



DIMENSIONAL DATA



NOTE: Left hand coil shown, right hand is available. Provide access clearance for electrical enclosure per local and national electrical code requirements. Dimensions in parentheses are in millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS				
	UNIT	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A	C	D	E
20	249 - 269	5 - 8	13 - 21	20" (508)	21" (533)	22" (559)	19" (483)	30" (762)
25	385 - 403	9 - 10	18 - 30	26" (660)	27" (686)	28" (711)	25" (635)	36" (914)
30	556 - 604	10 - 14	23 - 40	30" (762)	31" (787)	32" (813)	29" (737)	40" (1016)
40	702 - 743	15 - 21	29 - 30	40" (1016)	41" (1041)	42" (1067)	39" (991)	50" (1270)
50	1011 - 1103	19 - 29	39 - 69	50" (1270)	51" (1295)	52" (1321)	49" (1245)	60" (1524)
60	1230 - 1355	21 - 33	48 - 85	60" (1524)	61" (1549)	62" (1575)	59" (1499)	70" (1778)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KHGE - Horizontal high performance fan coil unit, exposed cabinet

FEATURES

- Galvanized steel construction
- 1/2" thick fiberglass, foil faced, cellular insulation
- 1 1/2" duct discharge collar
- Four point hanger mounting brackets
- Integral filter rack with 1" throwaway or MERV8 filter
- Bottom or rear return (optional)

COILS

- Cooling - chilled water or DX (3, 4, or 6 rows)
- Heating - hot water reheat or preheat position (1, 2, 3, or 4 rows)
- 8 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" or 0.025" tube wall thickness)
- Stainless steel coil casing (optional)
- High efficiency aluminum fin surface
- Left or right hand coil connections
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Removable, field reversible
- Condensate overflow switch (optional)
- Auxiliary drain pan galvanized or stainless steel (optional)
- 7/8" O.D. primary drain connection (3/4" MPT for stainless steel pan)
- 5/8" O.D. secondary drain connection (1/2" MPT for stainless steel pan)

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 & 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 & 277V, 1-phase EC motors
- Quick disconnect motor connections
- Removable fan/motor deck for service



ELECTRICAL

- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit and remote mounted three speed fan switches (optional)
- Electric reheat available
- Side-hinged electrical enclosure
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle, or door interlocking (optional)
- Silent electric heat relays and fan relay (optional)

PIPING PACKAGES

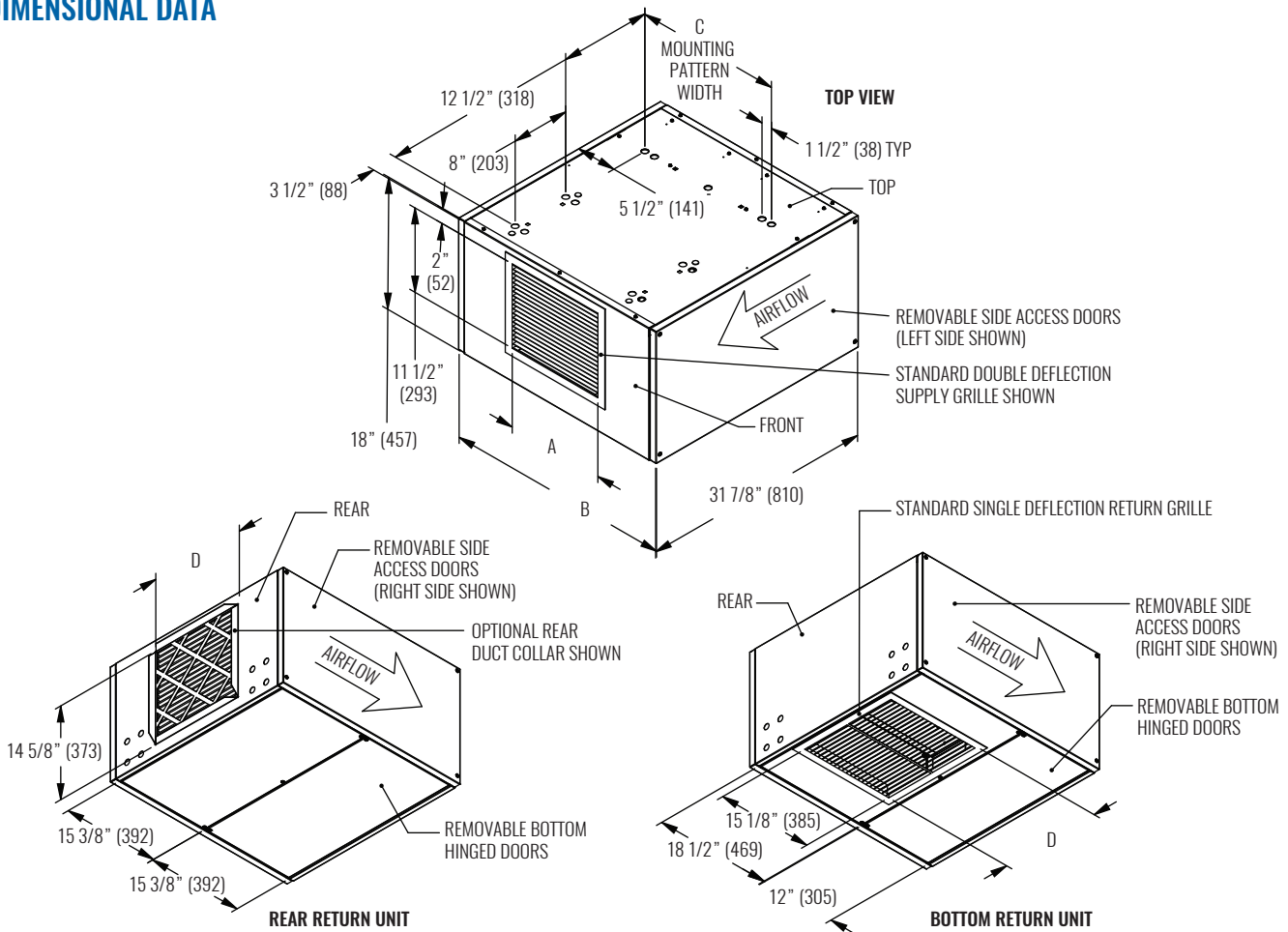
- Factory assembled, shipped loose for field installation
- 1/2", 3/4", and 1" piping size
- 2-way and 3-way 2 position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Remote mounted analog, digital display or programmable thermostats

CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data



DIMENSIONAL DATA



NOTE: Provide access clearance for electrical enclosure per local and national electrical code requirements. Dimensions in parentheses are in millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS			
UNIT SIZE	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A	B	C	D
06	553 - 627	9 - 15	18 - 42	13 1/2" (343)	31 1/4" (794)	20" (508)	15 1/2" (394)
08	693 - 795	14 - 21	25 - 54	18 1/2" (470)	36 1/4" (921)	25" (635)	19 1/2" (495)
10	797 - 909	17 - 25	29 - 64	22 1/2" (572)	40 1/4" (1022)	29" (737)	24 1/2" (622)
12	1108 - 1265	21 - 33	38 - 87	27 1/2" (699)	45 1/4" (1149)	34" (864)	31 1/2" (800)
14	1390 - 1551	25 - 39	46 - 102	32 1/2" (826)	50 1/4" (1276)	39" (991)	35 1/2" (902)
16	1569 - 1752	29 - 46	53 - 150	37 1/2" (953)	55 1/4" (1403)	44" (1118)	39 1/2" (1003)
18	1665 - 1862	31 - 47	58 - 126	42 1/2" (1080)	60 1/4" (1530)	49" (1245)	44 1/2" (1130)
20	1758 - 1957	35 - 52	69 - 125	46 1/2" (1181)	64 1/4" (1632)	53" (1346)	49 1/2" (1257)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KHGH - Horizontal high performance fan coil unit, concealed ceiling

FEATURES

- Galvanized steel construction
- 1/2" thick fiberglass, foil faced, cellular insulation
- 1 1/2" duct discharge collar
- Four point hanger mounting brackets
- Integral filter rack with 1" throwaway or MERV8 filter
- Solid ceiling access panels (optional)

COILS

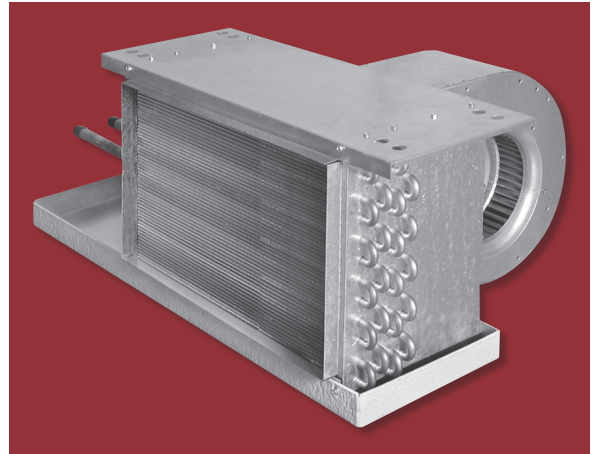
- Cooling - chilled water (3, 4, or 6 rows) or DX (3, 4, or 6 rows)
- Heating - hot water (1, 2, 3, or 4 rows), reheat or preheat position
- 4 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" or 0.025" tube wall thickness)
- Stainless steel coil casing (optional)
- High efficiency aluminum fin surface
- Left or right hand, same or opposite side connections
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Removable, field reversible
- Condensate overflow switch (optional)
- 7/8" O.D. primary drain connection
- 5/8" O.D. secondary drain connection (1/2" MPT for stainless steel)

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 & 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 & 277V, 1-phase, EC motors
- Quick disconnect motor connections
- Removable fan/motor deck for service



ELECTRICAL

- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit and remote mounted 3-speed fan switches (optional)
- Electric reheat available
- Side-hinged electrical enclosure
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle, or door interlocking (optional)
- Silent electric heat relays and fan relay (optional)
- Electric reheat available

PIPING PACKAGES

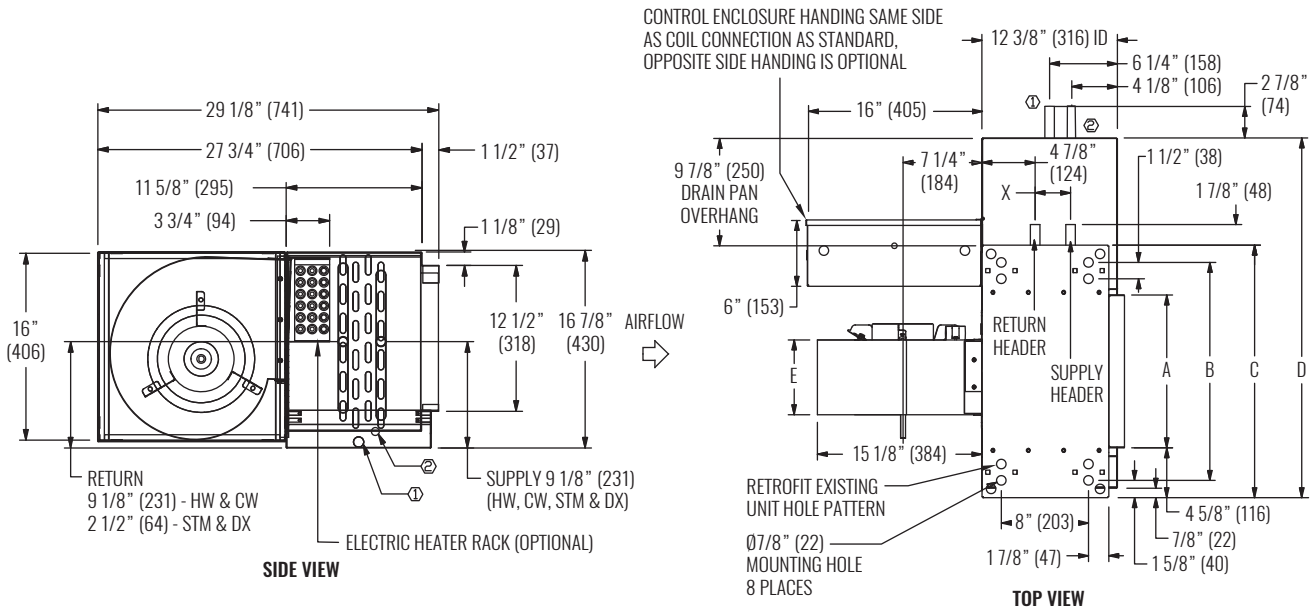
- Factory assembled, shipped loose for field installation
- 1/2", 3/4", or 1" piping size
- 2-way and 3-way 2 position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control
- Unions and P/T ports
- Remote mounted analog, digital display or programmable thermostats

CERTIFICATIONS

- cETL Listed - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data



DIMENSIONAL DATA



NOTE: Left hand coil shown, right hand is available. Provide access clearance for electrical enclosure per local and national electrical code requirements. Dimensions in parentheses are in millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS					
	UNIT	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	FAN QUANTITY	A	B	C	D
06	553 - 689	9 - 17	18 - 46	1	14" (356)	20" (508)	23 1/8" (587)	34" (864)	6 7/8" (175)
08	701 - 865	14 - 24	25 - 60	1	19" (483)	25" (635)	28 1/8" (714)	39" (991)	8 1/4" (210)
10	888 - 1085	18 - 31	31 - 74	1	23" (584)	29" (737)	32 1/8" (816)	43" (1092)	8 1/4" (210)
12	1195 - 1381	22 - 36	39 - 96	2	28" (711)	34" (864)	37 1/8" (943)	48" (1219)	6 7/8" (175)
14	1778 - 2035	29 - 46	50 - 118	2	33" (838)	39" (991)	42 1/8" (1070)	53" (1346)	8 1/4" (210)
16	1982 - 2222	34 - 55	58 - 133	2	38" (965)	44" (1118)	47 1/8" (1197)	58" (1473)	8 1/4" (210)
18	2117 - 2338	36 - 57	64 - 146	2	43" (1092)	49" (1245)	52 1/8" (1324)	63" (1600)	8 1/4" (210)
20	2244 - 2474	41 - 63	77 - 143	2	47" (1194)	53" (1346)	56 1/8" (1426)	67" (1702)	8 1/4" (210)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KHGP - Horizontal high performance fan coil unit, concealed with plenum

FEATURES

- Galvanized steel construction
- 1/2" thick fiberglass, foil faced, cellular insulation
- 1 1/2" duct discharge collar
- Four point hanger mounting brackets
- Integral filter rack with 1" throwaway or MERV8 filter
- Integral rear ducted return, field reversible to bottom return
- Bottom return (optional)
- Telescoping bottom panels (optional)

COILS

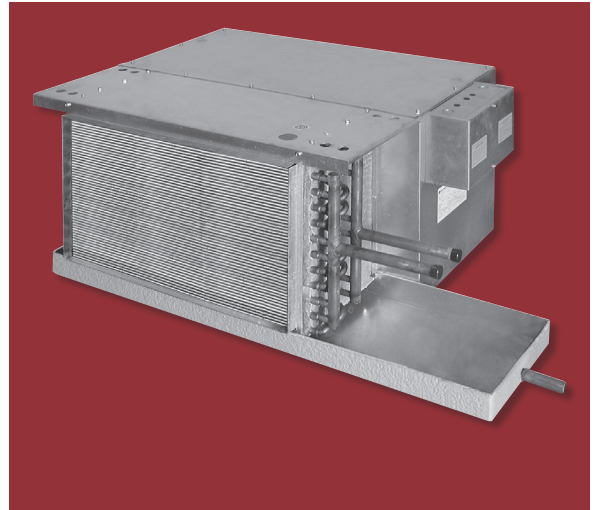
- Cooling - chilled water (3, 4, or 6 rows) or DX (3, 4, or 6 rows)
- Heating - hot water (1, 2, 3, or 4 rows), reheat or preheat position
- 8 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" or 0.025" tube wall thickness)
- Stainless steel coil casing (optional)
- High efficiency aluminum fin surface
- Left or right hand, same or opposite side connections
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Removable, field reversible
- Condensate overflow switch (optional)
- 7/8" O.D. primary drain connection
- 5/8" O.D. secondary drain connection (1/2" MPT for stainless steel)

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 & 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 & 277V, 1-phase EC motors
- Quick disconnect motor connections
- Removable fan/motor deck for service



ELECTRICAL

- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit and remote mounted three speed fan switches (optional)
- Electric reheat available
- Side-hinged electrical enclosure
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle, or door interlocking (optional)
- Silent electric heat relays and fan relay (optional)
- Electric reheat available

PIPING PACKAGES

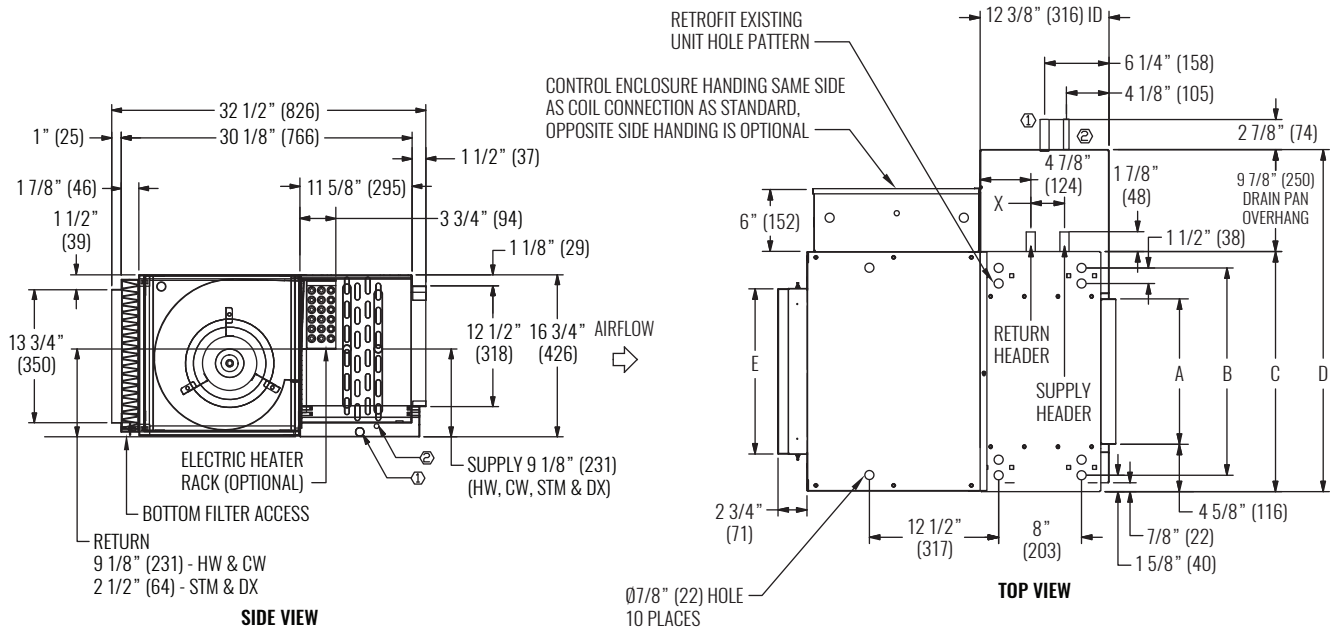
- Factory assembled, shipped loose for field installation
- 1/2", 3/4", or 1" piping size
- 2-way and 3-way 2 position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control
- Unions and P/T ports
- Remote mounted analog, digital display or programmable thermostats

CERTIFICATIONS

- cETL Listed - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references. The mixing box is field reversible from bottom to top and rear return. It is recommended to provide 3' access on pipe connection side. Provide access clearance for electrical enclosure per local and national electrical code requirements. Mixing box side panels are removable for access to the linkage / actuator.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS			
	UNIT SIZE	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A	B	C
06	569 - 707	10 - 15	19 - 44	23 1/8" (587)	20" (508)	12 5/8" (321)	14" (356)
08	763 - 999	15 - 23	26 - 60	28 1/8" (714)	25" (635)	16 5/8" (422)	19" (483)
10	851 - 1055	19 - 28	31 - 69	32 1/8" (816)	29" (737)	20 5/8" (524)	23" (584)
12	1192 - 1501	23 - 35	40 - 94	37 1/8" (943)	34" (864)	24 5/8" (625)	28" (711)
14	1485 - 1907	27 - 42	48 - 110	42 1/8" (1070)	39" (991)	28 5/8" (727)	33" (838)
16	1573 - 1933	29 - 47	53 - 151	47 1/8" (1197)	44" (1118)	32 5/8" (829)	38" (965)
18	1566 - 2015	31 - 47	57 - 127	52 1/8" (1324)	49" (1245)	36 5/8" (930)	43" (1092)
20	1696 - 2099	36 - 52	68 - 129	56 1/8" (1426)	53" (1346)	40 5/8" (1032)	47" (1194)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KVFF - Vertical standard fan coil unit, flat top cabinet

FEATURES

- Galvanized steel construction
- Cellular foam insulation
- Integral filter rack with 1" throwaway, MERV 8, or MERV 13 filter
- Top stamped louver or linear bar supply grille
- Standard or extended end pockets with removable panels
- Flat top
- 2" - 8" falsebacks for additional piping space (optional)
- Manual or motorized outside air damper (optional)
- Tamper proof fasteners (optional)
- Leveling legs (optional)
- Wall boxes (optional)
- Toe kick cover (optional)
- Parametric width and height is available

COILS

- Cooling - chilled water or DX (2, 3, or 4 rows)
- Heating - hot water reheat (1 or 2 rows)
- 4 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" tube wall thickness)
- Left or right hand, same or opposite end connections
- Galvanized or stainless steel coil casing
- High efficiency aluminum fin surface
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Easily removable for cleaning
- Condensate overflow switch (optional)
- 3/4" MPT auxiliary drain pan connection
- Double wall plastic auxiliary drip pan, standard or extended length

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 and 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 and 277V, 1-phase, 3-speed or 2-10VDC EC motors
- Quick disconnect motor connections
- Removable fan assembly for service



ELECTRICAL

- Fin tubular electric reheat available
- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit or remote mounted three speed fan switches (optional)
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle or door interlocking (optional)
- Silent electric heat relays and fan relay (optional)

PIPING PACKAGES

- Factory installed or shipped loose for field installation
- 1/2" piping size
- 2-way or 3-way, two position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Analog, digital display or programmable thermostats
- Unit or remote mounted thermostats

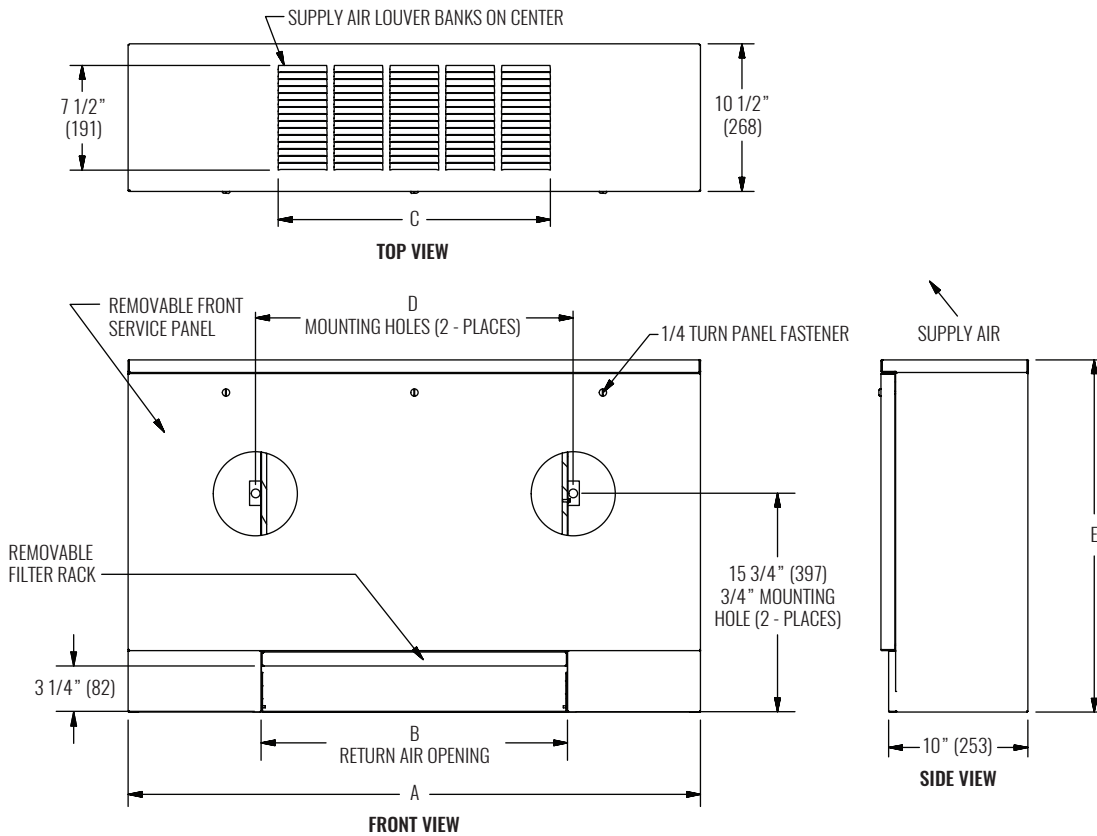
CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data

WEB SEARCH: KVFF



DIMENSIONAL DATA



NOTE: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references. A and E dimensions are selectable in 1" increments, internal chassis and air openings remain the same. Junction box size and location varies with unit features. Provide sufficient clearance to access electrical controls and comply with applicable codes and ordinances. Some control or piping package options may require extended end pockets and/or extended drain pans.

PERFORMANCE AND DIMENSIONAL DATA

SIZE		PERFORMANCE		DIMENSIONS				
UNIT	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A (RANGE)	B	C	D	E (RANGE)
02	216 - 221	4 - 5	9 - 16	40" (1016) - 53" (1346)	22" (559)	19 1/2" (495)	22 3/4" (578)	25 1/4" (641) - 37 1/4" (946)
03	282 - 284	3 - 5	12 - 21	44" (1117) - 57" (1448)	26" (660)	23 1/2" (597)	26 3/4" (679)	25 1/4" (641) - 37 1/4" (946)
04	393 - 408	3 - 8	16 - 29	50" (1270) - 63" (1600)	32" (813)	27 1/2" (699)	32 3/4" (832)	25 1/4" (641) - 37 1/4" (946)
06	507 - 524	9 - 10	20 - 37	60" (1524) - 73" (1854)	42" (1067)	39 1/2" (1003)	42 3/4" (1086)	25 1/4" (641) - 37 1/4" (946)
08	555 - 575	11 - 12	23 - 41	62" (1574) - 75" (1905)	44" (1118)	39 1/2" (1003)	44 3/4" (1137)	25 1/4" (641) - 37 1/4" (946)
10	737 - 761	12 - 17	32 - 55	76" (1930) - 89" (2261)	58" (1473)	55 1/2" (1410)	58 3/4" (1492)	25 1/4" (641) - 37 1/4" (946)
12	852 - 882	15 - 19	39 - 64	84" (2133) - 95" (2413)	66" (1676)	63 1/2" (1613)	66 3/4" (1695)	25 1/4" (641) - 37 1/4" (946)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KVFS - Vertical standard fan coil unit, slant top cabinet

FEATURES

- Slant top
- Galvanized steel construction
- Cellular foam insulation
- Integral filter rack with 1" throwaway, MERV 8, or MERV 13 filter
- Top stamped louver or linear bar supply grille
- Standard or extended end pockets with removable panels
- 2" - 8" falsebacks for additional piping space (optional)
- Manual or motorized outside air damper (optional)
- Tamper proof fasteners (optional)
- Leveling legs (optional)
- Wall boxes (optional)
- Toe kick cover (optional)
- Parametric width and height is available

COILS

- Cooling - chilled water or DX (2, 3, or 4 rows)
- Heating - hot water reheat(1 or 2 rows)
- 4 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" tube wall thickness)
- Left or right hand, same or opposite end connections
- Galvanized or stainless steel coil casing
- High efficiency aluminum fin surface
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated – fire retardant and antimicrobial
- Positively sloped to drain connection
- Easily removable for cleaning
- Condensate overflow switch (optional)
- 3/4" MPT auxiliary drain pan connection
- Double wall plastic auxiliary drip pan, standard or extended length

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 and 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 and 277V, 1-phase, 3-speed or 2-10VDC EC motors
- Quick disconnect motor connections
- Removable fan assembly for service



ELECTRICAL

- Fin tubular electric reheat available
- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit or remote mounted three speed fan switches (optional)
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle or door interlocking (optional)
- Silent electric heat relays and fan relay (optional)

PIPING PACKAGES

- Factory installed or shipped loose for field installation
- 1/2" piping size
- 2-way or 3-way, two position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Analog, digital display or programmable thermostats
- Unit or remote mounted thermostats

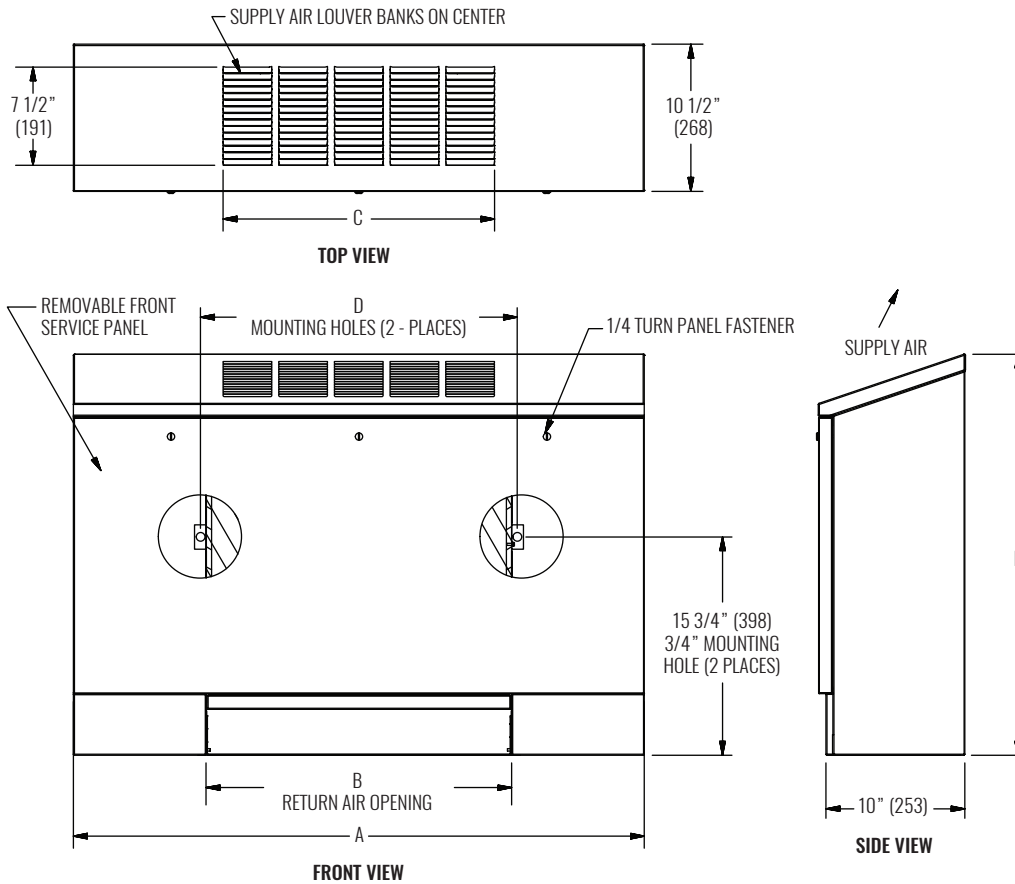
CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data

WEB SEARCH: KVFS



DIMENSIONAL DATA



NOTE: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references. A and E dimensions are selectable in 1" increments, internal chassis and air openings remain the same. Junction box size and location varies with unit features. Provide sufficient clearance to access electrical controls and comply with applicable codes and ordinances. Some control or piping package options may require extended end pockets and/or extended drain pans.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS				
	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A (RANGE)	B	C	D	E (RANGE)
02	216 - 221	4 - 5	9 - 16	40" (1016) - 53" (1346)	22" (559)	19 1/2" (495)	22 3/4" (578)	28 3/4" (730) - 40 3/4" (1035)
03	282 - 284	3 - 5	12 - 21	44" (1117) - 57" (1448)	26" (660)	23 1/2" (597)	26 3/4" (679)	28 3/4" (730) - 40 3/4" (1035)
04	393 - 408	3 - 8	16 - 28	50" (1270) - 63" (1600)	32" (813)	27 1/2" (699)	32 3/4" (832)	28 3/4" (730) - 40 3/4" (1035)
06	507 - 524	9 - 10	20 - 37	60" (1524) - 73" (1854)	42" (1067)	39 1/2" (1003)	42 3/4" (1086)	28 3/4" (730) - 40 3/4" (1035)
08	555 - 575	11 - 12	23 - 41	62" (1574) - 75" (1905)	44" (1118)	39 1/2" (1003)	44 3/4" (1137)	28 3/4" (730) - 40 3/4" (1035)
10	737 - 761	12 - 17	32 - 55	76" (1930) - 89" (2261)	58" (1473)	55 1/2" (1410)	58 3/4" (1492)	28 3/4" (730) - 40 3/4" (1035)
12	852 - 882	15 - 19	39 - 64	84" (2133) - 95" (2413)	66" (1676)	63 1/2" (1613)	66 3/4" (1695)	28 3/4" (730) - 40 3/4" (1035)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KVFH - Vertical standard fan coil unit, concealed

FEATURES

- Galvanized steel construction
- Cellular foam insulation
- Integral filter rack with 1" throwaway, MERV 8, or MERV 13 filter
- Recessed wall panels - with or without supply louver, standard or extended length (optional)
- Manual or motorized outside air damper (optional)
- Tamper proof fasteners (optional)
- Leveling legs (optional)
- Wall boxes (optional)

COILS

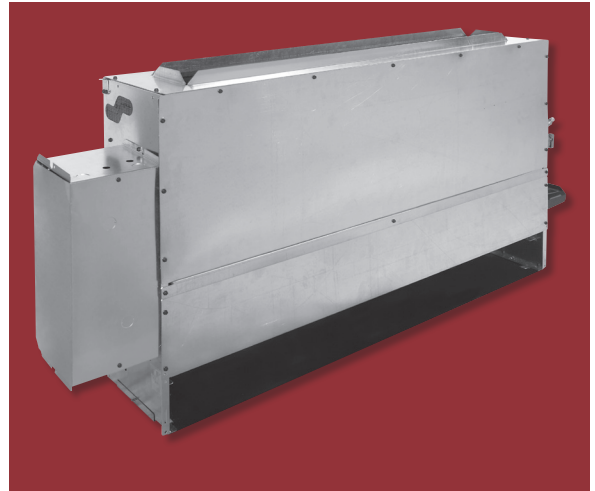
- Cooling - chilled water or DX (2, 3, or 4 rows)
- Heating - hot water reheat (1 or 2 rows)
- 4 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- 1/2" O.D. seamless copper tubes (0.016" tube wall thickness)
- Left or right hand, same or opposite end connections
- Galvanized or stainless steel coil casing
- High efficiency aluminum fin surface
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Easily removable for cleaning
- Condensate overflow switch (optional)
- 3/4" MPT auxiliary drain pan connection
- Double wall plastic auxiliary drip pan, standard or extended length

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 and 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 and 277V, 1-phase, 3-speed or 2-10VDC EC motors
- Quick disconnect motor connections
- Removable fan assembly for service



ELECTRICAL

- Fin tubular electric reheat available
- Electrical junction box for field wiring terminations
- Terminal block for field connections
- Unit or remote mounted three speed fan switches (optional)
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle or door interlocking (optional)
- Silent electric heat relays and fan relay (optional)

PIPING PACKAGES

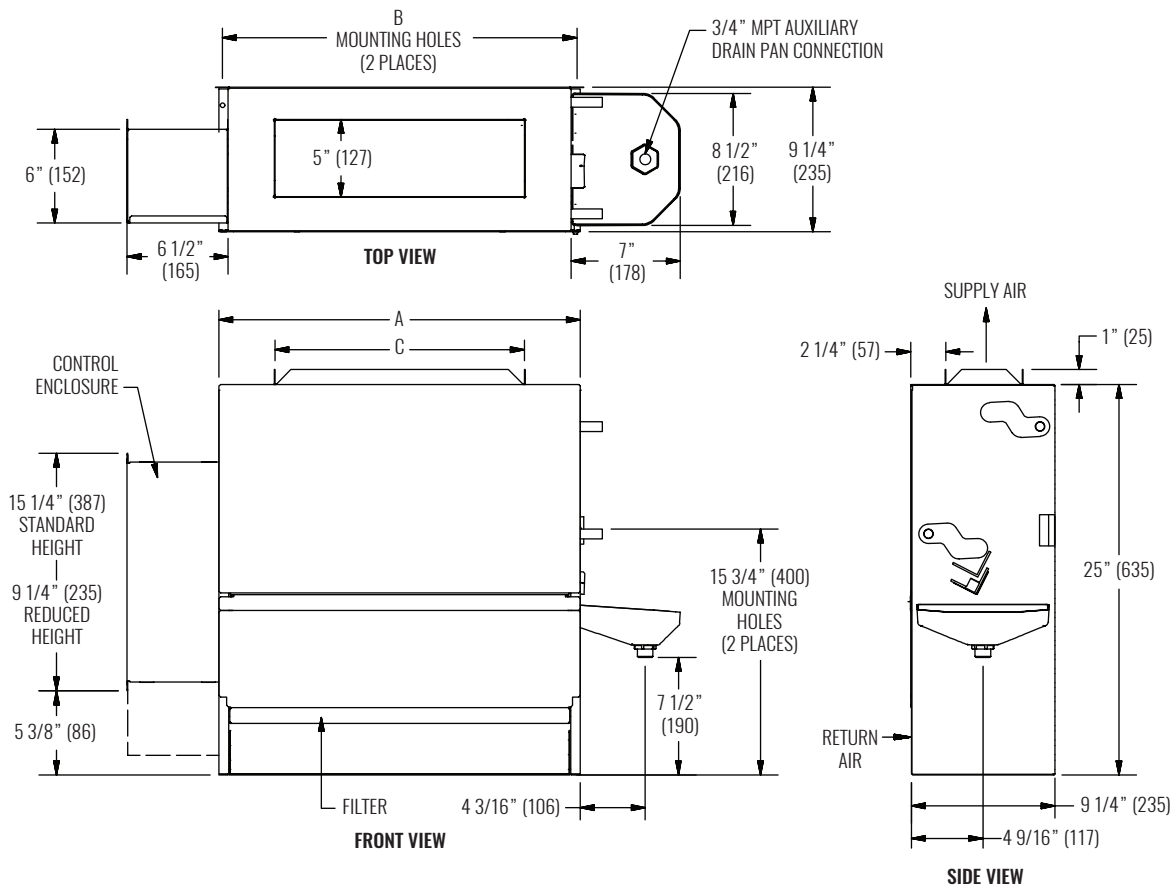
- Factory installed or shipped loose for field installation
- 1/2" piping size
- 2-way or 3-way, two position or floating point control valves
- Isolation ball valves with memory stop
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Remote mounted analog, digital display or programmable thermostats

CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data



DIMENSIONAL DATA



NOTE: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references. Right hand coil connection shown, left hand is available. Junction box size and location varies with unit features. Provide sufficient clearance to access electrical controls and comply with applicable codes and ordinances. Some control or piping package options may require extended drain pans.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS		
UNIT SIZE	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A	B	C
02	227 - 231	4 - 5	10 - 16	23 3/16" (589)	22 3/4" (578)	16" (406)
03	296 - 308	3 - 5	13 - 21	27 3/16" (691)	26 3/4" (679)	20" (508)
04	421 - 442	3 - 8	16 - 29	33 3/16" (843)	32 3/4" (832)	26" (660)
06	539 - 558	10 - 11	20 - 39	43 3/16" (1097)	42 3/4" (1086)	36" (914)
08	614 - 650	11 - 13	24 - 44	45 3/16" (1148)	44 3/4" (1137)	38" (965)
10	815 - 845	12 - 19	33 - 59	59 3/16" (1503)	58 3/4" (1492)	52" (1320)
12	842 - 893	15 - 18	39 - 63	67 3/16" (1707)	66 3/4" (1695)	60" (1524)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KVPE - Vertical stack fan coil unit, exposed cabinet

FEATURES

- Galvanized steel construction
- Durable powder coat paint
- 1/2" thick fiberglass, foil faced fiberglass, or cellular foam insulation
- Integral filter rack with 1" throwaway, synthetic media MERV 6, or pleated MERV8 filter
- Manual or motorized outside air damper (optional)
- Riser slot knockouts
- Single or double deflection discharge grille(s)

COILS

- Cooling - chilled water (3 or 4 rows)
- Heating - hot water reheat (1 or 2 rows)
- 5 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- Stainless steel coil casing (optional)
- High efficiency aluminum fin surface
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Easily removable for cleaning
- Condensate overflow switch (optional)
- 7/8" O.D. primary drain connection
- P-trap factory installed

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 and 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 and 277V, 1-phase, 3-speed EC motors
- Quick disconnect motor connections
- Removable fan/motor deck for service

ELECTRICAL

- Electric reheat available
- Electrical enclosure with access door for field wiring terminations
- Terminal block for field connections
- Unit and remote mounted three speed fan switches (optional)
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle, or door interlocking (optional)
- Silent electric heat relays and fan relay (optional)



PIPING PACKAGES

- Factory installed
- 1/2" piping size
- 2-way and 3-way 2 position or floating point control valves
- Isolation ball valves with memory stop
- Stainless steel braided hoses (threaded swivel connections)
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Analog, digital display or programmable thermostats with remote, unit or ADA mounting options

RISERS

- Type-M or L copper with swaged connections
- 3/4" to 3" diameters
- 1/2" and 3/4" closed cell insulation
- Type-M copper condensate riser
- Riser extensions
- Riser cover
- Ship in advance risers

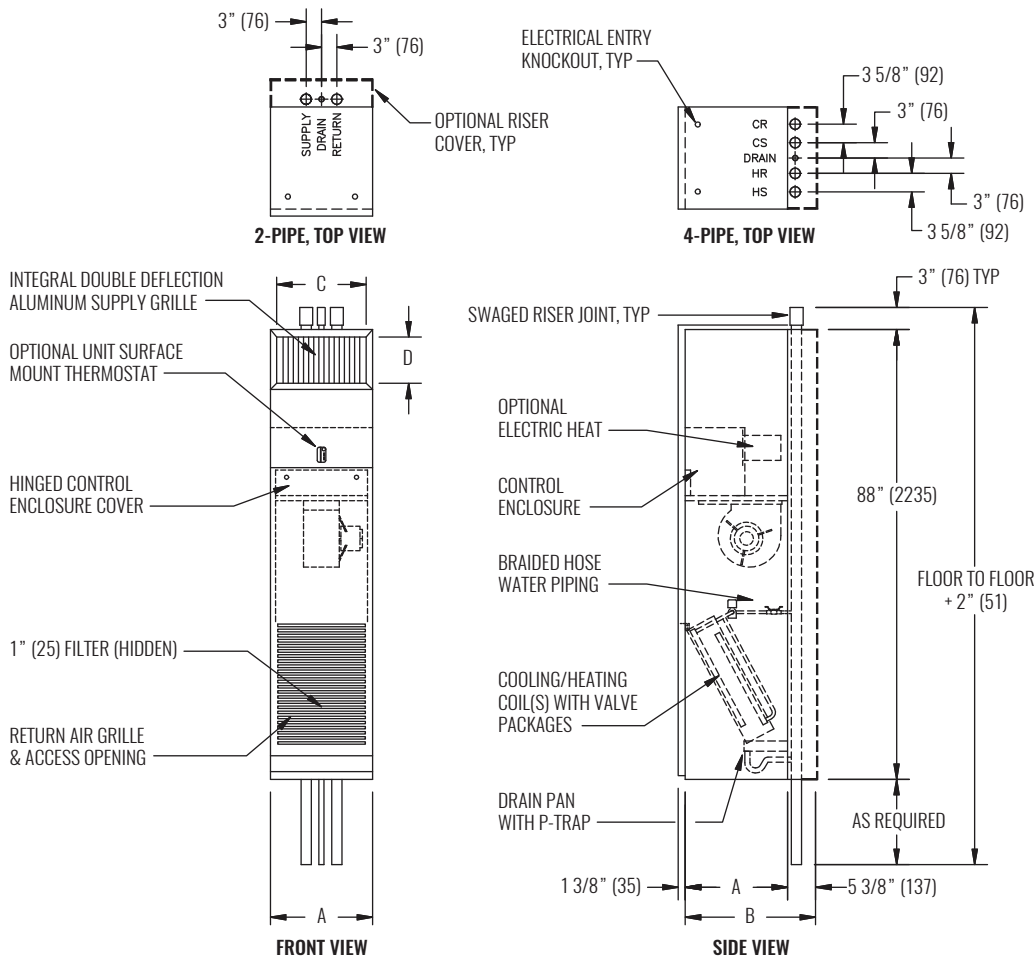
CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data

WEB SEARCH: KVPE



DIMENSIONAL DATA



NOTE: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references. Thermostat is shipped loose and may be unit surface mounted or remote wall mounted. All units are back riser, front single supply. Floor and ceiling trim furnished and installed by others.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS			
UNIT SIZE	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A	B	C	D
03	330 - 337	8 - 11	21 - 31	18" (457)	23 3/8" (594)	16" (406)	8" (203)
04	443 - 451	11 - 14	24 - 39	18" (457)	23 3/8" (594)	16" (406)	8" (203)
06	557 - 577	16 - 18	32 - 33	20" (508)	25 3/8" (645)	18" (457)	12" (305)
08	800 - 836	19 - 24	39 - 40	20" (508)	25 3/8" (645)	18" (457)	12" (305)
10	911 - 960	23 - 27	53 - 82	24" (610)	29 3/8" (746)	22" (559)	14" (356)
12	1171 - 1206	28 - 33	61 - 62	24" (610)	29 3/8" (746)	22" (559)	14" (356)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

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MODEL

- KVPH - Vertical stack fan coil unit, recessed hi-rise (stand-alone)

FEATURES

- Galvanized steel construction
- 1/2" thick fiberglass, foil faced fiberglass, or cellular foam insulation
- Integral filter rack with 1" throwaway, synthetic media MERV 6, or pleated MERV8 filter
- Manual or motorized outside air damper (optional)
- Riser slot knockouts
- Supply air knockouts
- Single or double deflection discharge grille(s)

COILS

- Cooling - chilled water (3 or 4 rows)
- Heating - hot water reheat (1 or 2 rows)
- 5 total rows of cooling and heating coils maximum
- 3/8" O.D. seamless copper tubes (0.012" tube wall thickness)
- Stainless steel coil casing (optional)
- High efficiency aluminum fin surface
- Removable for service
- Manual air vents
- Automatic air vents (optional)

DRAIN PANS

- Single wall, galvanized steel or stainless steel, externally insulated - fire retardant and antimicrobial
- Positively sloped to drain connection
- Easily removable for cleaning
- Condensate overflow switch (optional)
- 7/8" O.D. primary drain connection
- P-trap factory installed

FAN/MOTOR ASSEMBLIES

- Forwardly curved, DWDI centrifugal type
- 115, 208-230, 220 and 277V, 1-phase, 3-speed PSC motors
- 115, 208-230, 220 and 277V, 1-phase, 3-speed EC motors
- Quick disconnect motor connections
- Removable fan/motor deck for service

ELECTRICAL

- Electric reheat available
- Electrical enclosure with access door for field wiring terminations
- Terminal block for field connections
- Unit and remote mounted three speed fan switches (optional)
- SCR fan speed controller (optional)
- Main fusing (optional)
- Disconnect switch, toggle, or door interlocking (optional)
- Silent electric heat relays and fan relay (optional)



PIPING PACKAGES

- Factory installed
- 1/2" piping size
- 2-way and 3-way 2 position or floating point control valves
- Isolation ball valves with memory stop
- Stainless steel braided hoses (threaded swivel connections)
- Automatic fixed flow control (optional)
- Unions and P/T ports (optional)
- Analog, digital display or programmable thermostats with remote, unit or ADA mounting options

RISERS

- Type-M or L copper with swaged connections
- 3/4" to 3" diameters
- 1/2" and 3/4" closed cell insulation
- Type-M copper condensate riser
- Riser extensions
- Riser cover
- Ship in advance risers

TANDEM ARRANGEMENTS

- Primary/secondary arrangements are available described as other models but similar to KVPH
- KVPS - Secondary, recessed unit, ordered individually
- KVPP - Primary, recessed unit, ordered individually
- KVIP & KVIS - Tandem primary and secondary units with risers and optional fire rated wall plenum (UL 1479), shipped as full assembly

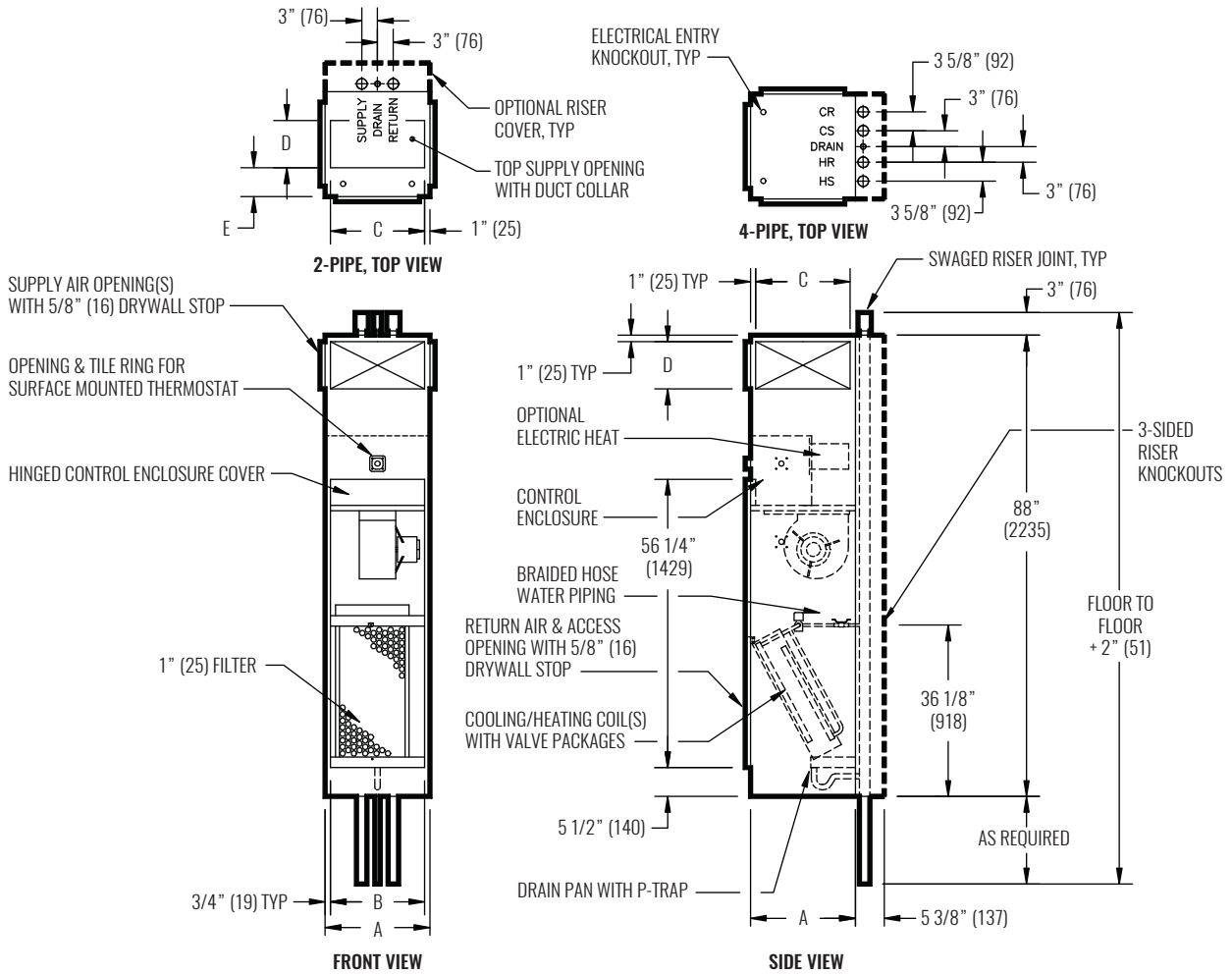
CERTIFICATIONS

- cETL Listed Electric Heat Units - Adherence to UL/ANSI Standard 1995
- AHRI 440 certified performance data

WEB SEARCH: KVPH



DIMENSIONAL DATA



NOTE: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references. Thermostat is shipped loose and may be unit surface mounted via tile ring or remote wall mounted. Back riser is shown, other locations are available.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE			DIMENSIONS				
	UNIT SIZE	CFM RANGE	TOTAL COOLING CAPACITY RANGE (MBH)	HEATING CAPACITY RANGE (MBH)	A	B	SINGLE SUPPLY	
C							D	
03	330 - 337	8 - 11	21 - 31	18" (457)	16 1/2" (419)	16" (406)	8" (203)	6" (152)
04	443 - 451	11 - 14	24 - 39	18" (457)	16 1/2" (419)	16" (406)	8" (203)	6" (152)
06	557 - 577	16 - 18	32 - 33	20" (508)	18 1/2" (470)	18" (457)	12" (305)	6" (152)
08	800 - 836	19 - 24	39 - 40	20" (508)	18 1/2" (470)	18" (457)	12" (305)	6" (152)
10	911 - 960	23 - 27	53 - 82	24" (610)	22 1/2" (572)	22" (559)	14" (356)	8" (203)
12	1171 - 1206	28 - 33	61 - 62	24" (610)	22 1/2" (572)	22" (559)	14" (356)	8" (203)

NOTES: Information shown is abbreviated. See website for complete information. Data is based on 115/1/60 3-speed PSC motor on high fan speed with 0.05" ESP. Cooling coil: 75°F DB and 63°F WB EAT, 45°F EWT, 55°F LWT. Heating coil: 70°F DB EAT, 180°F EWT, 160°F LWT. CFM and coil performance ranges will vary depending on coil combination selected.

MODEL

- KBH - Horizontal standard blower coil unit

FEATURES

- Galvanized steel cabinet construction, minimum 18 gauge
- 1" thick fiberglass or scrim foil face insulation
- 1" supply duct collars
- Gasketed, removable access panels on sides, sized for easy handling
- IAQ galvanized steel drain pan
- Left and right hand arrangement
- Hanger rod holes in top panel for "thru bolt" installation
- External rubber-in-shear or spring type vibration isolators (optional)
- Base rails with rigging slots factory assembled and installed (optional)
- Multiple fan arrangements
- Mixing Box (optional) with low leakage dampers in multiple arrangements

COOLING AND REHEAT COIL OPTIONS

- Chilled water - 3, 4, or 6 rows
- Direct expansion (DX) - 3, 4, or 6 rows
- Hot water - 1 or 2 rows
- Steam - 1 or 2 rows
- Electric heat - discharge mounting

COILS

- 1/2" O.D. seamless copper tubes
- Manual air vent plug on all water coils
- 0.016" tube wall on water and evaporator coils
- 0.025" tube wall on steam coils
- 300 PSIG working pressure at 200°F, tested at 450 PSIG
- High efficiency aluminum fin surface

FILTERS AND FILTER RACK

- Hinged side access flat filter racks
- 2" throwaway filter
- High efficiency filter rack with 2" and 4" filters (optional)

FAN ASSEMBLY

- Forward curved (double width, double inlet) fans
- Statically and dynamically balanced
- Solid steel shafting
- Ball bearings with a minimum design average life (L50) of 100,000 hours



FAN MOTOR AND DRIVE

- NEMA design ODP motors
- 1750 RPM single speed, 60 Hertz
- Single phase motors with inherent thermal protection
- 3-phase motors (optional)
- Rigid mount adjustable motor base
- Standard cross section "V-belt" drive with 1.2 service factor
- Adjustable pitch motor pulley and fixed pitch blower pulley

OPTIONAL ELECTRICAL FEATURES

- Motor wiring in conduit
- Motor starter (contactor with an overload for 3-phase; contactor for 1-phase), factory installed
- Door interlocking disconnect switch
- Hand off auto switch (HOA)
- Main fusing

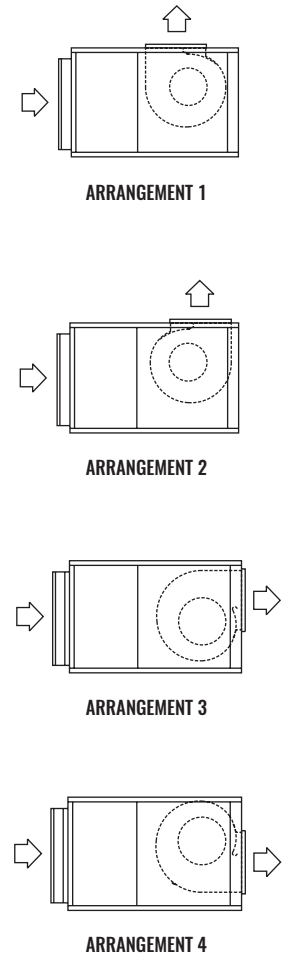
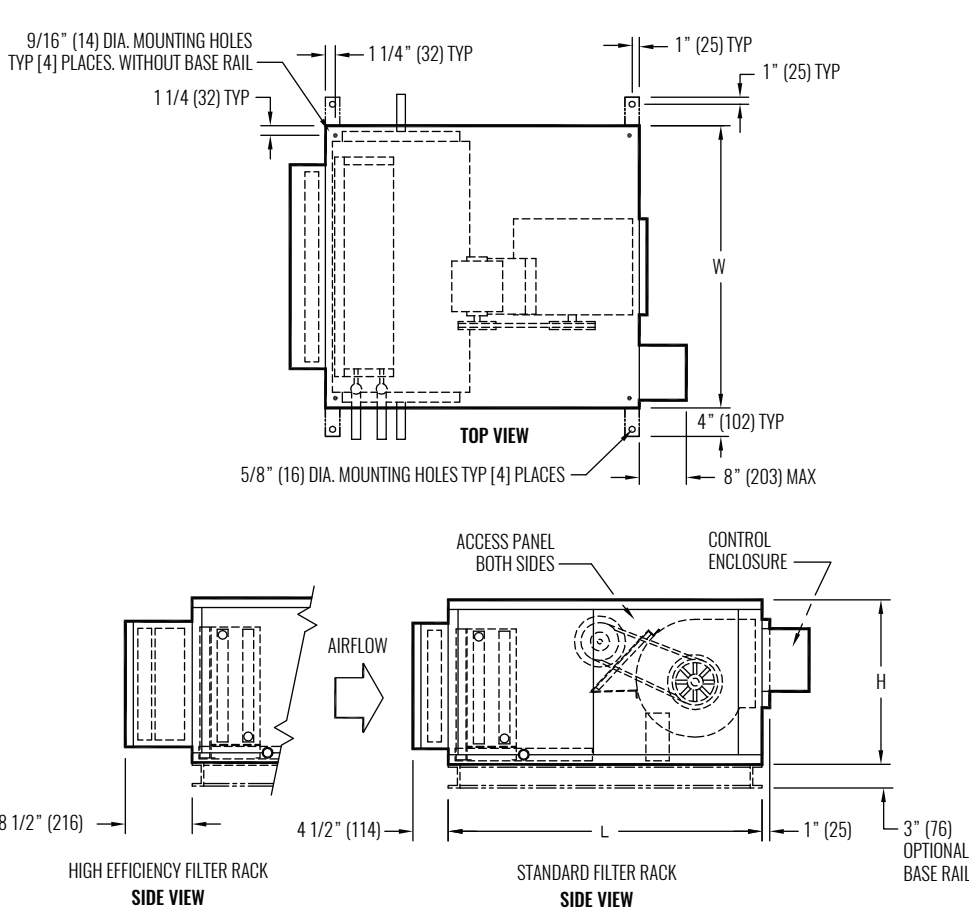
CERTIFICATIONS

- cETL Listed - Adherence to UL/ANSI Standard 1995
- AHRI 410 certified performance data

WEB SEARCH: KBH



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references. Provide sufficient clearance to permit access to controls and comply with applicable codes and ordinances. Base rail is optional on the base unit. Base rails must be used with mixing box. Electric heaters are available in fan arrangement 3 and 4 only.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE	DIMENSIONS			
UNIT SIZE	NOMINAL CFM	FAN SIZE	L	W	H
8	800	9" x 4" (229 x 102)	40" (1016)	30" (762)	21" (533)
12	1200	9" x 6" (229 x 152)	40" (1016)	36" (914)	21" (533)
16	1600	10" x 8" (254 x 203)	40" (1016)	44" (1118)	21" (533)
20	2000	10" x 10" (254 x 254)	40" (1016)	50" (1270)	21" (533)
30	3000	15" x 9" (381 x 229)	46" (1168)	59" (1499)	30" (762)
40	4000	15" x 11" (381 x 279)	46" (1168)	68" (1727)	30" (762)

NOTES: Dimensions in parentheses are mm. All dimensions are ±1/4" (6mm). Metric values are soft conversion. Right hand unit shown, left hand unit opposite. Motor/drive location may be specified left hand or right hand. Standard control enclosure location matches motor/drive position. See coil connection sizes and locations.

MODEL

- KBV - Vertical standard blower coil unit

FEATURES

- Galvanized steel cabinet construction, minimum 18 gauge
- 1" thick fiberglass or scrim foil face insulation
- 1" supply duct collars
- Gasketed, removable access panels on sides, sized for easy handling
- IAQ galvanized steel drain pan
- Left and right hand arrangement
- Hanger rod holes in base rail for "thru bolt" installation
- External rubber-in-shear or spring type vibration isolators (optional)
- Base rails with rigging slots factory assembled and installed (optional)
- Multiple fan arrangements
- Mixing Box (optional) with low leakage dampers in multiple arrangements

COOLING AND REHEAT COIL OPTIONS

- Chilled water - 3, 4, or 6 rows
- Direct expansion (DX) - 3, 4, or 6 rows
- Hot water - 1 or 2 rows
- Steam - 1 or 2 rows
- Electric heat - discharge mounting

COILS

- 1/2" O.D. seamless copper tubes
- Manual air vent plug on all water coils
- 0.016" tube wall on water and evaporator coils
- 0.025" tube wall on steam coils
- 300 PSIG working pressure at 200°F, tested at 450 PSIG
- High efficiency aluminum fin surface

FILTERS AND FILTER RACK

- Hinged side access flat filter racks
- 2" throwaway filter
- High efficiency filter rack with 2" and 4" filters (optional)

FAN ASSEMBLY

- Forward curved (double width, double inlet) fans
- Statically and dynamically balanced
- Solid steel shafting
- Ball bearings with a minimum design average life (L50) of 100,000 hours



FAN MOTOR AND DRIVE

- NEMA design ODP motors
- 1750 RPM single speed, 60 Hertz
- Single phase motors with inherent thermal protection
- 3-phase motors (optional)
- Rigid mount adjustable motor base
- Standard cross section "V-belt" drive with 1.2 service factor
- Adjustable pitch motor pulley and fixed pitch blower pulley

OPTIONAL ELECTRICAL FEATURES

- Motor wiring in conduit
- Motor starter (contactor with an overload for 3-phase; contactor for 1-phase), factory installed
- Door interlocking disconnect switch
- Hand off auto switch (HOA)
- Main fusing

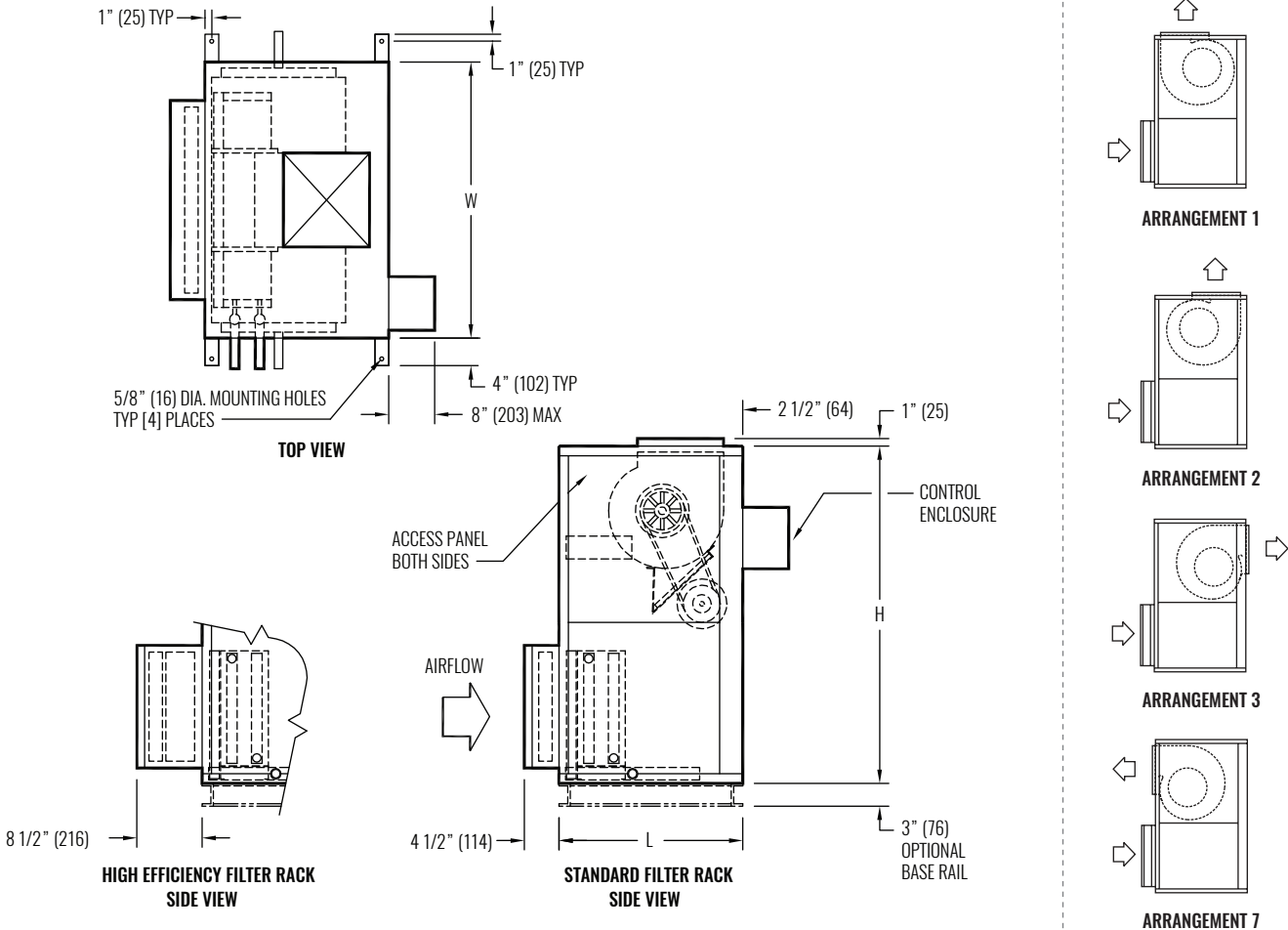
CERTIFICATIONS

- cETL Listed - Adherence to UL/ANSI Standard 1995
- AHRI 410 certified performance data

WEB SEARCH: KBV



DIMENSIONAL DATA



NOTES: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references. Provide sufficient clearance to permit access to controls and comply with applicable codes and ordinances. Base rail is optional on the base unit. Base rails must be used with mixing box. Electric heaters are available in fan arrangement 3 and 7 only.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE	DIMENSIONS			
		UNIT SIZE	NOMINAL CFM	FAN SIZE	L
8	800	9" x 4" (229 x 102)	24" (610)	30" (762)	44" (1118)
12	1200	9" x 6" (229 x 152)	24" (610)	36" (914)	44" (1118)
16	1600	10" x 8" (254 x 203)	24" (610)	44" (1118)	44" (1118)
20	2000	10" x 10" (254 x 254)	30" (762)	50" (1270)	50" (1270)
30	3000	15" x 9" (381 x 229)	30" (762)	59" (1499)	56" (1422)
40	4000	15" x 11" (381 x 279)	30" (762)	68" (1727)	59" (1499)

NOTES: Dimensions in parentheses are mm. All dimensions are $\pm 1/4"$ (6mm). Metric values are soft conversion. Right hand unit shown, left hand unit opposite. Motor/drive location may be specified left hand or right hand. Standard control enclosure location matches motor/drive position. See coil connection sizes and locations.

MODEL

- KSL - Vertical small footprint blower coil, bottom return

FEATURES

- Galvanized steel cabinet construction, minimum 18 gauge
- 1" thick foil faced fiberglass insulation
- 1" supply duct collars
- Gasketed, full size removable front access panel
- IAQ galvanized steel drain pan with 1 1/8" ODM copper pipe outlet
- Left and right hand arrangement
- Multiple fan discharge arrangements
- NEMA 1 control enclosure houses electrical options
- External rubber-in-shear or spring type vibration isolators (optional)
- Base rails with rigging slots factory assembled and installed (optional)

COOLING AND REHEAT COIL OPTIONS

- Chilled water - 4 or 6 rows
- Direct expansion (DX) - 4 or 6 rows
- Hot water - 1 or 2 rows, draw thru or blow thru
- Steam - 1 or 2 rows, blow thru only
- Electric heat

COILS

- 1/2" O.D. seamless copper tubes
- Manual air vent plug on all water coils
- 0.016" or 0.025" tube wall on water and evaporator coils
- 0.025" tube wall on steam coils
- 300 PSIG working pressure at 200°F, tested at 450 PSIG
- High efficiency aluminum fin surface

FILTERS AND FILTER RACK

- Front access filter rack
- Standard 2" nominal throwaway filters
- 2" pleated filter (optional)

FAN ASSEMBLY

- Forward curved (double width, double inlet) fans
- Statically and dynamically balanced
- Solid steel shafting
- Ball bearings with a minimum design average life (L50) of 100,000 hours



BLOWER COIL UNITS

FAN MOTOR AND DRIVE

- NEMA design ODP motors
- 1750 RPM single speed, 60 Hertz
- Single phase motors with inherent thermal protection
- 3-phase motors (optional)
- Rigid mount adjustable motor base
- Standard cross section "V-belt" drive with 1.2 service factor
- Adjustable pitch motor pulley and fixed pitch blower pulley

OPTIONAL ELECTRICAL FEATURES

- Motor wiring in conduit
- Motor starter (contactor with an overload for 3-phase; contactor for 1-phase), factory installed
- Door interlocking disconnect switch
- Hand off auto switch (HOA)
- Main fusing

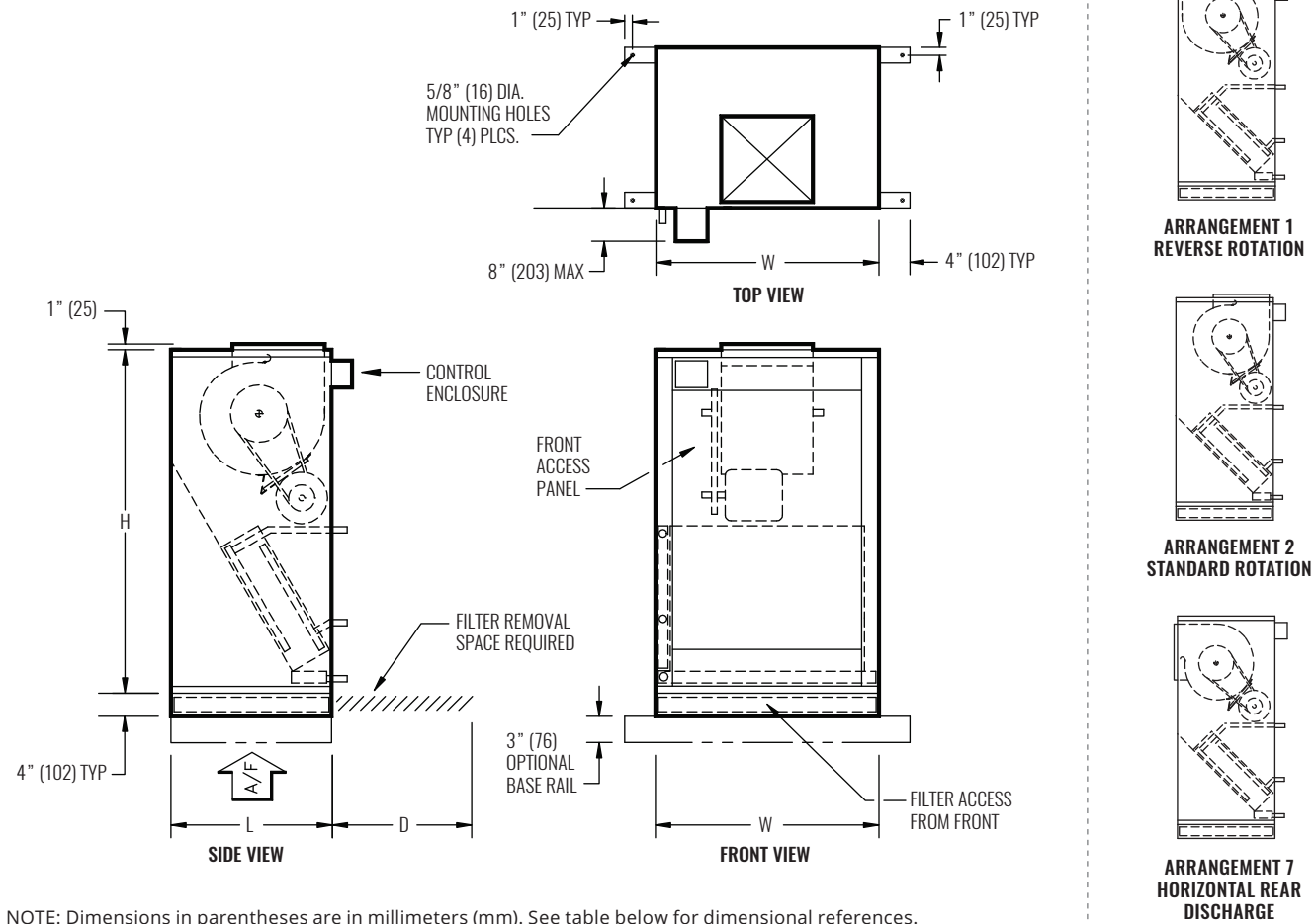
CERTIFICATIONS

- cETL Listed - Adherence to UL/ANSI Standard 1995
- AHRI 410 certified performance data

WEB SEARCH: KSL



DIMENSIONAL DATA



NOTE: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE	DIMENSIONS			
		H	W	L	D
UNIT SIZE	NOMINAL CFM				
8	800	46" (1168)	26" (660)	19" (483)	16" (406)
12	1200	46" (1168)	26" (660)	21" (533)	20" (508)
16	1600	54" (1372)	29" (737)	25" (635)	24" (610)
20	2000	54" (1372)	29" (737)	28" (711)	24" (610)
25	2500	60" (1524)	39" (991)	28" (711)	24" (610)
30	3000	60" (1524)	39" (991)	28" (711)	24" (610)

NOTES: Dimensions in parentheses are mm. All dimensions are $\pm 1/4"$ (6mm). Metric values are soft conversions. Motor/drive location may be specified left or right hand. Standard control enclosure location matches motor/drive position. Provide sufficient clearance to access electrical controls and comply with all applicable codes and ordinances. Maximum total internal coil rows: 6. Left hand unit shown; right hand unit has CW and HW piping connections mirrored. Filter assembly runs the full length of the unit size.

MODEL

- KSB - Vertical small footprint blower coil, rear return

FEATURES

- Galvanized steel cabinet construction, minimum 18 gauge
- 1" thick foil faced fiberglass insulation
- 1" supply duct collars
- Gasketed, full size removable front access panel
- IAQ galvanized steel drain pan with 1 1/8" ODM copper pipe outlet
- Left and right hand arrangement
- Multiple fan discharge arrangements
- NEMA 1 control enclosure houses electrical options
- External rubber-in-shear or spring type vibration isolators (optional)
- Base rails with rigging slots factory assembled and installed (optional)

COOLING AND REHEAT COIL OPTIONS

- Chilled water - 4 or 6 rows
- Direct expansion (DX) - 4 or 6 rows
- Hot water - 1 or 2 rows, draw thru or blow thru
- Steam - 1 or 2 rows, blow thru only
- Electric heat

COILS

- 1/2" O.D. seamless copper tubes
- Manual air vent plug on all water coils
- 0.016" or 0.025" tube wall on water and evaporator coils
- 0.025" tube wall on steam coils
- 300 PSIG working pressure at 200°F, tested at 450 PSIG
- High efficiency aluminum fin surface

FILTERS AND FILTER RACK

- Front access filter rack
- Standard 2" nominal throwaway filters
- 2" pleated filter (optional)

FAN ASSEMBLY

- Forward curved (double width, double inlet) fans
- Statically and dynamically balanced
- Solid steel shafting
- Ball bearings with a minimum design average life (L50) of 100,000 hours



BLOWER COIL UNITS

FAN MOTOR AND DRIVE

- NEMA design ODP motors
- 1750 RPM single speed, 60 Hertz
- Single phase motors with inherent thermal protection
- 3-phase motors (optional)
- Rigid mount adjustable motor base
- Standard cross section "V-belt" drive with 1.2 service factor
- Adjustable pitch motor pulley and fixed pitch blower pulley

OPTIONAL ELECTRICAL FEATURES

- Motor wiring in conduit
- Motor starter (contactor with an overload for 3-phase; contactor for 1-phase), factory installed
- Door interlocking disconnect switch
- Hand off auto switch (HOA)
- Main fusing

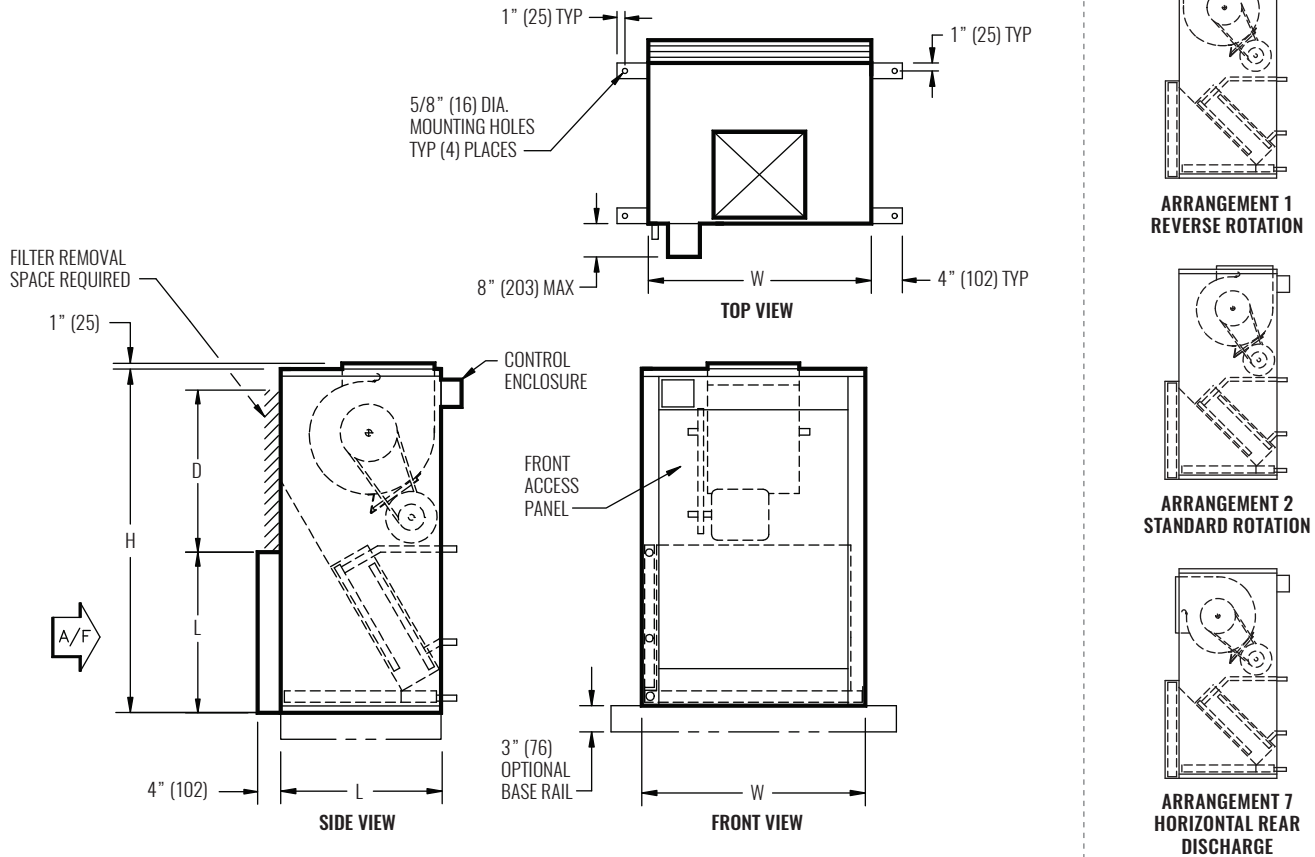
CERTIFICATIONS

- cETL Listed - Adherence to UL/ANSI Standard 1995
- AHRI 410 certified performance data

WEB SEARCH: [KSB](#)



DIMENSIONAL DATA



NOTE: Dimensions in parentheses are in millimeters (mm). See table below for dimensional references.

PERFORMANCE AND DIMENSIONAL DATA

SIZE	PERFORMANCE	DIMENSIONS			
UNIT SIZE	NOMINAL CFM	H	W	L	D
8	800	46" (1168)	26" (660)	19" (483)	16" (406)
12	1200	46" (1168)	26" (660)	21" (533)	20" (508)
16	1600	54" (1372)	29" (737)	25" (635)	24" (610)
20	2000	54" (1372)	29" (737)	28" (711)	24" (610)
25	2500	60" (1524)	39" (991)	28" (711)	24" (610)
30	3000	60" (1524)	39" (991)	28" (711)	24" (610)

NOTES: All dimensions are $\pm 1/4"$ (6mm). Metric values are soft conversions. Motor/drive location may be specified Left or Right Hand. Standard control enclosure location matches motor/drive position. Provide sufficient clearance to access electrical controls and comply with all applicable codes and ordinances. Maximum total internal coil rows: 6. Left hand unit shown; right hand unit has CW and HW piping connections mirrored. Filter assembly runs the full length of the unit size.

MODEL

- KBM - Modular blower coil / air handler

FEATURES

- Modular design facilitates retrofit
- Multiple fan discharge arrangements
- Galvanized steel cabinet construction, minimum 18 gauge
- 1" thick fiberglass or 1" thick foil face insulation
- Doublewall (solid or perforated) construction available
- Gasketed, removable access panel sized for easy handling
- Hinged access doors with quick action latches (optional)
- Multiple filter options including spare filters available
- IAQ galvanized steel drain pan (stainless steel IAQ available)
- Left and right hand arrangement
- 4" base rails with rigging slots factory assembled and installed (optional)
- Motor starter and VFD factory installed (optional)
- Discharge plenum (optional)
- Access sections (optional)

COOLING AND REHEAT COIL OPTIONS

- Chilled water - 3, 4, 6, or 8 rows
- Direct expansion (DX) - 3, 4, 6, or 8 rows
- Hot water - 1, 2, 3, or 4 rows
- Steam - 1 or 2 rows
- Electric heat - draw thru or blow thru

COILS

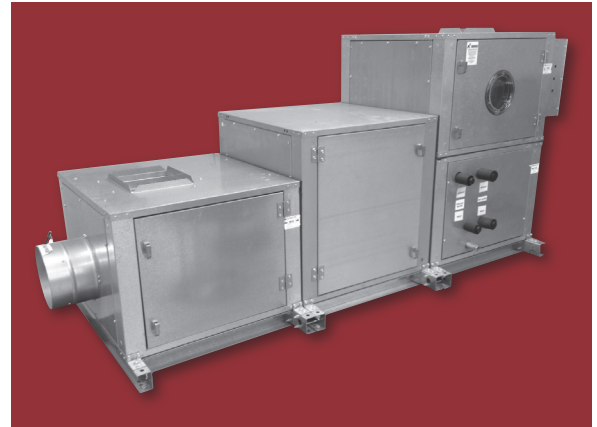
- 1/2" O.D. seamless copper tubes
- Manual air vent plug on all water coils
- 0.016" or 0.025" tube wall on water and evaporator coils
- 0.025" tube wall on steam coils
- 300 PSIG working pressure at 200°F, tested at 450 PSIG

FILTERS AND FILTER RACK

- Hinged side access flat filter rack
- 2" pleated filters (30%)
- 4" high efficiency pleated filters (65, 85, and 95%) (optional)
- Mixing box with filter sections (flat or v-bank filter arrangements) (optional)

FAN ASSEMBLY

- Single forward curved fan sections
- Statically and dynamically balanced
- Solid steel shafting
- Fan decks with internal vibration isolation.
- Ball bearings with a minimum design average life (L50) of 100,000 hours



FAN MOTOR AND DRIVE

- NEMA design ODP motors
- 1750 RPM single speed, 60 Hertz
- Single phase motors with inherent thermal protection
- 3-phase motors (optional)
- Standard cross section "V-belt" drive with 1.2 service factor
- Adjustable pitch motor pulley and fixed pitch blower pulley
- Direct drive plenum fans with internal rubber-in-shear (RIS) isolation
- TEFC motors
- High efficiency motors
- Variable frequency drives, factory installed (mounted and wired)
- Motor starter (contactor with overload for 3-phase; contactor for 1-phase), factory installed (mounted and wired)
- Return FC and plenum fan sections

OPTIONAL ELECTRICAL FEATURES

- Motor wiring in conduit
- Single or three phase fan control packages
- Door interlocking disconnect switch (non-fused or fused)
- Fusing (main or per stage)
- Hand off auto switch (HOA)
- Frequency inverters
- Electric heat interlock relay
- Relays, transformers, etc.

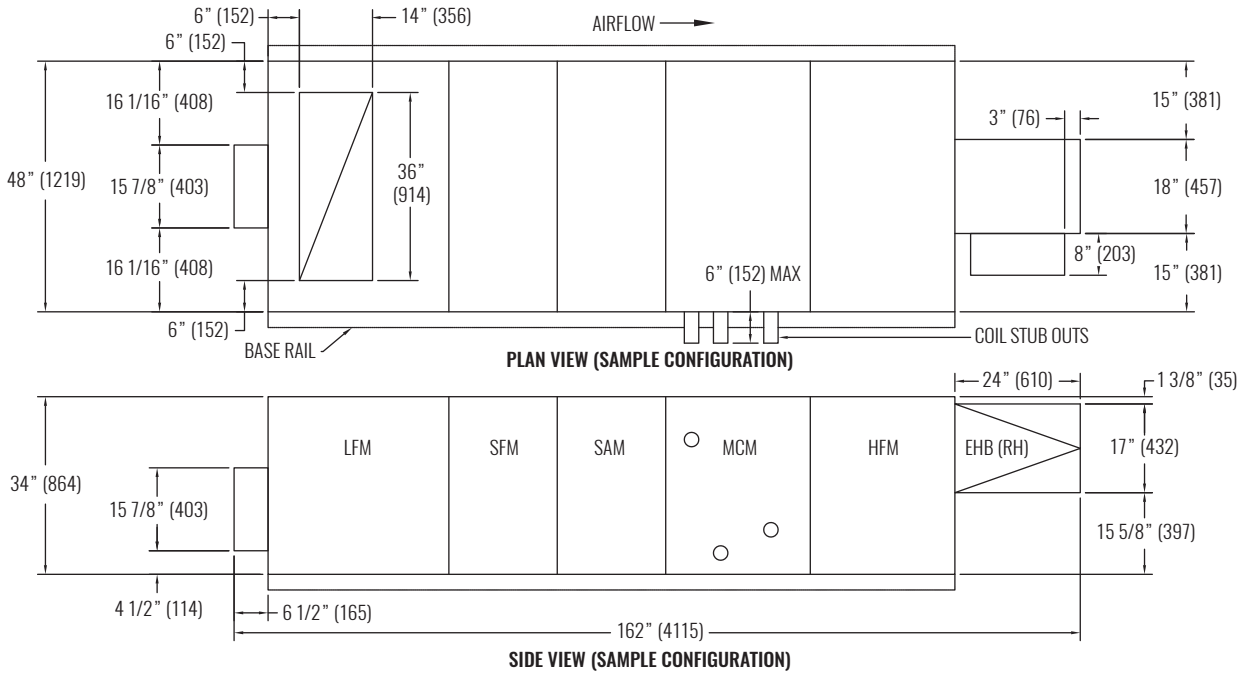
CERTIFICATIONS

- cETL Listed - Adherence to UL/ANSI Standard 1995
- AHRI 410 certified performance data

WEB SEARCH: KBM



DIMENSIONAL DATA AND PERFORMANCE



NOTE: Dimensions in parentheses are in millimeters (mm).

AVAILABLE MODULES	
ACRONYM	DESCRIPTION
EFM	EXTERNAL FLAT FILTERS (2")
SAM	SMALL ACCESS
SCM	SMALL COIL
SFM	SMALL FLAT FILTERS (2" AND/OR 4" CARTRIDGE)
MAM	MEDIUM ACCESS
MCM	MEDIUM COIL
MFM	MEDIUM SMARTRAC MIXING BOX WITH FLAT FILTERS (2")
MIM	MEDIUM SMARTRAC INLET PLENUM WITH FLAT FILTERS (2")
MMM	MEDIUM MIXING BOX WITH FLAT FILTERS (2")
MRM	MEDIUM INLET PLENUM WITH FLAT FILTERS (2")
MVM	MEDIUM V-BANK FILTERS (2")
HFM	HORIZONTAL FC FAN
HPM	HORIZONTAL PLUG FAN
VCM	VERTICAL COIL
VFM	VERTICAL FC FAN
LFM	LARGE SMARTRAC MIXING BOX WITH V-BANK FILTERS (2")
LIM	LARGE SMARTRAC INLET PLENUM WITH V-BANK FILTERS (2")
LMM	LARGE MIXING BOX WITH V-BANK FILTERS (2")
LRM	LARGE INLET PLENUM WITH V-BANK FILTERS (2")
LPM	LARGE DISCHARGE PLENUM
FCM	FC FAN AND COIL COMBINATION (HORIZONTAL ONLY)
EHB	ELECTRIC HEAT BLOW THRU

The modular design of the KBM air handler allows it to be custom built to for any application. A single unit can be comprised of different combinations of modules. Krueger's selection software makes it easy to build a unit and see its custom performance and dimensions. Shown above is a sample configuration of a size 8 unit with mixing box, small filter box, access module, coil section, and a horizontal fan section.

PERFORMANCE	
UNIT SIZE	CFM RANGE
2	650 - 1050
3	950 - 1550
4	1200 - 2000
6	1900 - 3100
8	2400 - 4000
10	3100 - 5100
12	3900 - 6900
14	4600 - 7800
17	5200 - 9200

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**SUPPLEMENTAL
INFORMATION**

SUPPLEMENTAL INFORMATION

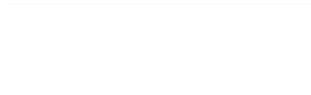


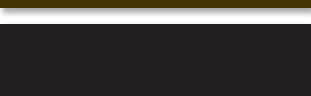
Colors and Finishes for Grilles, Registers, and Diffusers



SUPPLEMENTAL INFORMATION

COLORS AND FINISHES

PAINT AND ANODIZE COLOR OFFERING

 <p>UNTREATED PRODUCTION MATERIAL</p>	MILL (01)	STANDARD PAINT ¹
	BRITISH WHITE (44)	
	BRITISH WHITE ANTIMICROBIAL (4A)	OPTIONAL PAINT ¹
	OFF WHITE (49)	
	ALUMICAN (10)	
	ALUMICAN ANTIMICROBIAL (1A)	
	CANYON BROWN (32)	
	BLACK (35)	
	CLEAR ANODIZE (81)	ANODIZED ²
	LIGHT BRONZE ANODIZE (84)	
	MEDIUM BRONZE ANODIZE (85)	
	DARK BRONZE ANODIZE (86)	
	BLACK ANODIZE (87)	
 <p>RAL CLASSIC NUMBER OR CUSTOM COLOR SWATCH</p>	CUSTOM COLOR MATCH (07)	CUSTOM

NOTES:

All finish types shown are NOT available with all products. Please see Krueger's Product Catalog or website for available finishes per product.

Standard finish options are Mill (untreated production material) or British White. **For other paint selections or paint matching, additional fees may apply.**

All finishes and colors shown serve as a guide only. Please contact your local Krueger Representative for an actual sample.

¹ Powder coat British White and Antimicrobial White are standard with certain critical environment products only. Contact Krueger for details.

² Anodized options are only available with select aluminum products. Contact Krueger for details.

ADVISORY: White can be used as a primer coat. For field finishing, white coating must be sanded lightly.

PRODUCT FINISHES

Krueger has a broad range of liquid and powder paint solutions available, as well as custom color matching to meet the needs of most air distribution applications. Additionally, we offer a variety of Aluminum anodized colors for customers who may require the aesthetics and surface characteristics which these finishes offer.

Applied in our state-of-the-art paint facilities, Krueger product finishes take full advantage of the most current, cutting-edge technology available. From standard paint finishes, custom color matching, antimicrobial powder paint coatings, and Aluminum anodizing, Krueger has a product finish that is right for you.

STANDARD LIQUID PAINT

Description

Krueger's standard paint selections use an anodic electrocoating process that produces a durable, thorough, controllable, corrosion-resistant finish on all products.

Method of Application

After assembly, products are washed, rinsed, pretreated with zirconium phosphate, and then rinsed again. They are then suspended from an anodic hook and dipped into a high performance electrocoating tank. Following electrocoating, products are dried and baked in a forced air oven at a peak temperature of 310°F until cured.

FILM PROPERTIES				
PROPERTY	TEST METHOD	STANDARD E-COAT VALUE	STANDARD POWDER COAT VALUE	ANTIMICROBIAL POWDER COAT VALUE
FILM THICKNESS	N/A	1.0 - 1.2 mils	2.3 - 3.7 mils	2.3 - 3.7 mils
GLOSS: 60-DEGREES	ASTM D523-89	60 - 70%	60 - 70%	55 - 65%
PENCIL HARDNESS	ASTM D3363-92A	HB - H	H - 2H	H - 2H
CROSSHATCH ADHESION	ASTM D3359-83	CROSSHATCH 3B	4A - 5A	4A - 5A
IMPACT	ASTM D2794-93	DIRECT: >100 IN/LB REVERSE: >80 IN/LB	N/A	N/A
SALT SPRAY	ASTM B117-9048	100 HOURS	1000 HOURS	1000 HOURS
HUMIDITY	ASTM D2247-92	> 500 HOURS	1000 HOURS	1000 HOURS
WATER SOAK	ASTM D870-92	250 HOURS	N/A	N/A
CONICAL MANDREL	ASTM D522	N/A	1/8" CONICAL BEND NO CRACKING SHOWS	1/8" CONICAL BEND NO CRACKING SHOWS

STANDARD POWDER PAINT

Description

Krueger's powder paint coatings are aesthetically pleasing, provide excellent physical and chemical resistance properties, and produce a durable uniform finish. Additionally, they are antiseptically manufactured to meet the increasingly stringent requirements of the commercial, industrial, healthcare and laboratory markets, and are used exclusively on Krueger's world-class critical environment diffusers.

Method of Application

After assembly, products go through a multi-staged wash and pretreat system, are oven dried, then coated with 2.0 to 3.0 mils of powder paint. The products then move through an oven and are baked at a temperature of 425°F until fully cured.

Antimicrobial Powder Coat

Krueger's antimicrobial powder coat paints help reduce the undesirable effects of odors and stains caused by bacteria, mold, mildew, and fungi on the coating. They also resist fingerprints and smudges, which help them stay cleaner between scheduled routine maintenance. When cleaning is necessary, they can be wiped down with a mild soap and water solution.

Antimicrobials within the paint decrease microbial growth by disrupting the microorganisms when they make contact with the surface. A short period of time after contact, the bacteria levels begin to reduce to unmeasurable levels.¹ Even better, these coatings are environmentally friendly and are considered to be RoHS and REACH-compliant solutions.

¹ **DISCLAIMER:** This product is formulated with antimicrobials to help suppress the growth of odor and stain-causing microorganisms on the coating. It is not intended as a substitute for good hygiene or to prevent foodborne or infectious illnesses.

INFORMATION FOR GRILLE, REGISTER, AND DIFFUSER APPLICATIONS

Krueger has provided design recommendations for unit spacing and airflow ranges within data tables for diffusers which are intended for cooling in open plan office type environments. The stated values are based on several factors and considerations.

- Every point within a space has a measurable air temperature and velocity. ADPI (Air Diffusion Performance Index) directly relates these space conditions to occupants' thermal comfort. The design goal in an office environment is to maintain high comfort levels by obtaining high ADPI values. Research indicates that 80% of the occupants in a typical office environment would feel comfortable within -3°F to +2°F of the set point and air velocities of 70 FPM or less.
- ASHRAE Standard 55 2016 Users' Manual suggests that one can prove compliance to the vertical stratification requirements of the Standard (a maximum of 5.4°F temperature difference between the top and bottom of the occupied zone) by calculating ADPI based on the table in the ASHRAE Handbook using diffuser type, load, and isothermal throw to 50 FPM and ½ diffuser separation distance. An ADPI greater than 80% assures that the vertical stratification will meet the requirement.
- For many years, Krueger has published ADPI selection charts based on diffuser spacing and airflow per unit area. These charts indicate the lowest airflow rate which will yield an ADPI greater than 80% for a given diffuser at different spacings.
- While it was common in the past to design interior open plan offices around an airflow rate of 1 CFM/sqft, recent ASHRAE research has indicated this may be far too much air for the present interior loads in most offices. We have selected 0.6 CFM as a maximum design airflow rate to base our open office spacing recommendations.
- Most acoustical specifications require a NC no greater than 35. Diffuser sound levels, per ASHRAE Standard 70, require several diameters of straight duct feeding the diffuser for the sound evaluations. ASHRAE research has determined that this may be a bit conservative in estimating room sound levels, so we have chosen NC=30 as a maximum airflow design point on which to base spacing in an open plan office.
- The diffuser spacing recommendations we have provided are based on calculations involving designed airflow rate per unit area (0.6 CFM/sqft) and the airflow of a given diffuser at NC=30. Using this, we check to ensure the calculated separation distance will have an ADPI greater than 80%. The result, provided in our design tables, is a recommended distance between diffusers within a space. Any situations resulting

in less than 80% ADPI were duly noted. For 4-way diffusers, the distance is measured along the path of the discharge air from the center of one diffuser to the center of the next. For linear slot type diffusers, we make assumptions on standard practice end to end spacing, and then perform calculations to determine the perpendicular distance between linears. NOTE: The diffuser spacing for 1-way and 2-way discharge slots is the same (with even numbered slots). There is a slight difference in the minimum CFM/sqft for an 80% ADPI, but both are likely below ventilation minimums.

- Once diffuser spacing is determined, the published ADPI charts on our website can be used to determine the minimum recommended airflow rate, at said spacing, which will still result in an ADPI of 80% or greater. What this gives us is an ideal CFM range in which each diffuser will provide optimal occupant comfort, given the specifics of the space. This information is imperative for designing a suitable VAV system with turndown capabilities while maintaining 80% ADPI.

Considerations for Diffuser Applications

- The recommendations apply only to multiple outlets in an open plan office, in cooling, and with suspended ceilings around 9ft high. ADPI doesn't really apply to a closed office with a single diffuser or to a perimeter office with a window, where other factors apply. The minimum CFM from a single diffuser in a closed office may be determined from the ADPI charts in Krueger's Product Catalog.
- Krueger is not providing recommended separation for sidewall grilles and registers, nor for round jet outlets. See the following section for considerations for grille and register applications.
- In some cases, 0.6 CFM/sqft is also the minimum recommended airflow rate for the outlet. In a few instances, an outlet should not be used as low as 0.6 CFM/sqft.
- Multiple linear slots in the interior of an open plan office are best used in a 1-way discharge orientation, all throwing the same direction. This will prevent the air jets from the linear devices (with typically long throws) from colliding and resulting in areas of high velocity air within the occupied space.
- Insulation on plenums is generally recommended when high temperature and/or high humidity ambient conditions surround the unit above the ceiling. In an open plenum layout where the return grilles are open to the ceiling plenum, the ambient condition is similar to the occupied zone, making added insulation less beneficial. (Insulation types offered for linear plenums include 1/4" matte, which is a standard

INFORMATION FOR GRILLE, REGISTER, AND DIFFUSER APPLICATIONS (CONTINUED)

internal insulation that will satisfy the needs of most applications; for areas with IAQ requirements, there are two options: 1/2" foil faced fiberglass external insulation or 3/8" cellular internal insulation, which is for applications that require a fiber free option.)

Considerations for Grille and Register Applications

- Most supply grilles have adjustable blades, allowing some flexibility in their location. The throw data in most catalogs (including this one) assumes that the outlet is sidewall mounted, with the face perpendicular to the floor, and within a couple feet of the ceiling. The data assumes the air jet will adhere to this surface. Exceptions are drum louvers, nozzle-type units, and in some cases, duct mounted grilles.
- When a grille is installed in a free jet application in which there is no surface close to the grille for the air to adhere to, the throw will be about 30% shorter due to entrainment of room air on all sides of the jet. In free jet applications, to prevent cold air from falling prematurely into the space, we recommend a supply grille with double deflection blades. The horizontal blades can be adjusted to discharge the air at an upwards angle in relation to the floor to delay the drop of cold air into the occupied space. The vertical blades allow spread adjustments.
- We recommend that if a series of grilles are located along a length of duct, that the duct be sized so that the entering velocity is no more than 1200 FPM. Keep the duct the same size for the entire run. This will result in equal flow out of all the grilles, minimal balancing, and much lower sound levels.
- If grilles are located on opposite sides of a room, the 100 FPM throw from the outlet, at 0° blade deflection, should not reach the mid-point of the distance between them. This will reduce the possibility of jet collisions and uncomfortable drafts.
- Cold air will mix closer to the bottom of the room. Hot air tends to rise. Try to keep the heating ΔT as low as possible and the airflow higher to assist with mixing and avoid stratification. Locating a return low, near the floor, will assist pulling heat down.

Causes for Discomfort

- Overthrow: Colliding jets can enter occupied areas causing draft complaints. Throw data is used to predict where these collisions might occur. Design for a maximum air velocity around 50 FPM in a typical occupied space.
- Excessive Drop: At low flows, cold air will fall. The "Coanda Effect" tends to keep a cold, moving air jet adhered to the ceiling. At lower air speeds, negative buoyancy overcomes the Coanda Effect whereby

localized cold draft complaints can be expected. ADPI can be used to determine at what airflow a diffuser type will likely begin to exhibit this behavior.

- Adjustable linear diffuser pattern controllers are typically not set to a specified pattern during manufacturing. It's important to adjust the pattern controllers to the desired air pattern prior to building operation. Vertical throw linears should be limited to applications where the unit is placed above a window, or in certain high ceiling applications. Linears with vertical throw, which are utilized in a typical office or small meeting room, often result in drafty conditions under the slot, stagnant conditions away from the slot, and an overall stratified and uncomfortable space. For the vast majority of linear slot diffuser installations (not located by windows), they should be set to horizontal discharge. The design engineer should assure that the party responsible for adjusting the pattern controllers is clearly defined in construction documentation to ensure adjustment is executed.
- A horizontal free jet will be affected by the temperature difference between the jet and the room. Cold jets will fall and hot jets will rise. A good estimate of the amount of rise or fall is to assume a jet at an isothermal 75 FPM throw distance will rise or fall by 1% per degree ΔT of that distance.

INFORMATION FOR TERMINAL UNIT APPLICATIONS

- Minimum inlet airflows should be determined first by confirming the DDC controller's minimum operating velocity pressure and its accuracy at that point. Terminal unit airflow sensors are accurate well below the measurability of many DDC pressure transducers. As a rule, most DDC controllers today are able to resolve a signal of 0.01" from the flow sensor. However, this should be confirmed by the controls manufacturer.
- The air balancer should determine the final flow constants used in DDC controllers. Flow constants are used in DDC controllers to calculate airflow when given a measured velocity pressure by the inlet airflow sensor. Krueger's published flow constants are intended to give air balancers a starting point from which to work. With a straight run into the inlet, it should be close to the published airflow values. However, if there is a significant bend in the supply duct close to the inlet, the flow constant may be significantly different than what is published. Once the field adjusted flow constant is determined, that flow constant will be accurate over the entire published airflow range.
- The acoustical effects should be looked at when considering alternative insulations (liners), other than standard exposed fiberglass. Liners affect the sound characteristics of any terminal unit. Fan powered terminal units have the greatest response to changes in lining material, as there is a large induction port from which sound can escape. Certification data is based on exposed fiberglass duct liner. Any other lining option will increase both the cost and the radiated sound generation, especially from fan powered terminal units. Radiated sound for single duct terminal units may decrease with many liner options.
- NC levels should only be used to compare sound characteristics across different terminal unit manufacturers and not used to predict room NC. Catalog sound levels are based on AHRI certified octave band sound at a specified condition, then the default AHRI Standard 885 application deduction assumptions are applied to predict the room NC level. These assumptions assume a specific room layout and installation details that may not be applicable to all the different types of designs used in buildings today. Krueger recommends specifying the sound power level per octave band instead of NC to ensure an accurate selection. Krueger's selection software has AHRI Standard 885 built-in, including standard and non-standard deduction values, as well as sound power for all different linings on terminal units.
- For maximum energy efficiency, series fan powered terminal units with EC motors should be operated as variable air volume instead of the traditional constant airflow method. A series fan powered terminal unit with an EC motor and ACU speed controller provides remote control of the motor speed, which will ramp the fan up or down depending on the load requirement in the space. There are a couple of main benefits to this application, reduced sound and energy consumption. In this configuration, the motor will mostly run at partial speed instead of max design speed. With the EC motor running at a reduced setting, it consumes less energy and will naturally reduce the sound.
- For areas that are sensitive to sound, do not select a terminal unit at the top of its performance range, as these selections tend to generate more noise. Fan powered terminal units, as a rule, should be selected no higher than 1500 CFM to avoid noise complaints when located near sensitive areas. There is also an opportunity to reduce energy consumption with fan powered terminal units that have EC motors because they use less energy when operating in the lower end of their published range.
- Single duct terminal units with reheat coils or small fan powered terminal units should be used to provide temperature control to interior spaces where the minimum ventilation rate exceeds the minimum load requirements for the space. Without the means to reheat supply air, the required ventilation rate into a space can cool it beyond its load requirement. The option to reheat supply air by reheat coils or inducing warm plenum air lowers this risk and results in a comfortable space. Care should also be taken to estimate interior loads based on current office equipment, lighting, and occupant loads that account for today's more efficient technology.
- When using reheat, follow ASHRAE Fundamentals Handbook of limiting the discharge air from a terminal unit to be no greater than of 15° ΔT above the room set point. Leaving air temperature greater than this will likely result in stratification of the room air and take longer for the room to come to set point. When using a single duct with electric reheat with 55° EAT, a simple rule of thumb is 90 CFM per 1 kW of heat = 90° LAT.
- Use Krueger's LineaHeat™ when using variable volume reheat control to help meet ASHRAE Standard 90.1. This standard limits the amount of cooled air that can be reheated with a single duct VAV system to 30% of the maximum design cooling airflow rate. If one uses variable volume reheat, however, and starts with 20%, one can go up to 50% if the discharge temperature is controlled. The low cost Krueger LineaHeat™ option can easily meet this requirement for units with electric heat, responding to a broad array of control signal options.

MODEL NOMENCLATURE

Understanding the method in which we name our products will allow you to quickly identify key features.

- 4: Heavy duty
- 5: Aluminum
- 6: Industrial
- 8: Single deflection
- 88: Double deflection
- 9: Stainless steel
- 13: Security
- 1500 - 1900: Linear (bar or slot)
- A: Adjustable
- CRN: Concentric ring nozzle
- EG: Egg crate core
- EGC: Egg crate with mounting frame
- FR: Fire rated
- HCF: Hard ceiling frame
- S: Stationary blade
- MC: Mitered corner
- PC: Pattern controller
- PLQ: Plaque
- PTB: Plenum slot
- R: Round

Example: S5480 = Stationary blade, aluminum, heavy duty, single deflection grille

TERMINOLOGY FOR GRILLES, REGISTERS, AND DIFFUSERS

ADPI	Air diffusion performance index	NC	Noise criterion
CFM	Cubic feet per minute; the measurement of airflow	Nominal	Ordered length
Clo	Unit used to express the thermal insulation provided by garments and clothing	OA	Overall length
dB	Decibel	RA	Room air
Duct	Ordered length	RC	Room criterion
Drop	The vertical distance that the lower edge of a horizontally projected air stream drops between the outlet and the specified throw value	RGA	Return goods authorization
ECR	Engineering change form	RO	Rough opening
Entrained Jet	Air that projects into an space at or near the ceiling whereby it flows alongside the surface	SA	Supply air
EWR	Engineering work request	SDA	Special discount authorization
FPM	Feet per minute; the measurement of air velocity	Sp	Static pressure; the outward force of air within a duct; think of a water in a balloon pushing out
Free Jet	Air that projects into an open space with no ceiling	SPR	Special product request
G/P	Grid or panel	Spread	The divergence of the airstream in a horizontal or vertical plane after it leaves the outlet
IOM	Installation operation manual	Throw	Horizontal or vertical axial distance an air stream travels after leaving an air outlet before reaching a terminal velocity of (150, 100, or 50 FPM)
L/s	Liters per second; the measurement of volumetric flow rate	Tp	Total pressure; the sum of velocity and static pressure
LwDIS	Radiated sound power level	VOC	Volatile organic compound (content limit)
LwRAD	Unit used to describe the energy generated inside a body due to metabolic activity	Vp	Velocity pressure; the forward moving force of air within a duct
Met	Unit used to describe the energy generated inside a body due to metabolic activity	WG	Inches of water gauge; the measurement of pressure

TERMINOLOGY FOR SPECIALTY AND CRITICAL ENVIRONMENT

ACH Air change rate per hour (also called ACR)

ACR Air change rate (also called ACH)

Air Curtain System: An operating room system like Krueger's Sterilflo System® or Sterilflex System™ that is designed with a combination laminar array and perimeter air curtain to deter laminar air from speeding up and coalescing; creating a barrier to keep particulates out of the surgical space.

Chilled Beam: An air diffuser which treats the sensible load in a space by inducing room air across a coil, mixing it with a small amount of conditioned supply air, and throwing it horizontally across the ceiling surface (Krueger models ASB, ABX, ACE, etc.)

Displacement Ventilation: A variety of air diffusers which provides slow moving cool air directly into the occupied space through a perforated face. Benefits include higher supply temp, low noise, cleaner air, and you only need to service the load in the occupied space not above it. (Krueger models AFA, AFE, AFQ, etc.)

Laminar Flow: Unidirectional, non-turbulent, air flow coming straight out of a diffuser face. Also referred to as non-aspirating. (Krueger model 5000)

Radial Flow: Non-turbulent air flow radiating from a center point outwards generally in a 90 degree of 180 degree pattern. Capable of providing large volumes at low velocities/throws. (Krueger TAD and RF [Radiaflo] models)

TERMINOLOGY FOR EQUIPMENT

ΔT Leaving air temperature less the entering air temperature

ACU Automatic speed control unit for controlling EC motors

AHRI Air Conditioning, Heating and Refrigeration Institute; certifying body for performance

ATR Air temperature rise (°F)

Btuh Heating capacity (British thermal units per hour)

CFM Cubic feet per minute (air volume)

EAT Entering air temperature (°F)

EC Motor Electronically commutated motor (smart motor); also referred to as ECM

ETL Certifying body for UL listing

EWT Entering water temperature (°F)

GPM Gallon per minute

K4 LineaCross Krueger's airflow sensor on terminal units; also called an airflow ring

kW Heating capacity (kilowatts)

LAT Leaving air temperature (°F)

LineaHeat™ Silent operating electronic proportional control

MBH 1,000 Btuh

PSC Motor Permanent split capacitor motor

SCR Heat Usually means proportional is desired; Krueger's match is LineaHeat™

SCR Speed Controller Speed controller for PSC motor; also called a potentiometer

SSR Solid state relays

Steriliner Krueger's 13/16" foil faced ductboard liner

Steriwall Krueger's solid double wall with ½" dual density liner

UL Underwriters Laboratories; organization that develops electrical standards for manufacturing companies

VAV Box Loose industry term for single duct terminal unit, Krueger's model LMHS

VCU Visual speed control unit for controlling ECM motors.

WPD Water pressure drop or head loss (ft WG)

WTD Water temperature drop (°F)

PROVIDING YOU WITH AIR DISTRIBUTION AND EQUIPMENT SOLUTIONS

Let us know how we can assist you in your next building application. Contact your local Krueger representative or visit us on the web at www.krueger-hvac.com to start a discussion.

CRITICAL ROOM SOLUTIONS

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DISPLACEMENT VENTILATION

UNDERFLOOR

Underfloor Diffusers
Underfloor Terminal Units

TERMINAL UNITS

Single Duct
Fan Powered
Dual Duct
Bypass & Retrofit

FAN COILS & BLOWER COILS

Horizontal
Vertical / Stack

DIFFUSERS

Plaque & Architectural
Louvered-Face
Perforated-Face
Modular Core
Linear Slot
Plenum Slot
Round
Air Nozzles

GRILLES & REGISTERS

Supply
Return
Linear Bar
Security
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Duct Mounted
Transfer
Stainless Steel



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