EFFECTIV™

ARCHITECTURE - COMFORT - EFFICIENCY - IAQ

# PRODUCT CATALOG

# DIFFUSERS

## & RETURNS

MARCH 8, 2023

EFFECTIV™

ARCHITECTURE - COMFORT - EFFICIENCY - IAQ

Our **ACEI** philosophy (ARCHITECTURE - COMFORT - EFFICIENCY - IAQ) stands behind each product that we offer and every decision that we make.

We thrive on providing innovative air distribution solutions to numerous architectural needs, thermal comfort problems and energy efficiency requirements, and to help push the boundaries of indoor air quality.

EffectiV HVAC high performance architectural diffusers provide very effective solutions to engineering and design challenges.


## EffectiV HVAC Inc.

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# WARRANTY

EffectiV HVAC Inc. guarantees its products against manufacturing defects for a period of two (2) years, from the date of delivery of the goods to the Customer.

The warranty shall only cover the replacement of defective products. It does not include workmanship, trips, replacement of other damaged products, or any other disbursements, charges or damages, and under no circumstance claims for profit or revenue loss that the Customer or third parties may have suffered. The warranty will not be effective in following circumstances:

- When the product has been incorporated to other products or building by the Customer or third parties, without observing the technical recommendations and installation methods recommenced by EffectiV;

- When the selection of products was inaccurate or the installation faulty;

- When the product has been manipulated or used for different purposes than those for which it was originally conceived;

- When the products have been damaged due to handling and other manipulations;

- When the products have been damaged due to shipping, unless the shipping was provided and paid for by EffectiV;

- When the products have been damaged due to manipulations or repairs subsequent to their first installation;

# Finish Chart

April 18, 2021

## Glossiness

RAL xxxx **B** Shiny 85-95% gloss
RAL xxxx **S** Satin finish, 60-70% gloss
RAL xxxx **M** Matte finish, 20-30% gloss

**Colors below are standard in Satin Finish 60-70% Gloss**

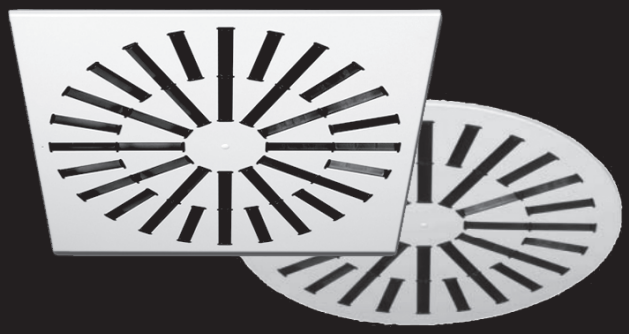



The finishes below are also considered part of this standard finish chart:
**9010B, 9010M, 9016B, 9016M, 9003B, 9003M, 9005M and 9006M**

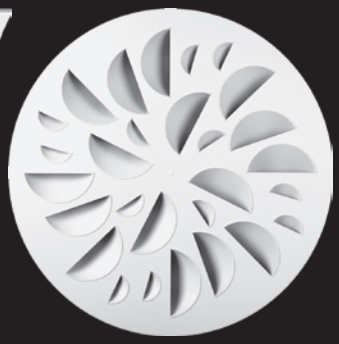
Other RAL finishes available upon request, please ask for a quote

# DIFFUSERS

ARCHITECTURE - COMFORT - EFFICIENCY - IAQ



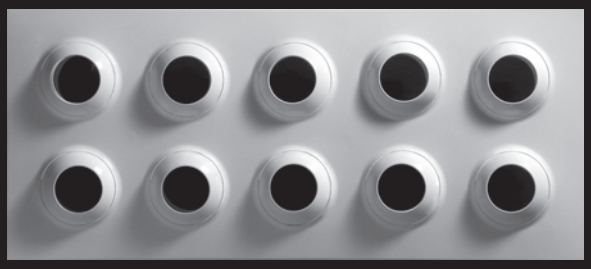






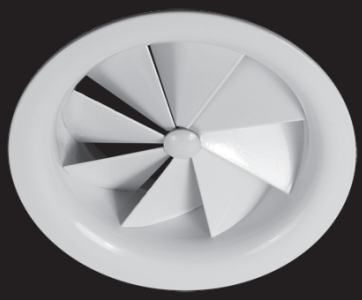














EFFECTIV™





# AX6

## Adjustable Aluminum Round Swirl Diffusers

EFFECTIV™

March 8, 2023

# AX6 SERIES
## Aluminum Adjustable Round Swirl Diffusers



**AX6**
**by MADEL®**

- Synchronously adjustable blades, horizontal to vertical airflow
- Manual adjustment, thermodynamic or with actuator
- Available with optional security grille for sports facilities
- Integrated air equalizer
- Heavy-gauge spun aluminum construction
- Duct mounted or drywall mounted
- Commercial and industrial applications
- Huge energy savings in heating and cooling applications with high ceilings

AX6 series swirl diffusers by EffectiV HVAC™ and MADEL® are designed to supply air in heating, air conditioning and ventilation applications, in premises with ceilings 8.5 feet (2.6 meters) and higher and with temperature differential up to 27ºF (15ºC). They are suitable for both industrial use and commercial areas.

Their round shape together with the helical design of their vanes cause a swirl diffusion of the air stream, obtaining a high induction rate and reducing the stratification.

The diffusion of the air can be varied by adjusting the supply air angle of the synchronously adjustable blades, changing from horizontal projection to vertical projection in accordance with the supply air temperature.

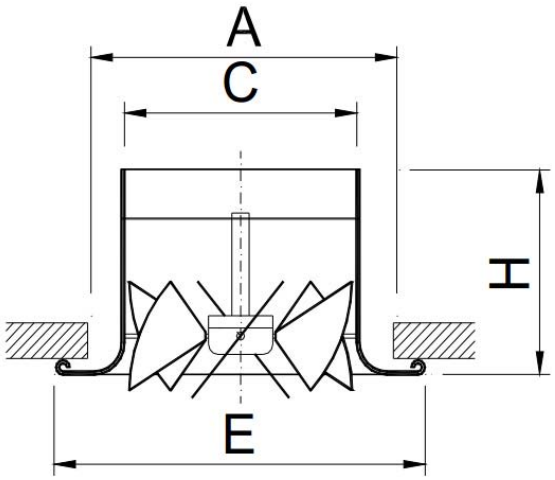
They can be mounted in false ceilings or ductwork or suspended from the ceiling.



| Neck Diameter | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 10” (250 mm) | 0.527 | 310 | 580 |
| 12.5” (315 mm) | 0.839 | 500 | 755 |
| 16” (400 mm) | 1.345 | 800 | 1295 |
| 20” (500 mm) | 2.11 | 1175 | 1765 |
| 25” (630 mm) | 3.358 | 1980 | 2945 |

## AX6 Dimensions

| | Duct Diameter | A | C | E | H |
|---|---|---|---|---|---|
| Imperial | 10” | 11 13/16 | 9 3/4 | 14 11/64 | 7 61/64 |
| | 12.5” | 15 3/4 | 12 21/64 | 18 17/64 | 8 55/64 |
| | 16” | 19 11/16 | 15 25/32 | 20 3/64 | 9 27/32 |
| | 20” | 24 13/32 | 19 9/16 | 27 11/64 | 12 3/64 |
| | 25” | 30 45/64 | 24 11/16 | 34 1/4 | 13 25/32 |
| Metric | 250 mm | 300 | 248 | 360 | 202 |
| | 315 mm | 400 | 313 | 464 | 225 |
| | 400 mm | 500 | 401 | 560 | 250 |
| | 500 mm | 620 | 497 | 690 | 306 |
| | 630 mm | 780 | 627 | 870 | 350 |




## Some Applications

- Restaurants, Bars, Hotels
- Indoor Pools and aquatic complex
- Movie Theaters
- Entrance halls (vertical blast)
- Gymnasiums and sports facilities
- Warehouses
- Seasonal heating and/or cooling
- Open ceilings/exposed ducts
- High ceilings
- Energy efficiency requirements
- Industrial applications
- Comfort-critical applications



# Available Adjustment Mechanisms

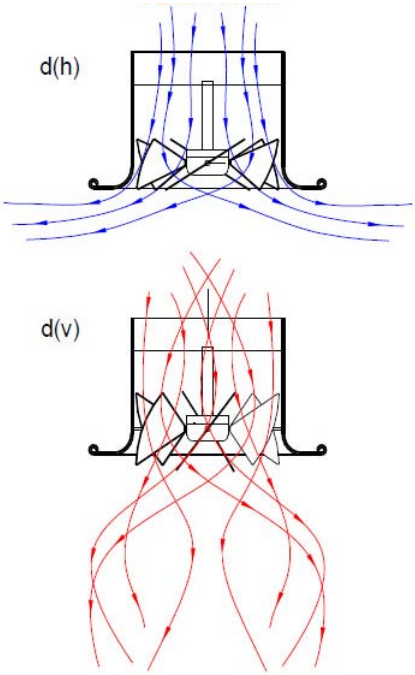
## AX6-MA

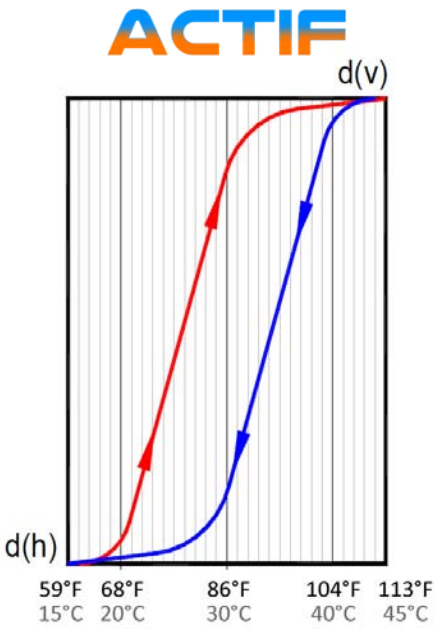
Synchronically adjustable blades, manually operated.

## AX6-ACTIF

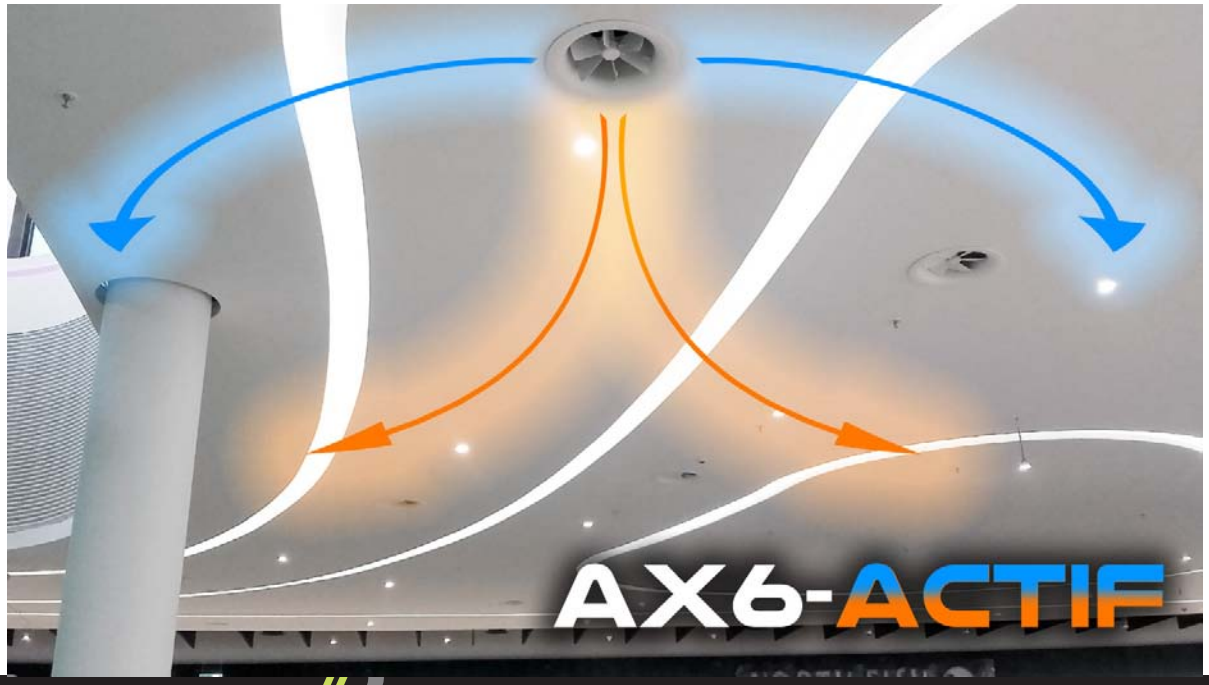
Synchronically adjustable blades, autonomous thermal adjustment in reaction to supplied air temperature, by means of a thermodynamic piston.

*Energy Efficiency Product*



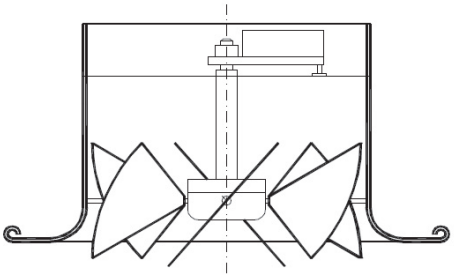




30 minutes adjustment time from
d(h) to d(v)
d(h) = 30 Degree Blades Adjustment
d(v) = 60 Degree Blades Adjustment



## AX6-MO

Synchronically adjustable blades by means of an actuator.



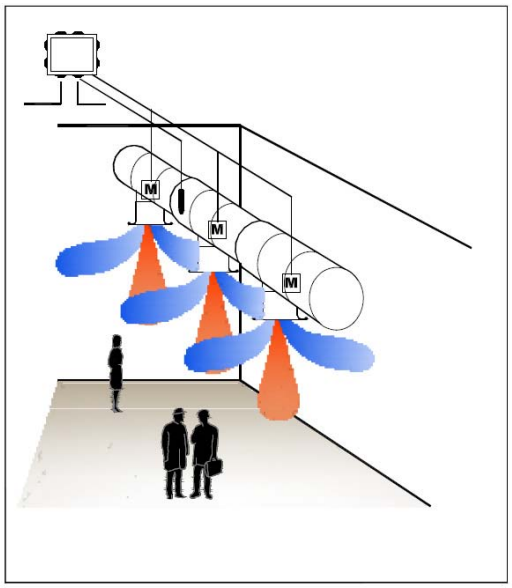
### Available With...

Belimo On/Off Actuator, 24V or 230V

Belimo Proportional Actuator, 24V

Siemens On/Off Actuator, 24V or 230V

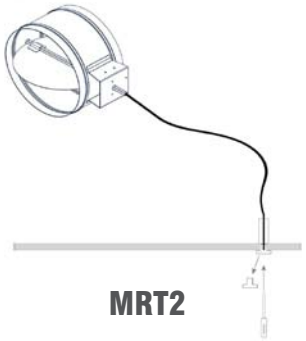
Siemens Proportional Actuator, 24V




## Integrated Air Volume Dampers

EB2 dampers are recommended for AX6 diffusers installed in high ceilings.

There is no maximum cable length for EB2 dampers, they can be adjusted from anywhere in the room or from the mechanical room.



**MRT2**

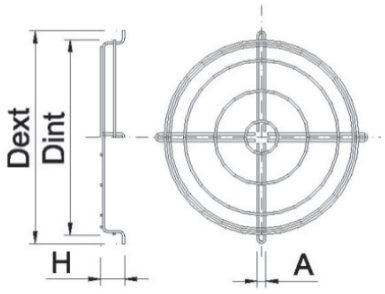
Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

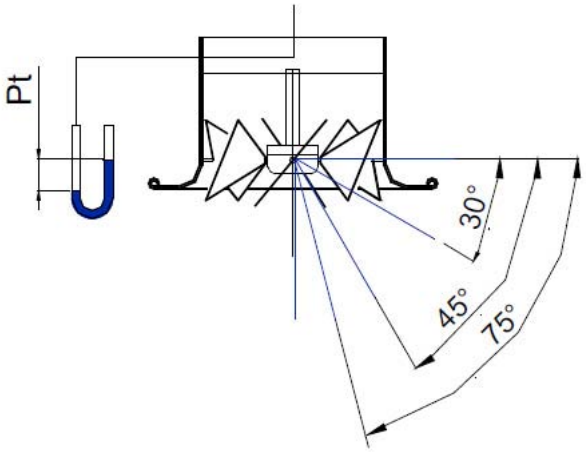
## Optional Security Grille For Sports Facilities

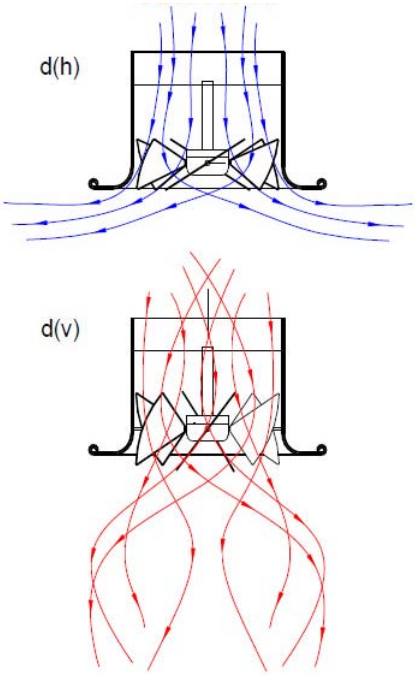



**CH6 for AX6**

| | Duct Diameter | Dext | Dint | A | H |
|---|---|---|---|---|---|
| Imperial | 10” | 13 25/32” | 11 13/16” | 35/64” | 1 37/64” |
| | 12.5” | 17 23/32” | 15 3/4” | 35/64” | 1 37/64” |
| | 16” | 21 21/32” | 19 11/16” | 43/64” | 1 31/32” |
| | 20” | 25 25/32” | 23 5/8” | 43/64” | 3 5/32” |
| | 25” | 33 55/64” | 31 7/64” | 25/32” | 3 35/64” |
| Metric | 250 mm | 350 | 300 | 14 | 40 |
| | 315 mm | 450 | 400 | 14 | 40 |
| | 400 mm | 550 | 500 | 17 | 50 |
| | 500 mm | 655 | 600 | 17 | 80 |
| | 630 mm | 860 | 790 | 20 | 90 |

## AX6 Performance Data




## Isothermal Throw - Swirl 30 Degree Blade Adjustment

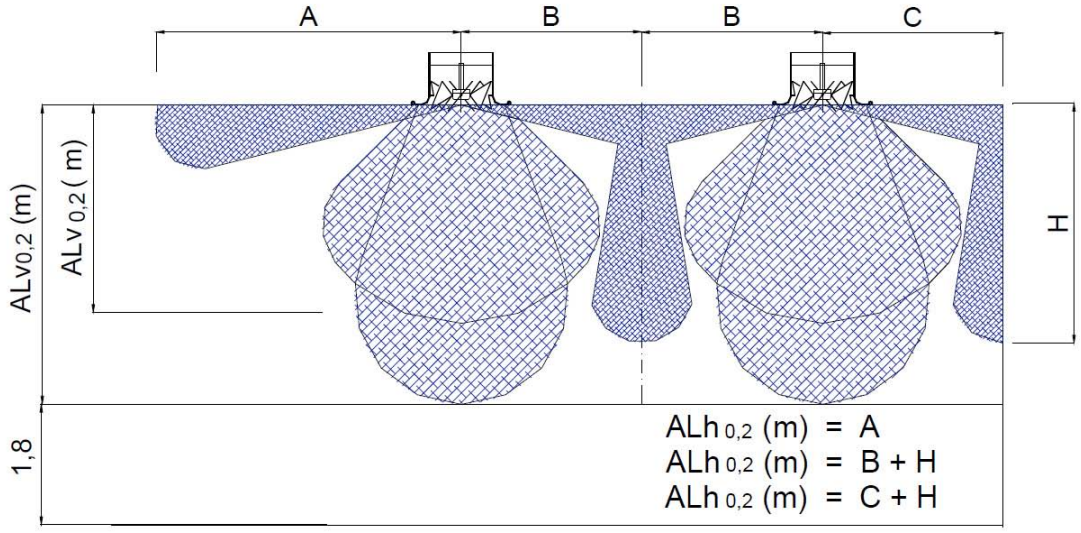
ACTIF Cooling

| Neck Size | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 10” (250mm) | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 |
| | Pressure Loss (in.w.g.) | 0.161 | 0.258 | 0.376 | 0.522 | 0.687 | 1.099 | 1.099 | 2.227 |
| | NC | 21 | 27 | 31 | 35 | 38 | 44 | 48 | 52 |
| | Throw (ft) - d(h) | 3-6-8 | 4-7-11 | 5-9-13 | 6-10-15 | 7-12-18 | 9-15-23 | 11-19-28 | 13-22-33 |
| 12.5” (315mm) | CFM | 335 | 419 | 503 | 587 | 671 | 839 | 1006 | 1174 |
| | Pressure Loss (in.w.g.) | 0.117 | 0.185 | 0.269 | 0.37 | 0.488 | 0.774 | 1.125 | 1.546 |
| | NC | 19 | 25 | 31 | 35 | 39 | 45 | 50 | 54 |
| | Throw (ft) - d(h) | 4-7-10 | 5-8-12 | 5-9-13 | 6-10-15 | 7-11-16 | 8-13-19 | 9-15-22 | 10-17-25 |
| 16” (400mm) | CFM | 559 | 698 | 838 | 977 | 1117 | 1396 | 1676 | 1955 |
| | Pressure Loss (in.w.g.) | 0.111 | 0.174 | 0.251 | 0.342 | 0.448 | 0.702 | 1.015 | 1.384 |
| | NC | < 15 | 21 | 27 | 31 | 35 | 42 | 48 | 53 |
| | Throw (ft) - d(h) | 5-8-11 | 5-9-13 | 6-10-14 | 6-10-16 | 7-11-17 | 8-13-19 | 8-14-21 | 9-15-23 |
| 20” (500mm) | CFM | 873 | 1091 | 1309 | 1527 | 1745 | 2182 | 2618 | 3054 |
| | Pressure Loss (in.w.g.) | 0.139 | 0.213 | 0.301 | 0.403 | 0.519 | 0.795 | 1.123 | 1.506 |
| | NC | 26 | 31 | 34 | 37 | 40 | 44 | 48 | 51 |
| | Throw (ft) - d(h) | 5-8-13 | 6-10-15 | 7-11-17 | 8-13-19 | 8-14-21 | 10-16-24 | 11-18-27 | 12-20-31 |
| 25” (630mm) | CFM | 1320 | 1650 | 1980 | 2310 | 2641 | 3301 | 3961 | 4621 |
| | Pressure Loss (in.w.g.) | 0.165 | 0.26 | 0.375 | 0.512 | 0.671 | 1.053 | 1.522 | 2.077 |
| | NC | 21 | 26 | 30 | 34 | 37 | 43 | 47 | 51 |
| | Throw (ft) - d(h) | 5-9-14 | 7-11-17 | 8-13-20 | 9-15-22 | 10-17-25 | 12-21-31 | 15-24-36 | 17-28-42 |

**Performance Notes**

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

## Downward Projection of Heated Air




$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

## Downward Projection of Heated Air - 45 Degree Blade Adjustment

| Neck Size | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 10" (250mm) | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 |
| | Pressure Loss (in.w.g.) | 0.097 | 0.156 | 0.23 | 0.322 | 0.426 | 0.687 | 1.015 | 1.415 |
| | NC | < 15 | 20 | 26 | 32 | 36 | 44 | 51 | 56 |
| | Vertical Throw (ft) - d(v) | 14-7-6-5 | 16-8-7-6 | 19-9-8-6 | 21-11-9-7 | 24-12-10-8 | 29-14-12-10 | 33-17-14-11 | 37-19-16-13 |
| 12.5" (315mm) | CFM | 335 | 419 | 503 | 587 | 671 | 839 | 1006 | 1174 |
| | Pressure Loss (in.w.g.) | 0.084 | 0.132 | 0.192 | 0.264 | 0.348 | 0.55 | 0.798 | 1.096 |
| | NC | < 15 | 18 | 26 | 32 | 37 | 47 | 54 | 61 |
| | Vertical Throw (ft) - d(v) | 12-7-5-4 | 16-9-7-5 | 19-12-9-6 | 23-14-10-7 | 27-16-12-8 | 35-20-15-10 | 42-25-19-12 | 50-30-22-15 |
| 16" (400mm) | CFM | 559 | 698 | 838 | 977 | 1117 | 1396 | 1676 | 1955 |
| | Pressure Loss (in.w.g.) | 0.064 | 0.1 | 0.145 | 0.197 | 0.259 | 0.406 | 0.587 | 0.8 |
| | NC | < 15 | 19 | 23 | 28 | 31 | 37 | 42 | 46 |
| | Vertical Throw (ft) - d(v) | 14-10-8-6 | 17-12-9-7 | 20-14-11-8 | 22-16-13-9 | 25-18-14-11 | 30-21-17-13 | 35-25-20-15 | 40-28-22-17 |
| 20" (500mm) | CFM | 873 | 1091 | 1309 | 1527 | 1745 | 2182 | 2618 | 3054 |
| | Pressure Loss (in.w.g.) | 0.105 | 0.162 | 0.23 | 0.309 | 0.4 | 0.616 | 0.875 | 1.178 |
| | NC | 24 | 29 | 33 | 37 | 40 | 45 | 49 | 52 |
| | Vertical Throw (ft) - d(v) | 15-9-8-6 | 18-11-9-8 | 20-13-11-9 | 23-15-12-10 | 25-16-13-11 | 30-19-16-13 | 35-22-18-15 | 39-25-21-17 |
| 25" (630mm) | CFM | 1320 | 1650 | 1980 | 2310 | 2641 | 3301 | 3961 | 4621 |
| | Pressure Loss (in.w.g.) | 0.082 | 0.129 | 0.187 | 0.257 | 0.338 | 0.533 | 0.773 | 1.059 |
| | NC | 17 | 24 | 29 | 33 | 37 | 43 | 48 | 53 |
| | Vertical Throw (ft) - d(v) | 18-11-8-6 | 21-13-10-7 | 25-15-12-8 | 28-17-13-9 | 32-19-15-10 | 38-23-18-13 | 45-27-21-15 | 51-31-24-17 |

**Performance Notes**

- Vertical throw values (in ft) are respectively for **isothermal** and temperature differences of **9°F (5°C), 18°F (10°C)** and **27°F (15°C)** in heating mode, all at **terminal velocity of 40 fpm**.

# Downward Projection of Heated Air - 60 Degree Blade Adjustment

ACTIF Heating

| Neck Size | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 10” (250mm) | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 |
| | Pressure Loss (in.w.g.) | 0.073 | 0.118 | 0.173 | 0.242 | 0.32 | 0.517 | 0.763 | 1.064 |
| | NC | < 15 | 19 | 24 | 28 | 32 | 38 | 43 | 48 |
| | Vertical Throw (ft) - d(v) | 24-12-10-8 | 28-14-12-10 | 33-16-14-11 | 37-19-16-13 | 41-21-17-14 | 50-25-21-17 | 58-29-24-20 | 65-33-27-22 |
| 12.5” (315mm) | CFM | 335 | 419 | 503 | 587 | 671 | 839 | 1006 | 1174 |
| | Pressure Loss (in.w.g.) | 0.065 | 0.102 | 0.149 | 0.205 | 0.269 | 0.426 | 0.619 | 0.849 |
| | NC | < 15 | 19 | 26 | 31 | 36 | 44 | 50 | 56 |
| | Vertical Throw (ft) - d(v) | 23-14-10-7 | 30-18-13-9 | 36-21-16-11 | 43-26-19-13 | 50-30-22-15 | 65-38-28-19 | 79-47-35-23 | 94-56-41-27 |
| 16” (400mm) | CFM | 559 | 698 | 838 | 977 | 1117 | 1396 | 1676 | 1955 |
| | Pressure Loss (in.w.g.) | 0.053 | 0.083 | 0.12 | 0.163 | 0.214 | 0.335 | 0.485 | 0.661 |
| | NC | < 15 | 17 | 21 | 25 | 28 | 34 | 38 | 42 |
| | Vertical Throw (ft) - d(v) | 25-17-14-10 | 30-21-17-12 | 35-24-19-15 | 39-28-22-17 | 44-31-25-18 | 53-37-30-22 | 62-43-35-26 | 70-49-39-29 |
| 20” (500mm) | CFM | 873 | 1091 | 1309 | 1527 | 1745 | 2182 | 2618 | 3054 |
| | Pressure Loss (in.w.g.) | 0.078 | 0.12 | 0.17 | 0.229 | 0.296 | 0.456 | 0.648 | 0.034 |
| | NC | 23 | 28 | 33 | 36 | 40 | 45 | 50 | 54 |
| | Vertical Throw (ft) - d(v) | 25-16-13-11 | 29-19-16-13 | 34-21-18-14 | 38-24-20-16 | 42-27-22-18 | 50-32-27-21 | 58-36-31-25 | 65-41-34-28 |
| 25” (630mm) | CFM | 1320 | 1650 | 1980 | 2310 | 2641 | 3301 | 3961 | 4621 |
| | Pressure Loss (in.w.g.) | 0.073 | 0.115 | 0.167 | 0.229 | 0.301 | 0.476 | 0.69 | 0.946 |
| | NC | 17 | 23 | 29 | 33 | 37 | 43 | 49 | 53 |
| | Vertical Throw (ft) - d(v) | 44-26-20-14 | 53-32-24-17 | 61-37-29-20 | 70-42-33-23 | 79-47-37-26 | 95-57-44-31 | 111-66-52-37 | 126-76-59-42 |

**Performance Notes**

- Vertical throw values (in ft) are respectively for **isothermal** and temperature differences of **9°F (5°C), 18°F (10°C)** and **27°F (15°C)** in heating mode, all at **terminal velocity of 40 fpm**.

## How to Specify AX6-MA

Supply and mounting of manually adjustable round swirl diffuser AX6-MA with synchronously adjustable blades and integrated air equalizer. Constructed from aluminum powder coated in white M9016. By EffectiV HVAC.

## How to Specify AX6-ACTIF

Supply and mounting of round swirl diffuser AX6-ACTIF with autonomously thermally adjustable blades by means of a thermodynamic piston. Comes with integrated air equalizer. Constructed from aluminum powder coated in white M9016. By EffectiV HVAC.

## How to Specify AX6-MO

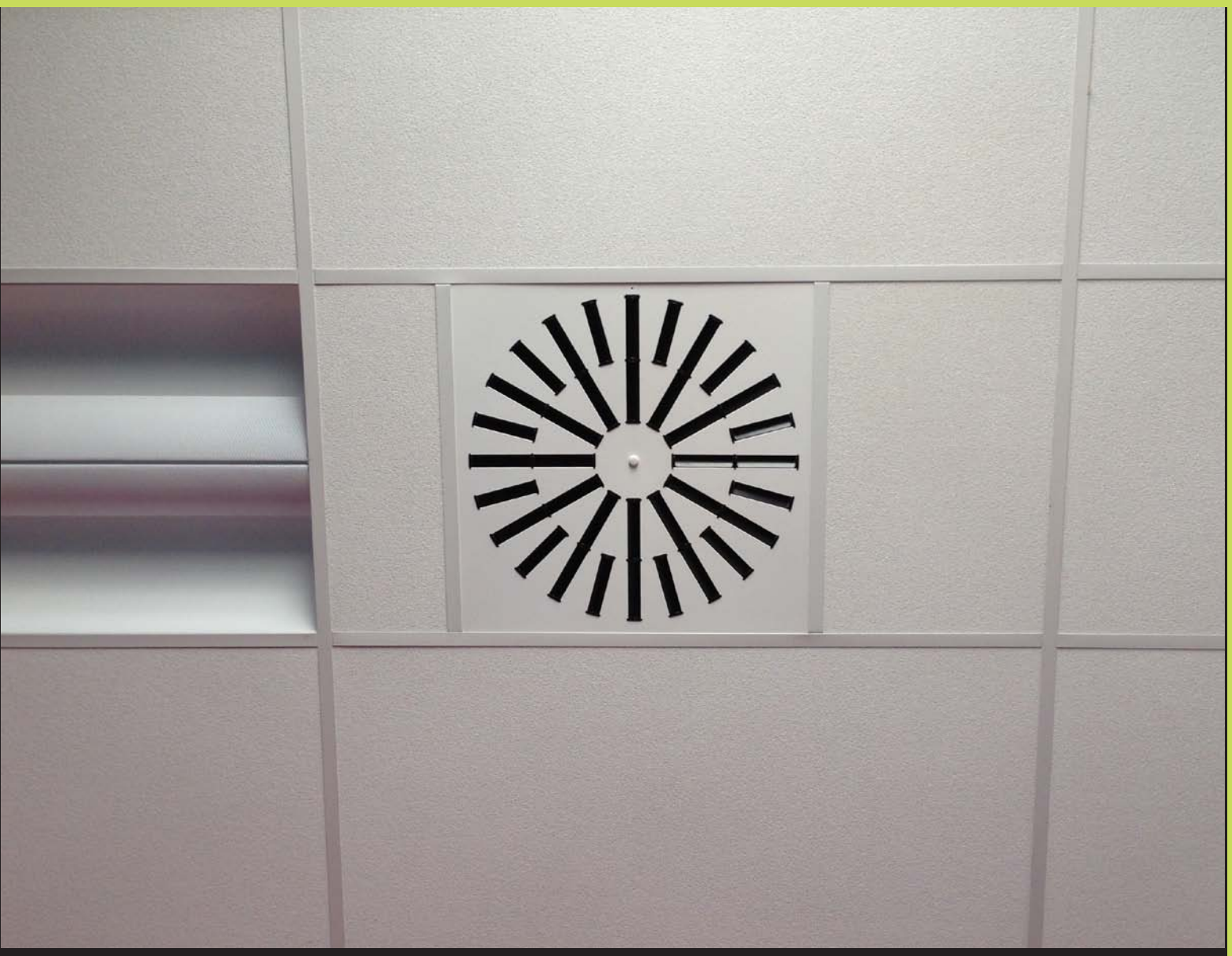
Supply and mounting of round swirl diffuser AX6-ACTIF with synchronously adjustable blades by means of an actuator. Comes with integrated air equalizer. Constructed from aluminum powder coated in white M9016. By EffectiV HVAC.

## How to Order AX6 Series

| AX6 | -MA | -CH6 | 08 | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Imperial | | Metric | |
| | | | | Neck Diameter | 10 | 10”D | 250 | 250 mm |
| | | | | | 12 | 12.5”D | 315 | 315 mm |
| | | | | | 16 | 16”D | 400 | 400 mm |
| | | | | | 20 | 20”D | 500 | 500 mm |
| | | | | | 25 | 25”D | 630 | 630 mm |
| | | | Security Grille | | CH6 | Security grille for sports facilities | | |
| | | | | | MA | Manually adjustable | | |
| | | | | Adjustment Method | MO | Adjusted by means of an actuator | | |
| | | | | | ACTIF | Automatic thermal adjustment | | |


NA KOŃCU TĘCZY





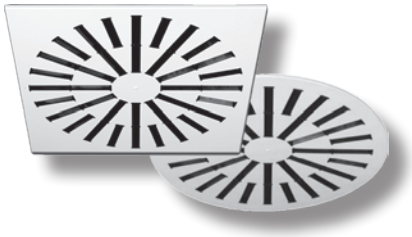
# AXO

## Adjustable Vanes High Induction Swirl Diffusers

EFFECTIV™

Nov 29 2021

# AXO SERIES
## Adjustable Vanes High Induction Swirl Diffusers



**AXO-S & AXO-C**
**by MADEL®**

- Individually adjustable high induction mixing vanes, available in black or white
- Multiple pattens available of optimal supply between 50 cfm and 600 cfm
- Adjustable to swirl, horizontal, vertical or directional
- High tolerance to air volume variations, temperature variations and duct angle
- High air flow at relatively low sound power
- High induction causes rapid reduction of air velocity and temperature difference
- Square and round shapes available in multiple dimensions and patterns
- Lay-in, duct mounted or drywall mounted, suitable for all ceilings
- Heavy-gauge steel or aluminum face construction with ABS vanes
- Matching high-performance PERFAIR plenums, choice of top or side connection
- PERFAIR have built-in anti-seismic attachment tabs & air equalizer/volume damper

AXO swirl diffusers by EffectiV HVAC™ and MADEL® are designed to be applied in air conditioning, ventilation and 1 1/10 heating systems. The design of their vanes and radial arrangement supplies the air in a swirl pattern while leveraging the coanda effect. The resulting high induction ratio helps reduce stratification.

The individually adjustable vanes support multiple angles to adapt the airflow to virtually any environment. The sectored vanes, combined with a PERFAIR high-performance plenum mixing box, emit a uniform airflow throughout the passage section.

The AXO series diffusers admit a flow variation of 60% while keeping the air stream stable. For optimal conditions, AXO diffusers may be used in ceilings 8.5 up to 13 feet (2.6 up to 4 meters) high, with a temperature differential up to 22ºF (12ºC).

The air pattern adjustability, high level of induction rate and reduced air stratification allow for designs with a much higher level of comfort and provide opportunities for significant energy savings.

The face and plenum box are ordered separately and attached together with a screw through the face which is fixed in the plenum crossbar.

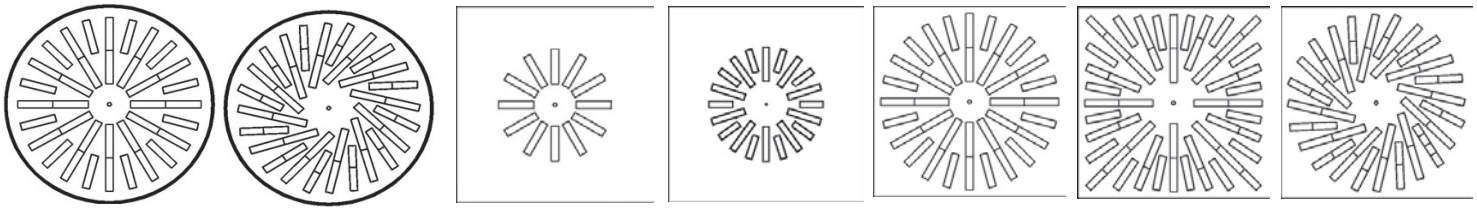
AXO vanes are made of ABS tested in accordance to UL 94 HB *Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances - Horizontal Burning Test*

## Some Applications

- Ideal when comfort and energy efficiency matter
- Office buildings
- Schools
- Clean rooms
- Classrooms
- Meeting rooms
- Cafeterias and restaurants
- Entrance halls (vertical blast)
- Multi-purpose rooms



## Quick Selection



AXO-C AXO-CY AXO-S300 AXO-S400 AXO-S AXO-SX AXO-SY

| Circular Models Selection | Min cfm | Max cfm |
|---|---|---|
| AXO-C 12 (300 mm) | 50 | 130 |
| AXO-C 16 (400 mm) | 100 | 250 |
| AXO-C 20 (500 mm) | 150 | 330 |
| AXO-C 25, AXO-CY 25 (625 mm) | 230 | 500 |
| AXO-C 33 (825 mm) | 360 | 600 |

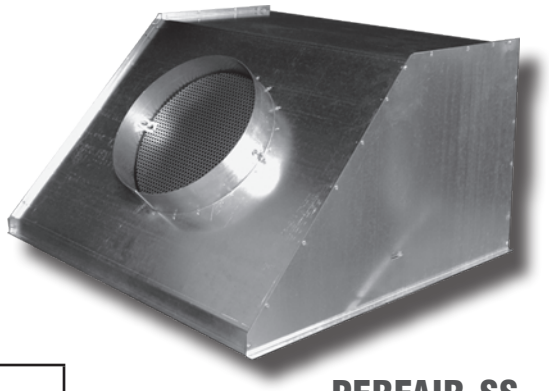
| Square Models Selection | Min cfm | Max cfm |
|---|---|---|
| AXO-S 12 (300 mm) | 50 | 130 |
| AXO-S 16 (400 mm) | 100 | 250 |
| AXO-S 20 (500 mm) | 155 | 330 |
| AXO-S300 24 (610 mm) | 50 | 160 |
| AXO-S400 24 (610 mm) | 100 | 250 |
| AXO-S 24, AXO-SY 24 (610 mm) | 230 | 500 |
| AXO-SX 24 (610 mm) | 300 | 550 |
| AXO-S 32 (800 mm) | 360 | 600 |

**Important Note: Min cfm and Max cfm are recommended values for optimal performance and can be exceeded in VAV applications.**

## Plenum Selection

AXO swirl diffusers are available with a wide selection of PERFAIR plenums to suit any type of application. PERFAIR-SS with side connection is the most popular plenum for Square Diffusers and only requires 14" of ceiling space.

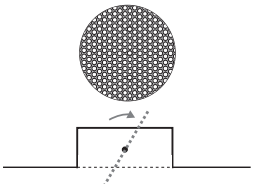
All PERFAIR plenums come with antiseismic tabs and perforated air volume damper / air equalizer.



**PERFAIR-SS**

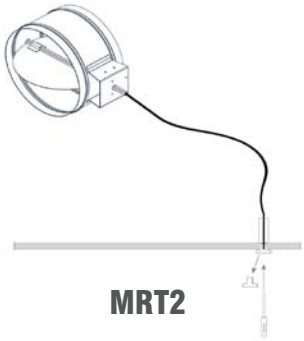
| Plenum Model | Face Type | Connection | Recommended For |
|---|---|---|---|
| PERFAIR-CS | Round | Side | False or closed ceiling |
| PERFAIR-CT | Round | Top | Open ceiling with visible duct coming from top |
| PERFAIR-SS | Square | Side, Angle | False or closed ceiling |
| PERFAIR-SSS | Square | Side | Open ceiling with visible duct coming from side |
| PERFAIR-ST | Square | Top | Open ceiling with visible duct coming from top |
| PERFAIR-XS | Square | Side, Oval | Very limited ceiling space (6" min) |
| PERFAIR-XSS | Square | Side, Rect. | Very limited ceiling space (5" min) |

## Integrated Air Volume Dampers



**R**

Perforated damper + air equalizer (Standard)



**MRT2**

Manually operated damper, cable through wall with termination fixture



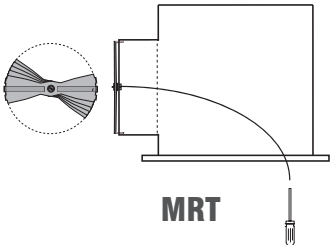
**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through wall with termination fixture

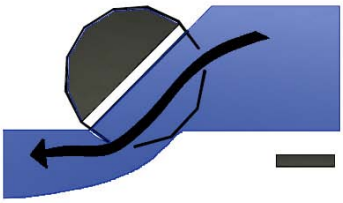


**MRT**

Manually operated damper, cable inside the plenum, adjustment through face

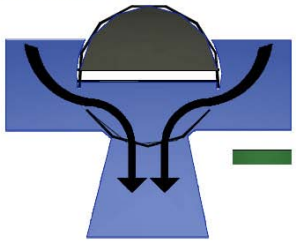
# AXO Vanes Positioning

HORIZONTAL SUPPLY.
POSITION 1.

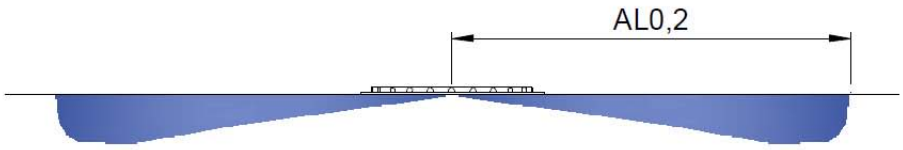


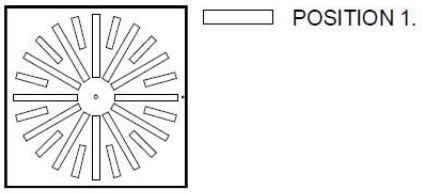


VERTICAL SUPPLY.
POSITION 2.

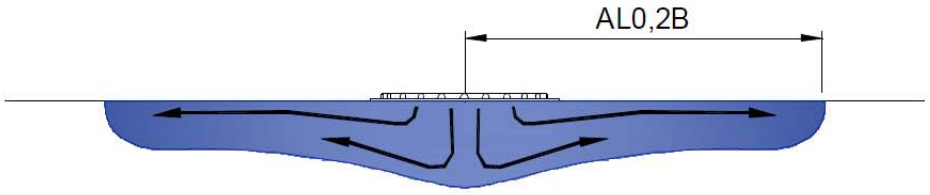


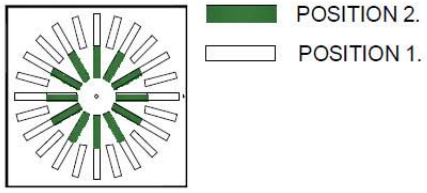
TYPE A. 100% POSITION 1.




TYPE B. 50% POSITION 1 AND 50% POSITION 2.




$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

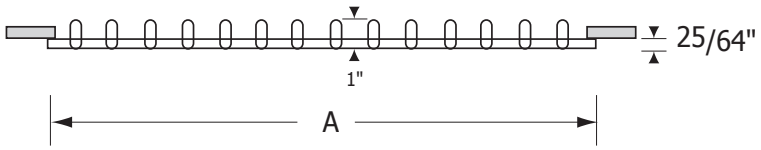
# AXO-C Round Diffuser, Radial Vanes



AXO-C

| Dim | A (Imperial) | A (Metric) | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|---|---|
| 12'' (300mm) | 11 39/64" | 295 mm | 0.103 | 50 | 130 |
| 16'' (400mm) | 15 35/34" | 395 mm | 0.216 | 100 | 250 |
| 20'' (500mm) | 19 31/64" | 495 mm | 0.312 | 150 | 330 |
| 25'' (625mm) | 24 13/32" | 620 mm | 0.47 | 230 | 500 |
| 32'' (825mm) | 32 9/32" | 825mm | 0.73 | 360 | 600 |

**Min cfm and Max cfm are recommended values for optimal performance and can be exceeded in VAV applications.**




# AXO-C 12 (AXO-C 300) + PERFAIR Performance Data

**AXO-C 12** (Imperial), Swirl Effect **AXO-C 300** (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.041 | 0.062 |
| 5 | CFM | 27 | 41 | 55 | 68 | 82 | 95 | 109 | 136 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.02 | 0.03 | 0.05 | 0.07 | 0.09 | 0.12 | 0.181 |
| | NC | < 15 | < 15 | < 15 | 17 | 22 | 25 | 29 | 35 |
| | Throw (ft) - Coanda Effect | 1-2-2 | 1-2-4 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-9 | 5-8-11 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 1-2-3 | 1-2-3 | 2-3-4 | 2-4-5 | 2-4-6 | 3-5-7 | 4-6-9 |
| 6 | CFM | 39 | 59 | 79 | 98 | 118 | 137 | | |
| | Pressure Loss (in.w.g.) | 0.02 | 0.04 | 0.06 | 0.1 | 0.14 | 0.18 | | |
| | NC | < 15 | < 15 | 21 | 26 | 31 | 35 | | |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-3-5 | 3-4-7 | 3-6-8 | 4-7-10 | 5-8-11 | | |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-3-5 | 3-4-6 | 3-5-8 | 4-6-9 | | |
| 8 | CFM | 70 | 105 | 140 | | | | | |
| | Pressure Loss (in.w.g.) | 0.06 | 0.1 | 0.185 | | | | | |
| | NC | 17 | 28 | 37 | | | | | |
| | Throw (ft) - Coanda Effect | 2-4-6 | 4-6-9 | 5-8-11 | | | | | |
| | Throw (ft) - No Ceiling Effect | 2-3-4 | 3-4-7 | 3-6-9 | | | | | |

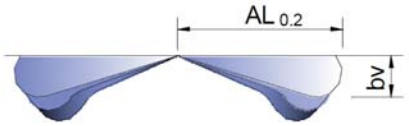
**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

# AXO-C 12 (AXO-C 300) + PERFAIR Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 12''D (300mm) | Pressure Loss | x 1 | x 1.2 | x.2.4 |
| | NC | +0.7 | +1.1 | +2.4 |

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | |
|---|---|---|
| **Throw (ft)** | i | Delta T Ratio |
| **4** | 10 | 0.046 |
| **6** | 17 | 0.028 |
| **8** | 23 | 0.022 |
| **10** | 29 | 0.017 |
| **15** | 48 | - |
| **20** | 65 | - |
| **25** | 100 | - |
| **30** | 125 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# AXO-C 16 (AXO-C 400) + PERFAIR Performance Data

**AXO-C 16** (Imperial) Swirl Effect **AXO-C 400** (Metric)

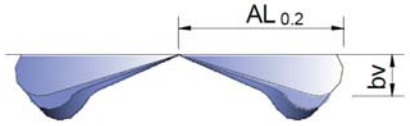
| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | 59 | 79 | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | 0.009 | 0.016 | 0.025 | 0.035 | 0.046 | 0.06 | 0.092 |
| | NC | | < 15 | < 15 | < 15 | < 15 | 17 | 21 | 26 |
| | Throw (ft) - Coanda Effect | | 1-2-3 | 2-3-4 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 |
| | Throw (ft) - No Ceiling Effect | | 1-2-2 | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 |
| 8 | CFM | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | 0.013 | 0.028 | 0.048 | 0.074 | 0.104 | 0.139 | 0.18 | 0.276 |
| | NC | < 15 | < 15 | 16 | 21 | 25 | 29 | 32 | 38 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-4-6 | 3-5-8 | 4-7-10 | 5-8-12 | 5-9-14 | 6-10-16 | 8-13-19 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-4-6 | 3-5-7 | 3-6-9 | 4-7-10 | 5-8-12 | 6-10-15 |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 16"D (400mm) | Pressure Loss | x 1 | x 1.2 | x 2.3 |
| | NC | +0.8 | +1.5 | +2.9 |

| **Delta T Correction Factors** | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| **Ratios** | | |
|---|---|---|
| **Throw (ft)** | i | Delta T Ratio |
| **4** | 7 | 0.052 |
| **6** | 13 | 0.034 |
| **8** | 18 | 0.026 |
| **10** | 24 | 0.019 |
| **15** | 39 | - |
| **20** | 55 | - |
| **25** | 72 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# AXO-C 20 (AXO-C 500) + PERFAIR Performance Data

**AXO-C 20** (Imperial) Swirl Effect **AXO-C 500** (Metric)

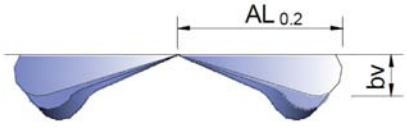
| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 |
| 6 | CFM | | 98 | 118 | 137 | 157 | 196 | 236 |
| | Pressure Loss (in.w.g.) | | 0.015 | 0.021 | 0.028 | 0.036 | 0.055 | 0.079 |
| | NC | | < 15 | < 15 | < 15 | < 15 | 19 | 24 |
| | Throw (ft) - Coanda Effect | | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-11 |
| | Throw (ft) - No Ceiling Effect | | 1-2-3 | 2-3-4 | 2-3-5 | 2-3-5 | 3-4-7 | 3-5-8 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 |
| | Pressure Loss (in.w.g.) | 0.029 | 0.045 | 0.062 | 0.084 | 0.108 | 0.166 | 0.281 |
| | NC | < 15 | 17 | 21 | 25 | 28 | 34 | 40 |
| | Throw (ft) - Coanda Effect | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-10-16 | 8-13-19 |
| | Throw (ft) - No Ceiling Effect | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-9 | 5-8-12 | 6-10-14 |
| 10 | CFM | 218 | 273 | 327 | 382 | | | |
| | Pressure Loss (in.w.g.) | 0.068 | 0.104 | 0.147 | 0.198 | | | |
| | NC | 22 | 28 | 32 | 36 | | | |
| | Throw (ft) - Coanda Effect | 4-6-10 | 5-8-12 | 6-10-15 | 7-11-17 | | | |
| | Throw (ft) - No Ceiling Effect | 3-5-7 | 4-6-9 | 4-7-11 | 5-8-13 | | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 20"D (500mm) | Pressure Loss | x 1 | x 1.4 | x 4 |
| | NC | +0.8 | +2.1 | +2.8 |

| **Delta T Correction Factors** | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

# AXO-C 20 (AXO-C 500) + PERFAIR Performance Data (continued)

| Ratios | | | |
|---|---|---|---|
| **Throw (ft)** | i (type A) | i (type B) | Delta T Ratio |
| **4** | 6 | 9 | 0.082 |
| **6** | 12 | 17 | 0.047 |
| **8** | 16 | 24 | 0.035 |
| **10** | 20 | 30 | 0.028 |
| **15** | 33 | 50 | 0.018 |
| **20** | 46 | 73 | 0.01 |
| **25** | 58 | 97 | |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# AXO-C 25 (AXO-C 625) + PERFAIR Performance Data

**AXO-C 25** (Imperial) Swirl Effect **AXO-C 625** (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 6 | CFM | | 98 | 118 | 137 | 157 | 196 | 236 | 275 |
| | Pressure Loss (in.w.g.) | | 0.008 | 0.011 | 0.015 | 0.019 | 0.029 | 0.041 | 0.055 |
| | NC | | < 15 | < 15 | < 15 | < 15 | < 15 | 18 | 21 |
| | Throw (ft) - Coanda Effect | | 1-2-4 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 |
| | Throw (ft) - No Ceiling Effect | | 1-2-3 | 1-2-3 | 2-3-4 | 2-3-4 | 2-4-6 | 3-4-7 | 3-5-8 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 |
| | Pressure Loss (in.w.g.) | 0.015 | 0.023 | 0.033 | 0.044 | 0.057 | 0.087 | 0.124 | 0.166 |
| | NC | < 15 | < 15 | 16 | 19 | 21 | 26 | 30 | 33 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-10 | 5-9-13 | 6-10-16 | 7-12-18 |
| | Throw (ft) - No Ceiling Effect | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-7-10 | 5-8-12 | 6-9-14 |
| 10 | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 |
| | Pressure Loss (in.w.g.) | 0.036 | 0.055 | 0.077 | 0.104 | 0.133 | 0.205 | 0.29 | 0.39 |
| | NC | 16 | 21 | 25 | 28 | 30 | 35 | 40 | >40 |
| | Throw (ft) - Coanda Effect | 3-5-8 | 4-7-10 | 5-8-12 | 6-10-14 | 7-11-16 | 8-14-21 | 10-16-25 | 12-19-29 |
| | Throw (ft) - No Ceiling Effect | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-10-15 | 7-12-19 | 9-14-22 |
| 12 | CFM | 314 | 393 | 471 | 550 | 628 | 785 | | |
| | Pressure Loss (in.w.g.) | 0.071 | 0.11 | 0.155 | 0.208 | 0.276 | 0.345 | | |
| | NC | 24 | 28 | 32 | 35 | 38 | 44 | | |
| | Throw (ft) - Coanda Effect | 5-8-12 | 6-10-15 | 7-12-18 | 8-14-21 | 9-15-23 | 12-19-29 | | |
| | Throw (ft) - No Ceiling Effect | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-16 | 7-11-17 | 9-14-22 | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

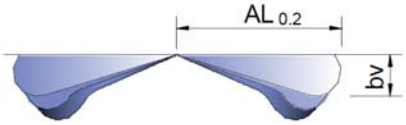
# AXO-C 25 (AXO-C 625) + PERFAIR Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 25''D (625mm) | Pressure Loss | x 1 | x 1.5 | x.4.8 |
| | NC | +0.9 | +5.8 | +7.7 |

| Type B Throw Correction Factor | |
|---|---|
| Dim | Correction Factor |
| 25"D | 0.74 |

Type B = 50% position 1, 50% position 2

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | | |
|---|---|---|---|
| **Throw (ft)** | i (type A) | i (type B) | Delta T Ratio |
| **4** | 5 | 7 | 0.115 |
| **6** | 9 | 14 | 0.068 |
| **8** | 12 | 19 | 0.052 |
| **10** | 16 | 25 | 0.04 |
| **15** | 26 | 42 | 0.027 |
| **20** | 37 | 60 | 0.02 |
| **25** | 47 | 60 | 0.016 |
| **30** | 60 | 100 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# AXO-C 33 (AXO-C 825) + PERFAIR Performance Data

**AXO-C 33** (Imperial) Swirl Effect **AXO-C 825** (Metric)

| Neck Size | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 12" (300mm) | CFM | 314 | 393 | 471 | 550 | 628 | 785 | 942 | 1100 |
| | Pressure Loss (in.w.g.) | 0.027 | 0.042 | 0.059 | 0.079 | 0.102 | 0.156 | 0.221 | 0.297 |
| | NC | 16 | 21 | 26 | 30 | 33 | 38 | 43 | 47 |
| | Throw (ft) - Coanda Effect | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-15 | 7-12-18 | 9-15-22 | 10-18-26 | 12-20-31 |
| | Throw (ft) - No Ceiling Effect | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-12 | 5-9-13 | 7-11-16 | 8-13-20 | 9-15-23 |

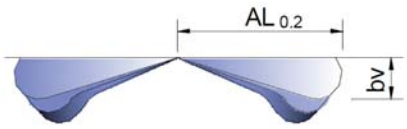
NC Value based on 10 db room attenuation.
Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 32''D (825mm) | Pressure Loss | x 1 | x 1.7 | x.4.5 |
| | NC | +0.9 | +4.4 | +7.8 |

| **Type B Throw Correction Factor** | |
|---|---|
| Dim | Correction Factor |
| 32''D (825mm) | 0.74 |

Type B = 50% position 1, 50% position 2

| **Delta T Correction Factors** | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| **Ratios** | | | |
|---|---|---|---|
| **Throw (ft)** | i (type A) | i (type B) | Delta T Ratio |
| **4** | < 5 | < 5 | 0.19 |
| **6** | 6 | 8 | 0.11 |
| **8** | 8 | 12 | 0.082 |
| **10** | 12 | 15 | 0.065 |
| **15** | 18 | 25 | 0.044 |
| **20** | 26 | 36 | 0.033 |
| **25** | 32 | 16 | 0.026 |
| **30** | 41 | 60 | 0.021 |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

## How to Specify AXO-C

Supply and mounting of circular high induction swirl diffuser with individually adjustable radial vanes model AXO-C. Constructed from galvanized steel face panel powder coated in white M9016, with ABS adjustable diffusion vanes featuring airflow straighteners on the back of the vanes. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

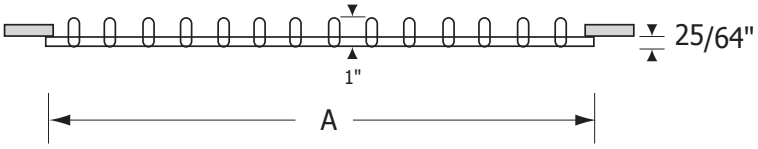
# AXO-CY Round Diffuser, Radial Inclined Vanes

| Dim | A (Imperial) | A (Metric) | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|---|---|
| 25'' (625mm) | 24 13/32" | 620 mm | 0.47 | 230 | 500 |

**Min cfm and Max cfm are recommended values for optimal performance and can be exceeded in VAV applications.**



**AXO-CY**




# AXO-CY + PERFAIR Performance Data

**AXO-CY 25** (Imperial) Swirl Effect **AXO-CY 625** (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 6 | CFM | 79 | 98 | 118 | 137 | 157 | 196 | 236 | 275 |
| | Pressure Loss (in.w.g.) | 0.017 | 0.026 | 0.035 | 0.047 | 0.061 | 0.091 | 0.126 | 0.188 |
| | NC | < 15 | < 15 | 17 | 21 | 24 | 27 | 31 | 37 |
| | Throw (ft) - Coanda Effect | 1-2-4 | 2-3-5 | 2-3-5 | 2-4-6 | 3-4-7 | 3-8-11 | 4-6-9 | 4-7-11 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-2-4 | 2-3-4 | 2-3-5 | 2-3-5 | 2-5-9 | 3-5-7 | 3-5-8 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 |
| | Pressure Loss (in.w.g.) | 0.027 | 0.041 | 0.054 | 0.073 | 0.094 | 0.146 | 0.197 | 0.29 |
| | NC | < 15 | 18 | 21 | 24 | 27 | 32 | 38 | 44 |
| | Throw (ft) - Coanda Effect | 2-4-6 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 | 5-9-13 | 7-11-15 | 8-13-19 |
| | Throw (ft) - No Ceiling Effect | 2-3-5 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-14 |
| 10 | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 |
| | Pressure Loss (in.w.g.) | 0.036 | 0.055 | 0.077 | 0.104 | 0.133 | 0.205 | 0.29 | 0.39 |
| | NC | 15 | 20 | 23 | 26 | 29 | 33 | 37 | 40 |
| | Throw (ft) - Coanda Effect | 3-5-8 | 4-7-10 | 5-8-12 | 6-10-14 | 7-11-16 | 8-14-21 | 10-16-25 | 12-19-29 |
| | Throw (ft) - No Ceiling Effect | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-10-15 | 7-12-19 | 9-14-22 |
| 12 | CFM | 314 | 393 | 471 | 550 | 628 | 785 | | |
| | Pressure Loss (in.w.g.) | 0.063 | 0.095 | 0.121 | 0.166 | 0.216 | 0.325 | | |
| | NC | 22 | 27 | 31 | 34 | 38 | 44 | | |
| | Throw (ft) - Coanda Effect | 5-8-11 | 6-10-15 | 8-13-19 | 8-14-21 | 9-15-23 | 12-19-29 | | |
| | Throw (ft) - No Ceiling Effect | 4-6-9 | 4-7-11 | 6-9-14 | 6-10-15 | 7-11-17 | 9-14-22 | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

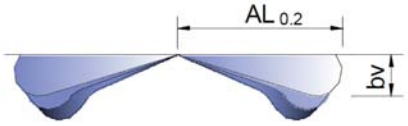
# AXO-CY + PERFAIR Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 25''D (625mm) | Pressure Loss | x 1 | x 1.5 | x 4.8 |
| | NC | + 0.8 | +5.1 | +7 |

| Type B Throw Correction Factor | |
|---|---|
| Dim | Correction Factor |
| 25"D | 0.74 |

Type B = 50% position 1, 50% position 2

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .056 | .95 |
| **-10** | .064 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | | |
|---|---|---|---|
| **Throw (ft)** | i (type A) | i (type B) | Delta T Ratio |
| **4** | 5 | 7 | 0.115 |
| **6** | 9 | 14 | 0.068 |
| **8** | 12 | 19 | 0.052 |
| **10** | 16 | 25 | 0.04 |
| **15** | 26 | 42 | 0.027 |
| **20** | 37 | 60 | 0.02 |
| **25** | 47 | 60 | 0.016 |
| **30** | 60 | 100 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

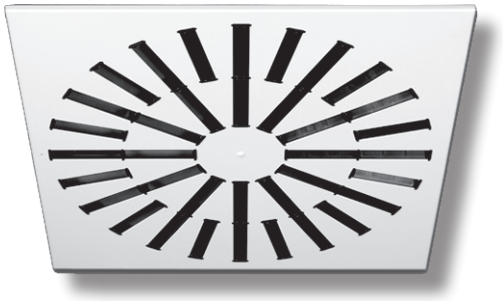
**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# How to Specify AXO-CY

Supply and mounting of circular high induction swirl diffuser with individually adjustable radial inclined vanes model AXO-CY, dimension 25 inches or 625 mm. Constructed from galvanized steel face panel powder coated in white M9016, with ABS adjustable diffusion vanes featuring airflow straighteners on the back of the vanes. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

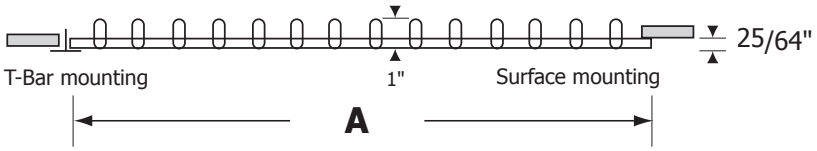
# AXO-S Square Diffuser, Radial Vanes



**AXO-S**
**by MADEL®**

| List Size | A | Free Area (sqf) | CFM Min | CFM Max |
|---|---|---|---|---|
| 12 (299) | 11 37/64" (294 mm) | 0.10 | 50 | 160 |
| 16 (400) | 15 3/4" (395 mm) | 0.216 | 100 | 250 |
| 20 (500) | 19 3/4" (495 mm) | 0.312 | 150 | 330 |
| 24 (605) | 23 5/8" (600 mm) | 0.48 | 230 | 550 |
| 32 (800) | 31 1/2" (795 mm) | 0.73 | 360 | 600 |

**Min cfm and Max cfm are recommended values for optimal performance and can be exceeded in VAV applications.**




# AXO-S 12 + PERFAIR Performance Data

12" x 12" Face (Imperial), Swirl Effect — 299 mm x 299 mm Face (Metric)

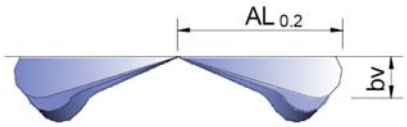
| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.041 | 0.062 |
| 5 | CFM | 27 | 41 | 55 | 68 | 82 | 95 | 109 | 136 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.02 | 0.03 | 0.05 | 0.07 | 0.09 | 0.12 | 0.181 |
| | NC | < 15 | < 15 | < 15 | 17 | 22 | 25 | 29 | 35 |
| | Throw (ft) - Coanda Effect | 1-2-2 | 1-2-4 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-9 | 5-8-11 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 1-2-3 | 1-2-3 | 2-3-4 | 2-4-5 | 2-4-6 | 3-5-7 | 4-6-9 |
| 6 | CFM | 39 | 59 | 79 | 98 | 118 | 137 | | |
| | Pressure Loss (in.w.g.) | 0.02 | 0.04 | 0.06 | 0.1 | 0.14 | 0.18 | | |
| | NC | < 15 | < 15 | 21 | 26 | 31 | 35 | | |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-3-5 | 3-4-7 | 3-6-8 | 4-7-10 | 5-8-11 | | |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-3-5 | 3-4-6 | 3-5-8 | 4-6-9 | | |
| 8 | CFM | 70 | 105 | 140 | | | | | |
| | Pressure Loss (in.w.g.) | 0.06 | 0.1 | 0.185 | | | | | |
| | NC | 17 | 28 | 37 | | | | | |
| | Throw (ft) - Coanda Effect | 2-4-6 | 4-6-9 | 5-8-11 | | | | | |
| | Throw (ft) - No Ceiling Effect | 2-3-4 | 3-4-7 | 3-6-9 | | | | | |

**Performance Notes**
- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

# AXO-S 12 + PERFAIR Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 12”x12’’ (299mm) | Pressure Loss | x1 | x 1.2 | x 2.4 |
| | NC | +.07 | +1.1 | +2.4 |

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw’(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | |
|---|---|---|
| **Throw (ft)** | i | Delta T Ratio |
| **4** | 10 | 0.046 |
| **6** | 17 | 0.028 |
| **8** | 23 | 0.022 |
| **10** | 29 | 0.017 |
| **15** | 48 | - |
| **20** | 65 | - |
| **25** | 100 | - |
| **30** | 125 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# AXO-S 16 (AXO-S 400) + PERFAIR Performance Data

16" x 16" Face (Imperial), Swirl Effect — 400 mm x 400 mm Face (Metric)

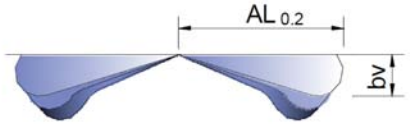
| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | 59 | 79 | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | 0.009 | 0.015 | 0.025 | 0.035 | 0.046 | 0.06 | 0.092 |
| | NC | | < 15 | < 15 | < 15 | < 15 | 17 | 21 | 26 |
| | Throw (ft) - Coanda Effect | | 1-2-3 | 2-3-4 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 |
| | Throw (ft) - No Ceiling Effect | | 1-2-2 | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 |
| 8 | CFM | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.028 | 0.048 | 0.074 | 0.104 | 0.139 | 0.18 | 0.276 |
| | NC | < 15 | < 15 | 16 | 22 | 25 | 29 | 32 | 38 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-4-6 | 3-5-8 | 4-7-10 | 5-8-12 | 5-9-14 | 6-10-16 | 8-13-19 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-4-6 | 3-5-7 | 3-6-9 | 4-7-10 | 5-8-12 | 6-10-15 |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 16"x16'' (605mm) | Pressure Loss | x 1 | x 1.2 | x 2.3 |
| | NC | +0.8 | +1.5 | +2.9 |

| **Delta T Correction Factors** | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| **Ratios** | | |
|---|---|---|
| **Throw (ft)** | i | Delta T Ratio |
| **4** | 7 | 0.052 |
| **6** | 13 | 0.034 |
| **8** | 18 | 0.026 |
| **10** | 24 | 0.019 |
| **15** | 39 | - |
| **20** | 55 | - |
| **25** | 72 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# AXO-S 20 (AXO-S 500) + PERFAIR Performance Data

20" x 20" Face (Imperial), Swirl Effect — 500 mm x 500 mm Face (Metric)

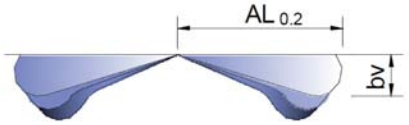
| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 |
| 6 | CFM | | 98 | 118 | 137 | 157 | 196 | 236 |
| | Pressure Loss (in.w.g.) | | 0.015 | 0.021 | 0.028 | 0.036 | 0.055 | 0.079 |
| | NC | | < 15 | < 15 | < 15 | < 15 | 19 | 24 |
| | Throw (ft) - Coanda Effect | | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-11 |
| | Throw (ft) - No Ceiling Effect | | 1-2-3 | 2-3-4 | 2-3-5 | 2-3-5 | 3-4-7 | 3-5-8 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 |
| | Pressure Loss (in.w.g.) | 0.029 | 0.045 | 0.062 | 0.084 | 0.108 | 0.166 | 0.281 |
| | NC | < 15 | 17 | 21 | 25 | 28 | 34 | 40 |
| | Throw (ft) - Coanda Effect | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-10-16 | 8-13-19 |
| | Throw (ft) - No Ceiling Effect | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-9 | 5-8-12 | 6-10-14 |
| 10 | CFM | 218 | 273 | 327 | 382 | | | |
| | Pressure Loss (in.w.g.) | 0.068 | 0.104 | 0.147 | 0.198 | | | |
| | NC | 22 | 28 | 32 | 36 | | | |
| | Throw (ft) - Coanda Effect | 4-6-10 | 5-8-12 | 6-10-15 | 7-11-17 | | | |
| | Throw (ft) - No Ceiling Effect | 3-5-7 | 4-6-9 | 4-7-11 | 5-8-13 | | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 20"x20'' (500mm) | Pressure Loss | x 1 | x 1.4 | x 4 |
| | NC | +0.8 | +2.1 | +2.8 |

| **Delta T Correction Factors** | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

# AXO-S 20 (AXO-S 500) + PERFAIR Performance Data (continued)

| Ratios | | | |
|---|---|---|---|
| **Throw (ft)** | i (type A) | i (type B) | Delta T Ratio |
| **4** | 6 | 9 | 0.082 |
| **6** | 12 | 17 | 0.047 |
| **8** | 16 | 24 | 0.035 |
| **10** | 20 | 30 | 0.028 |
| **15** | 33 | 50 | 0.018 |
| **20** | 46 | 73 | 0.01 |
| **25** | 58 | 97 | |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# AXO-S 24 + PERFAIR Performance Data

24" x 24" Face (Imperial), Swirl Effect — 605mm x 605mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.006 | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 | .160 |
| 6 | CFM | | | 98 | 118 | 137 | 157 | 196 | 236 | 275 | 314 |
| | Pressure Loss (in.w.g.) | | | 0.008 | 0.011 | 0.015 | 0.019 | 0.029 | 0.041 | 0.055 | 0.071 |
| | NC | | | < 15 | < 15 | < 15 | < 15 | 15 | 19 | 22 | 25 |
| | Throw (ft) - Coanda Effect | | | 1-2-4 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-8-12 |
| | Throw (ft) - No Ceiling Effect | | | 1-2-3 | 1-2-3 | 2-3-4 | 2-3-4 | 2-4-6 | 3-4-7 | 3-5-8 | 4-6-9 |
| 8 | CFM | 105 | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 | 559 |
| | Pressure Loss (in.w.g.) | 0.010 | 0.015 | 0.023 | 0.033 | 0.044 | 0.057 | 0.087 | 0.124 | 0.166 | 0.215 |
| | NC | < 15 | < 15 | < 15 | 16 | 20 | 22 | 27 | 31 | 35 | 38 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-10 | 5-9-13 | 6-10-16 | 7-12-18 | 8-14-21 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-7-10 | 5-8-12 | 6-9-14 | 6-10-16 |
| 10 | CFM | 164 | 218 | 273 | 327 | 382 | 436 | 545 | 654 | | |
| | Pressure Loss (in.w.g.) | 0.020 | 0.036 | 0.055 | 0.077 | 0.104 | 0.133 | 0.205 | 0.29 | | |
| | NC | < 15 | 17 | 22 | 26 | 28 | 32 | 37 | 40 | | |
| | Throw (ft) - Coanda Effect | 3-4-6 | 3-5-8 | 4-7-10 | 5-8-12 | 6-10-14 | 7-11-16 | 8-14-21 | 10-16-25 | | |
| | Throw (ft) - No Ceiling Effect | 2-3-5 | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-10-15 | 7-12-19 | | |
| 12 | CFM | 236 | 314 | 393 | 471 | 550 | 628 | | | | |
| | Pressure Loss (in.w.g.) | 0.040 | 0.071 | 0.11 | 0.155 | 0.208 | 0.246 | | | | |
| | NC | 19 | 25 | 30 | 34 | 37 | 40 | | | | |
| | Throw (ft) - Coanda Effect | 4-6-9 | 5-8-12 | 6-10-15 | 7-12-18 | 8-14-21 | 9-15-23 | | | | |
| | Throw (ft) - No Ceiling Effect | 3-5-7 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-16 | 7-11-17 | | | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

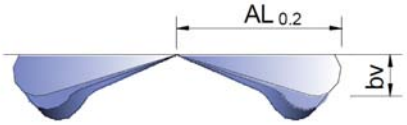
| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 12"x12'' (299mm) | Pressure Loss | x1 | x 1.2 | x 2.4 |
| | NC | +.07 | +1.1 | +2.4 |
| 24"x24'' (605mm) | Pressure Loss | x 1 | x 1.5 | x 4.8 |
| | NC | +0.9 | +5.8 | +7.7 |

| **Type B Throw Correction Factor** | |
|---|---|
| Dim | Correction Factor |
| 24" x 24" (605mm) | 0.74 |

Type B = 50% position 1, 50% position 2

# AXO-S + PERFAIR Performance Data (continued)

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | | | | |
|---|---|---|---|---|---|
| **Throw (ft)** | i 12" | Delta T Ratio 12" | i 24" (A) | i 24" (B) | Delta T Ratio 24" |
| **4** | 10 | 0.046 | 7 | 7 | 0.115 |
| **6** | 17 | 0.028 | 9 | 14 | 0.068 |
| **8** | 23 | 0.022 | 11 | 19 | 0.052 |
| **10** | 29 | 0.017 | 16 | 25 | 0.04 |
| **15** | 48 | - | 26 | 42 | 0.027 |
| **20** | 65 | - | 37 | 60 | 0.02 |
| **25** | 100 | - | 47 | 80 | 0.016 |
| **30** | 125 | - | 61 | 100 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# AXO-S 32 (AXO-S 800) + PERFAIR Performance Data

32" x 32" Face (Imperial), Swirl Effect — 800 mm x 800 mm Face (Metric)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Neck Size | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 12" (300mm) | CFM | 314 | 393 | 471 | 550 | 628 | 785 | 942 | 1100 |
| | Pressure Loss (in.w.g.) | 0.027 | 0.042 | 0.059 | 0.079 | 0.102 | 0.156 | 0.221 | 0.297 |
| | NC | 18 | 24 | 29 | 33 | 37 | 43 | 48 | > 50 |
| | Throw (ft) - Coanda Effect | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-15 | 7-12-18 | 9-15-22 | 11-17-26 | 12-20-31 |
| | Throw (ft) - No Ceiling Effect | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-12 | 5-9-13 | 7-11-16 | 8-13-20 | 9-15-23 |

NC Value based on 10 db room attenuation.
Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

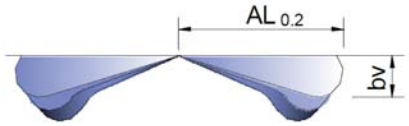
| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 32''x32'' (800mm) | Pressure Loss | x 1 | x 1.7 | x.4.5 |
| | NC | +0.9 | +4.4 | +7.8 |

| Type B Throw Correction Factor | |
|---|---|
| Dim | Correction Factor |
| 32''x32'' (800mm) | 0.74 |

Type B = 50% position 1, 50% position 2

# AXO-S 32 (AXO-S 800) + PERFAIR Performance Data (continued)

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | | |
|---|---|---|---|
| **Throw (ft)** | i (type A) | i (type B) | Delta T Ratio |
| **4** | < 5 | < 5 | 0.19 |
| **6** | 6 | 8 | 0.11 |
| **8** | 8 | 12 | 0.082 |
| **10** | 12 | 15 | 0.065 |
| **15** | 18 | 25 | 0.044 |
| **20** | 26 | 36 | 0.033 |
| **25** | 32 | 16 | 0.026 |
| **30** | 41 | 60 | 0.021 |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

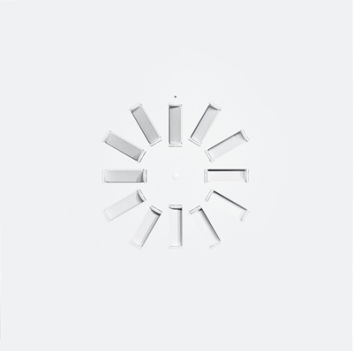
## How to Specify AXO-S

Supply and mounting of square high induction swirl diffuser model AXO-S, with individually adjustable radial vanes. Constructed from galvanized steel face panel powder coated in white M9016, with ABS adjustable diffusion vanes featuring airflow straighteners on the back of the vanes. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

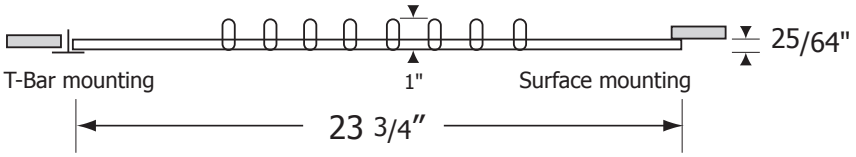
# AXO-S300 Square Diffuser, Radial Vanes, Very Low CFM

| Dim A | Free Area (sqf) | CFM Min | CFM Max |
|---|---|---|---|
| 24"x24'' (605mm) | 0.10 | 50 | 160 |

**Min cfm and Max cfm are recommended values for optimal performance and can be exceeded in VAV applications.**



**AXO-S300**




# AXO-S300 + PERFAIR Performance Data

24" x 24" Face (Imperial), Swirl Effect — 605mm x 605mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.041 | 0.062 |
| 5 | CFM | 27 | 41 | 55 | 68 | 82 | 95 | 109 | 136 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.02 | 0.03 | 0.05 | 0.07 | 0.09 | 0.12 | 0.181 |
| | NC | < 15 | < 15 | < 15 | 17 | 22 | 25 | 29 | 35 |
| | Throw (ft) - Coanda Effect | 1-2-2 | 1-2-4 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-9 | 5-8-11 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 1-2-3 | 1-2-3 | 2-3-4 | 2-4-5 | 2-4-6 | 3-5-7 | 4-6-9 |
| 6 | CFM | 39 | 59 | 79 | 98 | 118 | 137 | | |
| | Pressure Loss (in.w.g.) | 0.02 | 0.04 | 0.06 | 0.1 | 0.14 | 0.18 | | |
| | NC | < 15 | < 15 | 21 | 26 | 31 | 35 | | |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-3-5 | 3-4-7 | 3-6-8 | 4-7-10 | 5-8-11 | | |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-3-5 | 3-4-6 | 3-5-8 | 4-6-9 | | |
| 8 | CFM | 70 | 105 | 140 | | | | | |
| | Pressure Loss (in.w.g.) | 0.06 | 0.1 | 0.185 | | | | | |
| | NC | 17 | 28 | 37 | | | | | |
| | Throw (ft) - Coanda Effect | 2-4-6 | 4-6-9 | 5-8-11 | | | | | |
| | Throw (ft) - No Ceiling Effect | 2-3-4 | 3-4-7 | 3-6-9 | | | | | |

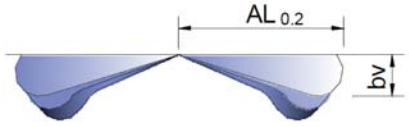
**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 24"x24'' (605mm) | Pressure Loss | x1 | x 1.2 | x 2.4 |
| | NC | +.07 | +1.1 | +2.4 |

# AXO-S300 + PERFAIR Performance Data (continued)

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | |
|---|---|---|
| **Throw (ft)** | i | Delta T Ratio |
| **4** | 10 | 0.046 |
| **6** | 17 | 0.028 |
| **8** | 23 | 0.022 |
| **10** | 29 | 0.017 |
| **15** | 48 | - |
| **20** | 65 | - |
| **25** | 100 | - |
| **30** | 125 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# How to Specify AXO-S300

Supply and mounting of square high induction swirl diffuser model AXO-S300, with individually adjustable radial vanes for lower CFM. Constructed from galvanized steel face panel powder coated in white M9016, with ABS adjustable diffusion vanes featuring airflow straighteners on the back of the vanes. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

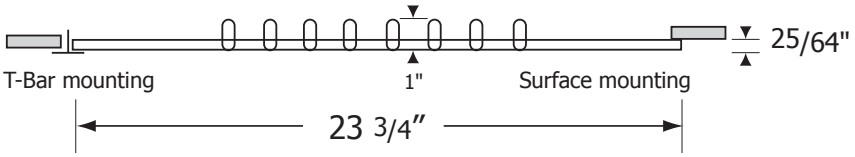
# AXO-S400 Square Diffuser, Radial Vanes, Low CFM

| Dim A | Free Area (sqf) | CFM Min | CFM Max |
|---|---|---|---|
| 24”x24’’ (605mm) | 0.22 | 100 | 250 |

**Min cfm and Max cfm are recommended values for optimal performance and can be exceeded in VAV applications.**



AXO-S400




# AXO-S400 + PERFAIR Performance Data

24” x 24” Face (Imperial), Swirl Effect — 605mm x 605mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | 59 | 79 | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | 0.009 | 0.015 | 0.025 | 0.035 | 0.046 | 0.06 | 0.092 |
| | NC | | < 15 | < 15 | < 15 | < 15 | 17 | 21 | 26 |
| | Throw (ft) - Coanda Effect | | 1-2-3 | 2-3-4 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 |
| | Throw (ft) - No Ceiling Effect | | 1-2-2 | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 |
| 8 | CFM | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.028 | 0.048 | 0.074 | 0.104 | 0.139 | 0.18 | 0.276 |
| | NC | < 15 | < 15 | 16 | 22 | 25 | 29 | 32 | > 40 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-4-6 | 3-5-8 | 4-7-10 | 5-8-12 | 5-9-14 | 6-10-16 | 8-13-19 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-4-6 | 3-5-7 | 3-6-9 | 4-7-10 | 5-8-12 | 6-10-15 |
| 10 | CFM | 109 | 164 | 218 | 273 | 327 | | | |
| | Pressure Loss (in.w.g.) | 0.03 | 0.065 | 0.110 | 0.173 | 0.244 | | | |
| | NC | < 15 | 22 | 28 | 34 | > 40 | | | |
| | Throw (ft) - Coanda Effect | 2-4-6 | 4-6-9 | 5-8-12 | 6-10-15 | 7-12-18 | | | |
| | Throw (ft) - No Ceiling Effect | 2-3-5 | 3-5-7 | 4-6-9 | 5-8-11 | 5-9-14 | | | |

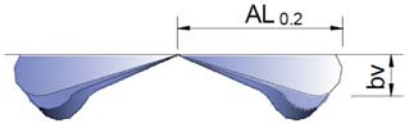
**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 24”x24’’ (605mm) | Pressure Loss | x 1 | x 1.2 | x 2.3 |
| | NC | +0.8 | +1.5 | +2.9 |

# AXO-S400 + PERFAIR Performance Data (continued)

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | |
|---|---|---|
| **Throw (ft)** | i | Delta T Ratio |
| **4** | 7 | 0.052 |
| **6** | 13 | 0.034 |
| **8** | 18 | 0.026 |
| **10** | 24 | 0.019 |
| **15** | 39 | - |
| **20** | 55 | - |
| **25** | 72 | - |
| **30** | 90 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# How to Specify AXO-S400

Supply and mounting of square high induction swirl diffuser model AXO-S400, with individually adjustable radial vanes for lower CFM. Constructed from galvanized steel face panel powder coated in white M9016, with ABS adjustable diffusion vanes featuring airflow straighteners on the back of the vanes. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

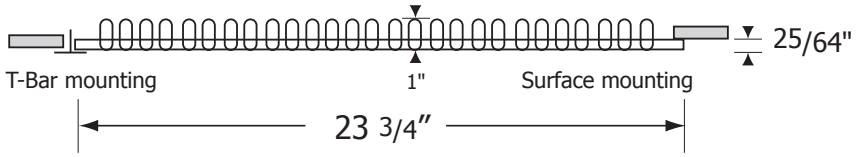
# AXO-SX Square Diffuser, Radial Vanes, High CFM

| Dim A | Free Area (sqf) | CFM Min | CFM Max |
|---|---|---|---|
| 24"x24'' (605mm) | 0.62 | 300 | 550 |

**Min cfm and Max cfm are recommended values for optimal performance and can be exceeded in VAV applications.**



**AXO-SX**




# AXO-SX + PERFAIR Performance Data

24" x 24" Face (Imperial), Swirl Effect — 605mm x 605mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | 0.09 | 0.122 | 0.16 |
| 6 | CFM | | | 118 | 137 | 157 | 196 | 236 | 275 | 314 |
| | Pressure Loss (in.w.g.) | | | 0.007 | 0.01 | 0.013 | 0.019 | 0.027 | 0.037 | 0.047 |
| | NC | | | < 15 | < 15 | < 15 | < 15 | < 15 | 16 | 20 |
| | Throw (ft) - Coanda Effect | | | 2-3-4 | 2-3-4 | 2-3-4 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-9 |
| | Throw (ft) - No Ceiling Effect | | | 1-2-3 | 1-2-3 | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 | 559 |
| | Pressure Loss (in.w.g.) | 0.013 | 0.015 | 0.022 | 0.029 | 0.038 | 0.058 | 0.082 | 0.11 | 0.142 |
| | NC | < 15 | < 15 | < 15 | < 15 | 17 | 23 | 28 | 32 | 36 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-6-10 | 5-8-12 | 5-9-14 | 6-10-16 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 1-2-4 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-8-12 |
| 10 | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 | 873 |
| | Pressure Loss (in.w.g.) | 0.023 | 0.036 | 0.051 | 0.069 | 0.088 | 0.135 | 0.191 | 0.258 | 0.332 |
| | NC | < 15 | 16 | 21 | 25 | 29 | 36 | 41 | 45 | 47 |
| | Throw (ft) - Coanda Effect | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-10-15 | 7-12-18 | 9-14-21 | 10-16-24 |
| | Throw (ft) - No Ceiling Effect | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-9 | 5-8-11 | 5-9-14 | 6-11-16 | 7-12-18 |
| 12 | CFM | 314 | 393 | 471 | 550 | 628 | 785 | | | |
| | Pressure Loss (in.w.g.) | 0.047 | 0.072 | 0.102 | 0.138 | 0.177 | 0.271 | | | |
| | NC | 20 | 27 | 31 | 36 | 40 | 46 | | | |
| | Throw (ft) - Coanda Effect | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-15 | 7-12-18 | 9-14-22 | | | |
| | Throw (ft) - No Ceiling Effect | 3-4-4 | 3-5-8 | 4-6-10 | 5-8-12 | 5-9-13 | 7-11-16 | | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

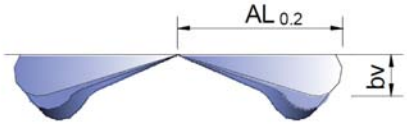
# AXO-SX + PERFAIR Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 24”x24’’ (605mm) | Pressure Loss | x1 | x1.5 | x4.8 |
| | NC | +0.8 | +4.8 | +5.2 |

| Type B Throw Correction Factor | |
|---|---|
| Dim | Correction Factor |
| 24”x24’’ | 0.6 |

Type B = 50% position 1, 50% position 2

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | 0.36 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .058 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw’(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | | |
|---|---|---|---|
| **Throw (ft)** | i (type A) | i (type B) | Delta T Ratio |
| **4** | < 5 | 9 | 1.3 |
| **6** | 8 | 18 | 0.08 |
| **8** | 12 | 26 | 0.06 |
| **10** | 16 | 34 | 0.047 |
| **15** | 28 | 55 | 0.03 |
| **20** | 43 | 82 | 0.023 |
| **25** | 56 | 115 | 0.018 |
| **30** | 78 | 145 | 0.015 |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

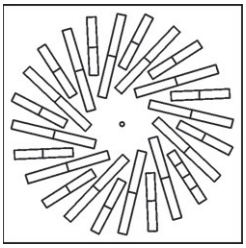
## How to Specify AXO-SX

Supply and mounting of square high induction swirl diffuser model AXO-SX, with individually adjustable radial vanes for higher CFM. Constructed from galvanized steel face panel powder coated in white M9016, with ABS adjustable diffusion vanes featuring airflow straighteners on the back of the vanes. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

# AXO-SY Square Diffuser, Radial Incline Vanes

| Dim A | Free Area (sqf) | CFM Min | CFM Max |
|---|---|---|---|
| 24”x24’’ (605mm) | 0.47 | 230 | 500 |

**Min cfm and Max cfm are recommended values for optimal performance and can be exceeded in VAV applications.**



AXO-SY

# AXO-SY + PERFAIR Performance Data

24” x 24” Face (Imperial), Swirl Effect

605mm x 605mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | 0.09 | 0.122 |
| 6 | CFM | | 98 | 118 | 137 | 157 | 196 | 236 | 275 |
| | Pressure Loss (in.w.g.) | | 0.008 | 0.011 | 0.015 | 0.019 | 0.03 | 0.042 | 0.057 |
| | NC | | < 15 | < 15 | < 15 | < 15 | < 15 | 17 | 21 |
| | Throw (ft) - Coanda Effect | | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-10 |
| | Throw (ft) - No Ceiling Effect | | 1-2-3 | 1-2-3 | 1-2-4 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 |
| | Pressure Loss (in.w.g.) | 0.016 | 0.024 | 0.034 | 0.045 | 0.058 | 0.089 | 0.127 | 0.17 |
| | NC | < 15 | < 15 | < 15 | 18 | 21 | 26 | 31 | 35 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 2-4-6 | 3-5-7 | 3-6-8 | 4-6-10 | 5-8-12 | 6-10-15 | 7-11-17 |
| | Throw (ft) - No Ceiling Effect | 1-2-4 | 2-3-5 | 2-4-5 | 3-4-6 | 3-5-7 | 4-6-9 | 4-7-11 | 5-8-13 |
| 10 | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 |
| | Pressure Loss (in.w.g.) | 0.036 | 0.056 | 0.079 | 0.106 | 0.137 | 0.209 | 0.296 | 0.399 |
| | NC | 15 | 20 | 25 | 29 | 32 | 38 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 3-5-8 | 4-6-10 | 5-8-11 | 5-9-13 | 6-10-15 | 8-13-19 | 9-15-23 | 11-18-27 |
| | Throw (ft) - No Ceiling Effect | 2-4-6 | 3-5-7 | 3-6-9 | 4-7-10 | 5-8-11 | 6-9-14 | 7-11-17 | 8-13-20 |
| 12 | CFM | 314 | 393 | 471 | 550 | 628 | 785 | | |
| | Pressure Loss (in.w.g.) | 0.073 | 0.112 | 0.158 | 0.213 | 0.273 | 0.342 | | |
| | NC | 24 | 30 | 34 | 38 | >40 | >40 | | |
| | Throw (ft) - Coanda Effect | 4-7-11 | 5-9-14 | 7-11-16 | 8-13-19 | 9-15-23 | 12-19-29 | | |
| | Throw (ft) - No Ceiling Effect | 3-5-8 | 4-7-10 | 5-8-12 | 6-10-14 | 7-10-16 | 9-14-22 | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

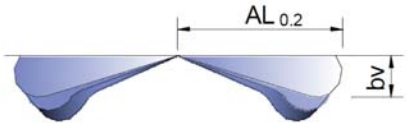
# AXO-SY + PERFAIR or BOXSTAR Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 24"x24'' (605mm) | Pressure Loss | x1 | x1.5 | x4.8 |
| | NC | +0.9 | +5.1 | +7 |

| Type B Throw Correction Factor | |
|---|---|
| Dim | Correction Factor |
| 24"x24'' | 0.75 |

Type B = 50% position 1, 50% position 2

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | 0.36 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .058 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | | |
|---|---|---|---|
| **Throw (ft)** | i (type A) | i (type B) | Delta T Ratio |
| **4** | 5 | 7 | 0.125 |
| **6** | 9 | 13 | 0.075 |
| **8** | 13 | 19 | 0.057 |
| **10** | 17 | 27 | 0.045 |
| **15** | 26 | 45 | 0.03 |
| **20** | 39 | 65 | 0.023 |
| **25** | 50 | 86 | 0.018 |
| **30** | 62 | 115 | 0.014 |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

## How to Specify AXO-SY

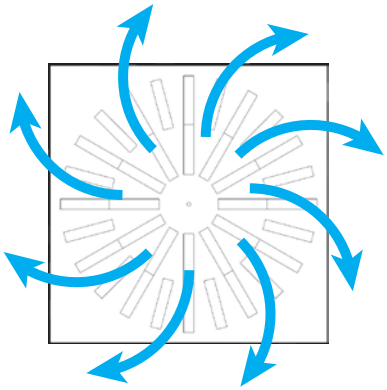
Supply and mounting of square high induction swirl diffuser model AXO-SY, with individually adjustable radial inclined vanes. Constructed from galvanized steel face panel powder coated in white M9016, with ABS adjustable diffusion vanes featuring airflow straighteners on the back of the vanes. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

# AXO-S 24 and AXO-C 25 Adjustment and Patterns

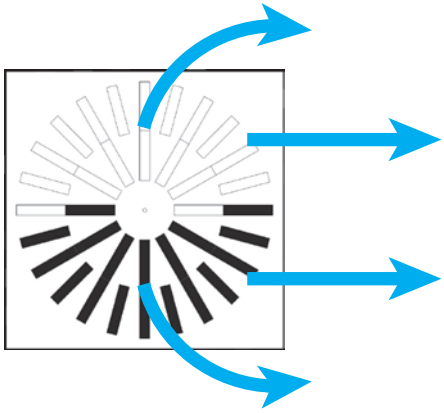
## Throw Correction Factors

| Adjustment | Ka | |
|---|---|---|
| 1-Way | 1.4 | Throw' = Ka x Throw |
| 2-Way | 1.2 | |
| 3-Way | 1.1 | |

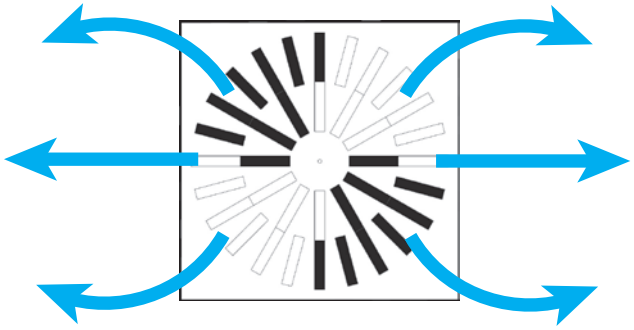
## Swirl (standard)



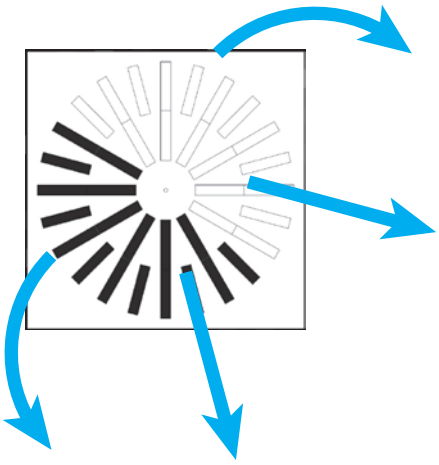
## 1 Way



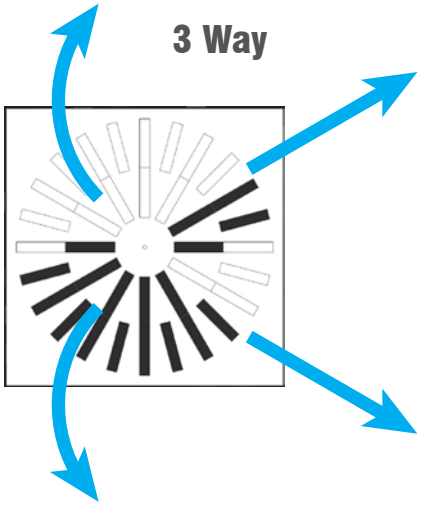
## 2 Way Opposed



## 2 Way Corner



## 3 Way

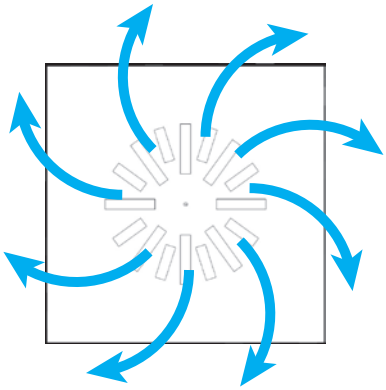


# AXO-S400 Adjustment and Patterns

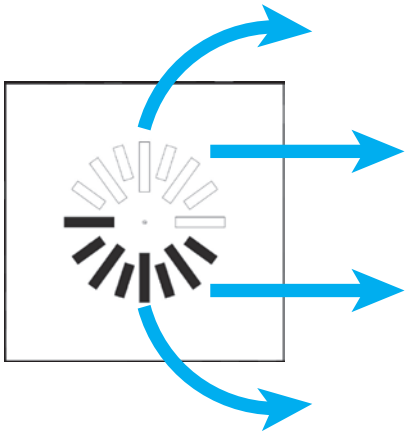
## Throw Correction Factors

| Adjustment | Ka | |
|---|---|---|
| 1-Way | 1.4 | Throw' = Ka x Throw |
| 2-Way | 1.2 | |
| 3-Way | 1.1 | |

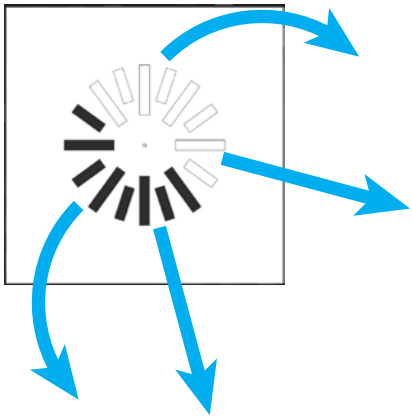
### Swirl (standard)



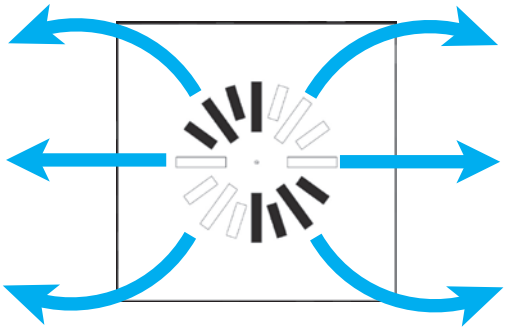
### 1 Way



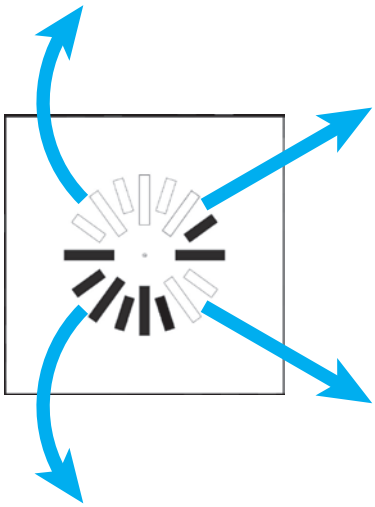
### 2 Way Corner



### 2 Way Opposed



### 3 Way

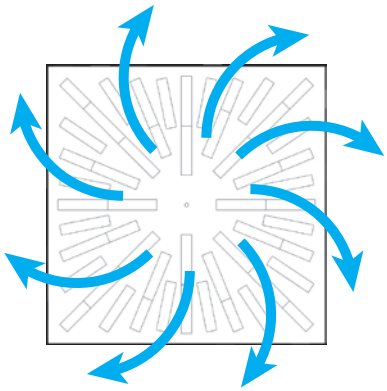


# AXO-SX 24 Adjustment and Patterns

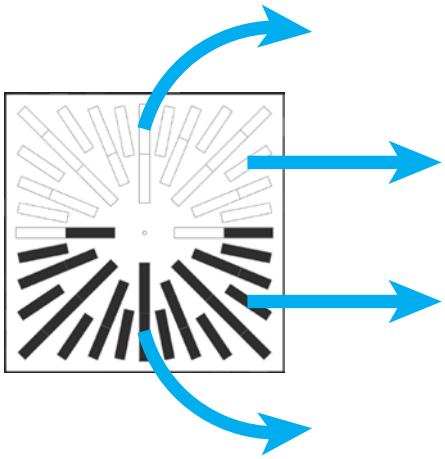
## Throw Correction Factors

| Adjustment | Ka | |
|---|---|---|
| 1-Way | 1.4 | Throw' = Ka x Throw |
| 2-Way | 1.2 | |
| 3-Way | 1.1 | |

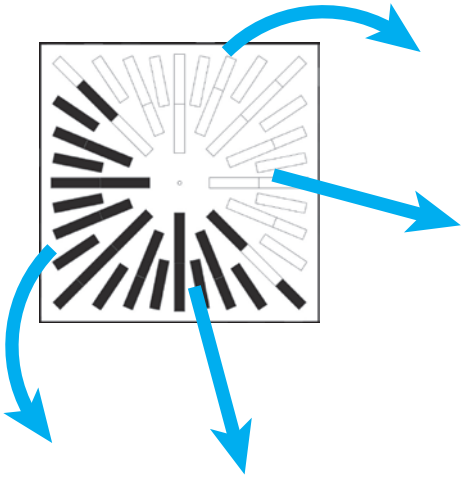
### Swirl (standard)



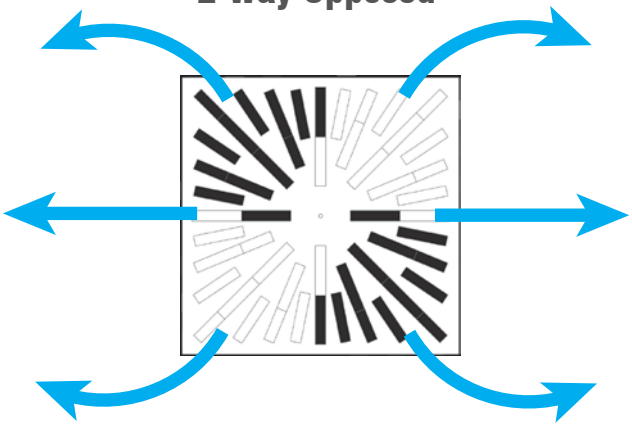
### 1 Way



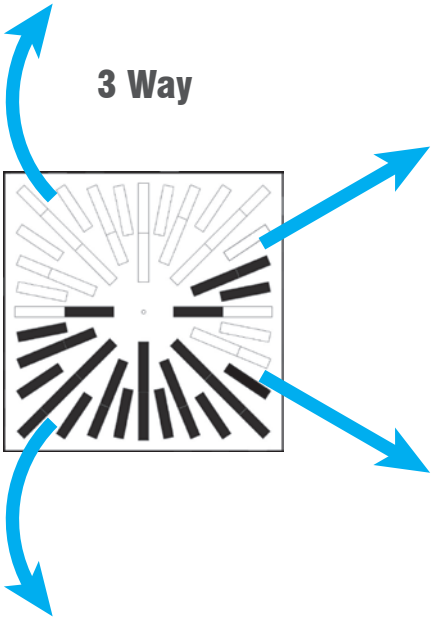
### 2 Way Corner



### 2 Way Opposed



### 3 Way



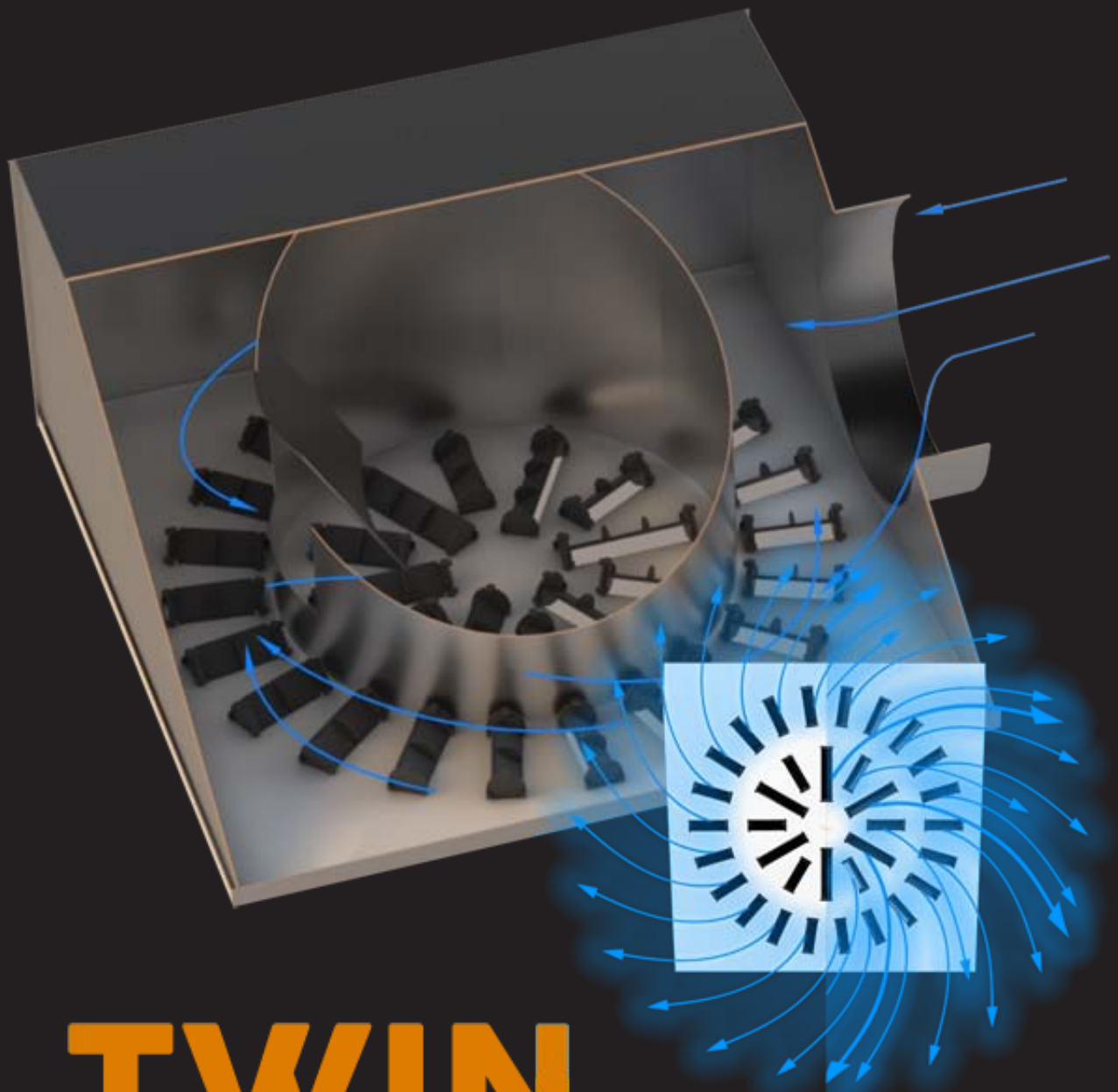
## How to Order AXO Series

| AXO | -S | -AB | 24 | + PERFAIR-SS | 24 | 10 |
|---|---|---|---|---|---|---|

| | | |
|---|---|---|
| **Neck Diameter** | | 6” 8”, 10” or 12” D |
| **Face Dimension** | | Match Product Face |
| **Plenum** | **PERFAIR-CS** | Round, Side Entry |
| | **PERFAIR-CT** | Round, Top Entry |
| | **PERFAIR-SS** | Square, Side Entry |
| | **PERFAIR-ST** | Square, Top Entry |
| **Face Dimension** | **12** | 12” x 12” or 12” Diameter |
| | **16** | 16” x 16” or 16” Diameter |
| | **20** | 20” x 20” or 20” Diameter |
| | **24** | 24” x 24” Square Face |
| | **25** | 25” Diameter Face |
| | **32** | 32” X 32” |
| | **33** | 33” Diameter Face |
| **Induction Vanes Color** | **default** | Black Induction Vanes |
| | **AB** | White Induction Vanes |
| **Model** | **C** | Round, Straight Vanes |
| | **CY** | Round, Inclined Vanes |
| | **S300** | Square, Very Low CFM |
| | **S400** | Square, Low CFM |
| | **S** | Square, Stainght Vanes |
| | **SX** | Square, High CFM |
| | **SY** | Square, Inclined Vanes |
| | **ALU-C** | Alum, Round, Straight Vanes |
| | **ALU-CY** | Alum, Round, Inclined Vanes |
| | **ALU-S300** | Alum, Square, Very Low CFM |
| | **ALU-S400** | Alum, Square, Low CFM |
| | **ALU-S** | Alum, Square, Straight Vanes |
| | **ALU-SX** | Alum, Square, High CFM |
| | **ALU-SX** | Alum, Square, Inclined Vanes |







# TWIN DUAL FLOW

## AXO-TWIN

Dual Flow High Induction Swirl Diffuser for VAV Systems

EFFECTIV™

Nov 15 2020

# AXO-TWIN SERIES

## Dual Flow High Induction Swirl Diffuser for VAV Systems



**AXO-TWIN**
**by MADEL®**

**Patent Pending**

- More constant throw, velocity and NC in VAV applications
- Provides optimal performance for air volumes between 70 and 320 cfm
- Prevents cold air dropping and hot air stratification at lower cfm, while preserving thermal comfort at higher cfm
- Maintains a higher induction ratio even at lower cfm
- High induction causes rapid reduction of air velocity and temperature difference for improved thermal comfort and energy efficiency
- Individually adjustable high induction mixing vanes available in black or white
- Only requires 12" height in the ceiling to be installed

AXO-TWIN Dual Flow High Induction Swirl Diffuser by EffectiV HVAC™ and MADEL® is designed to achieve greater air mixing, thermal comfort and energy efficiency in VAV installations. AXO-TWIN provides an optimal performance for air volumes varying between 70 cfm and 320 cfm.

Thanks to the innovative design of its dual chamber plenum, AXO-TWIN diffuser self-adjusts in order to let the air pass through more or fewer induction vanes based on the volume of air, resulting in a more stable performance in VAV applications. At low cfm, the air is diffused through the outer circle of induction vanes. At high cfm, the inner chamber opens and the air is diffused through the entire surface of the diffuser. The adjustment is completely autonomous and doesn't require any special configuration, controls nor electricity.

The direct outcome is a more stable throw, air velocity, induction ratio and NC in VAV applications.

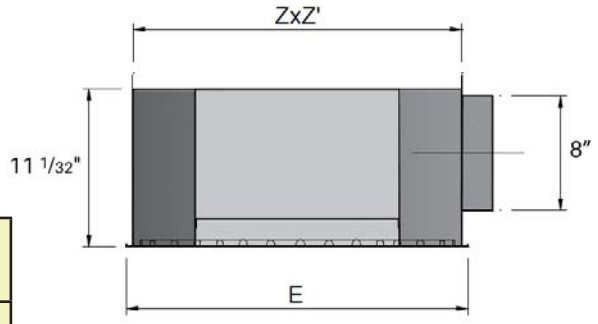
When designing a system, engineers select diffusers based on maximum air volume, trying to reach the occupied zone with limited air velocity to properly mix the room air while avoiding thermal discomfort. When VAV systems supply lower air volumes, however, the diffusion performance is seriously affected. At lower velocity, cold air tends to drop from the ceiling and hot air tends to stick to the ceiling. Hot and cold spots are created in the room and the air may fail to reach to occupied zone. Energy consumption and occupants' comfort are automatically impacted. The lack of air mixing may also increase the concentration of contaminants – CO2, gases, viruses and other airborne particles – accumulated in the room's air.

With AXO-TWIN, we limit the diffuser's free area in order to ensure enough discharge velocity to maintain a higher discharge velocity, a higher induction ratio and more stable throw distances at low cfm. The ultimate benefits are: significantly increased thermal comfort, energy efficiency, and improved ventilation for indoor air quality.

The high induction vanes and pressurization of the air in the plenum create a very even swirl diffusion pattern by default. The vanes are individually adjustable to make it possible to adapt the airflow.

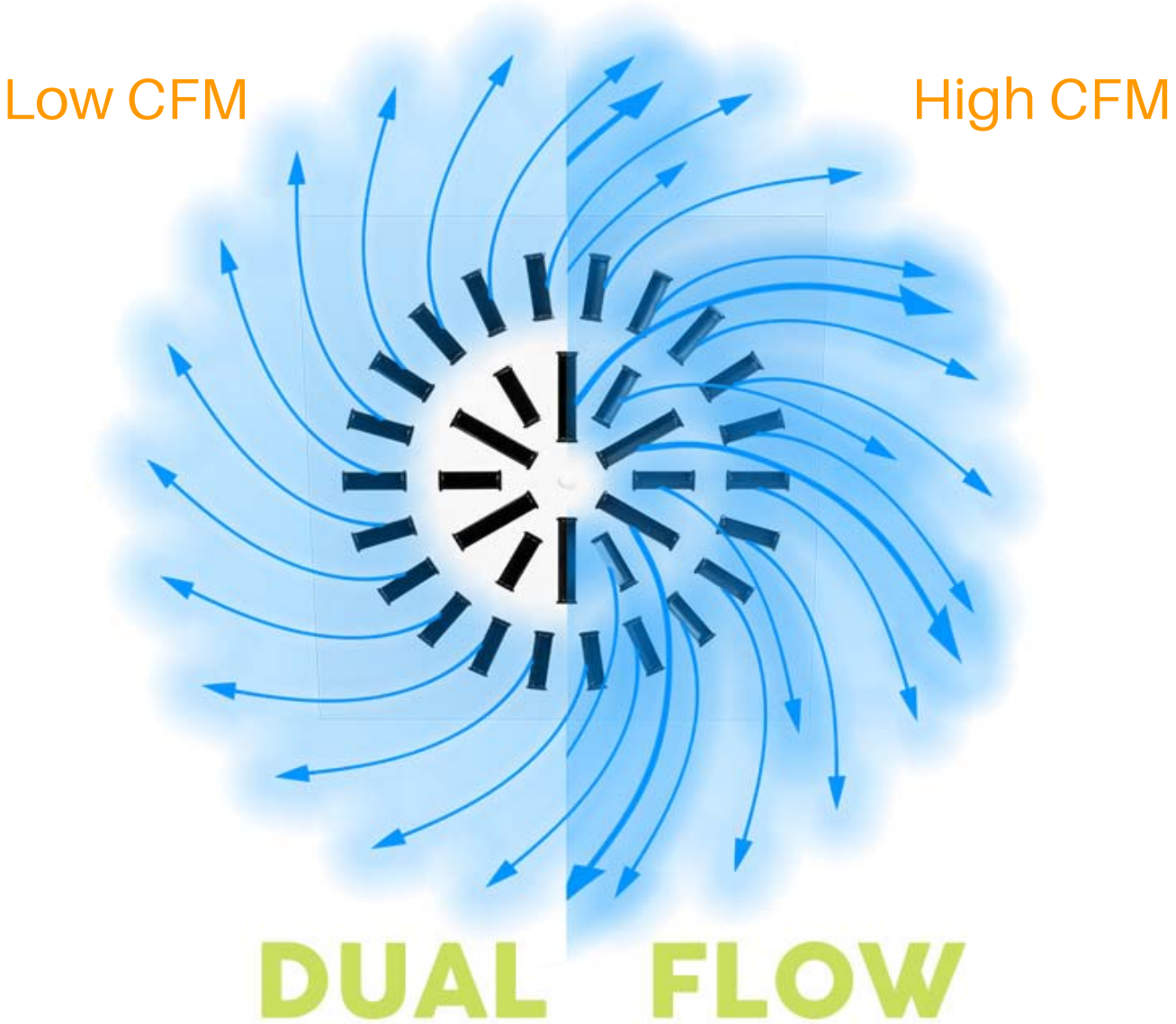
AXO-TWIN diffusers allow an optimal performance despite flow variations of up to 75% while keeping the air stream stable. For optimal conditions, AXO- TWIN diffusers may be used in ceilings 8.5 up to 13 feet (2.6 up to 4 meters) high, with a temperature differential up to 27ºF (15ºC).

## Dimensions



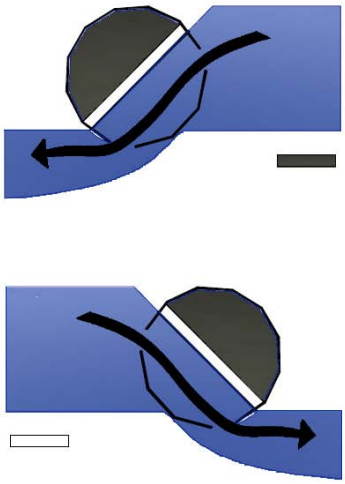

| Model | E | Z | Z | Min cfm | Max cfm |
|---|---|---|---|---|---|
| AXO-TWIN | 23 3/4" | 22 43/64" | 22 23/64" | **70** | **320** |

**Note: Min cfm and Max cfm are recommended values for optimal performance and can be exceeded**

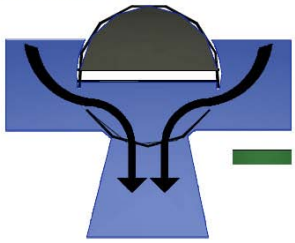


# AXO Vanes Positioning

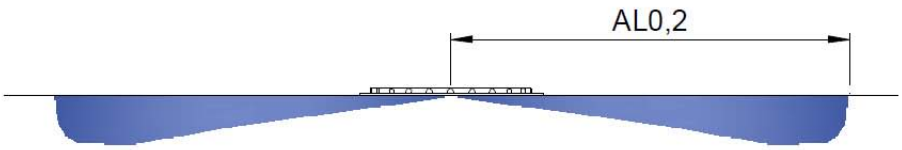
HORIZONTAL SUPPLY.
POSITION 1.

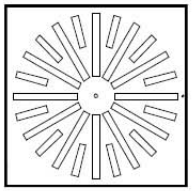


VERTICAL SUPPLY.
POSITION 2.



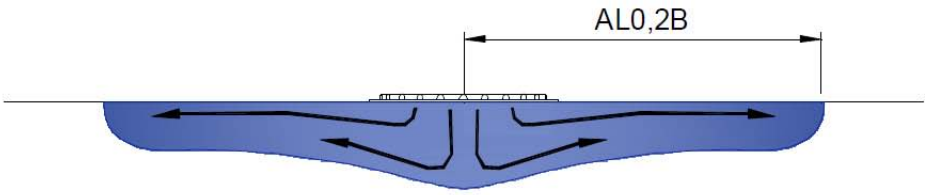
TYPE A. 100% POSITION 1.

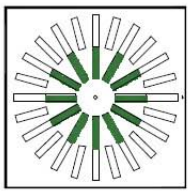


POSITION 1.

TYPE B. 50% POSITION 1 AND 50% POSITION 2.



POSITION 2.
POSITION 1.

$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Type B Throw Correction Factor | |
|---|---|
| Dim | Correction Factor |
| 24” x 24” (605mm) | 0.75 |

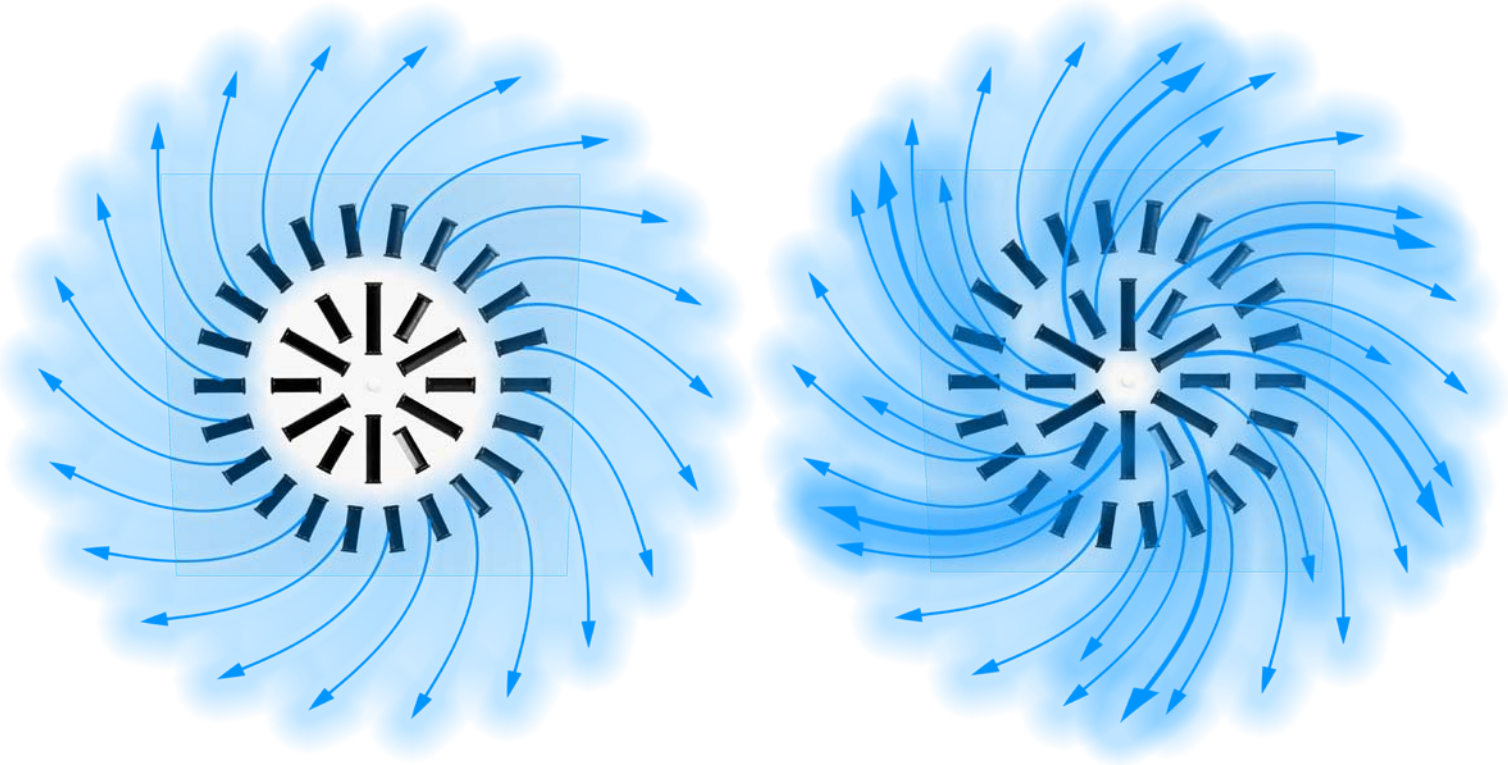
Type B = 50% position 1, 50% position 2

# AXO-TWIN Performance Data

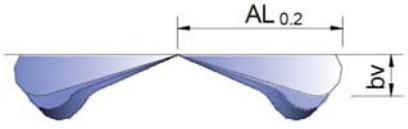
| Dimension | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24" x 24" | CFM | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 |
| | Pressure Loss (in.w.g.) | 0.013 | 0.027 | 0.046 | 0.069 | 0.094 | 0.126 | 0.16 | 0.199 | 0.24 | 0.335 |
| | NC | < 15 | < 15 | < 15 | < 20 | < 20 | < 25 | < 30 | < 35 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-10 | 4-7-11 | 5-8-12 | 5-9-13 | 6-10-15 |
| | Throw (ft) - No Ceiling | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 3-6-8 | 4-6-9 | 4-7-10 | 5-8-11 |
| | Induction Ratio - Coanda | 8 - 13 | 11 - 16 | 15 - 22 | 17 - 26 | 20 - 29 | 22 - 32 | 24 - 35 | 26 - 39 | 28 - 42 | 32 - 48 |
| | Induction R. - No Ceiling | 6 - 9 | 8 - 13 | 11 - 16 | 13 - 18 | 15 - 22 | 17 - 26 | 17 - 26 | 20 - 29 | 22 - 32 | 24 - 35 |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.
- Induction ratio values are for Type A and Type B diffusion patterns, in order.



| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | Kh | KI |
| **0** | .036 | 1 |
| **-2** | .041 | .985 |
| **-4** | .046 | .975 |
| **-6** | .052 | .965 |
| **-8** | .058 | .95 |
| **-10** | .065 | .935 |
| **-12** | .072 | .925 |
| **-15** | .084 | .91 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | | |
|---|---|---|---|
| **Throw (ft)** | i Type A | i Type B | Delta T Ratio |
| **4** | 8 | 13 | 0.051 |
| **6** | 13 | 18 | 0.036 |
| **8** | 17 | 26 | 0.03 |
| **10** | 22 | 32 | 0.026 |
| **15** | 32 | 48 | 0.019 |
| **20** | 43 | 70 | 0.015 |
| **25** | 54 | 85 | 0.01 |
| **30** | 66 | 108 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

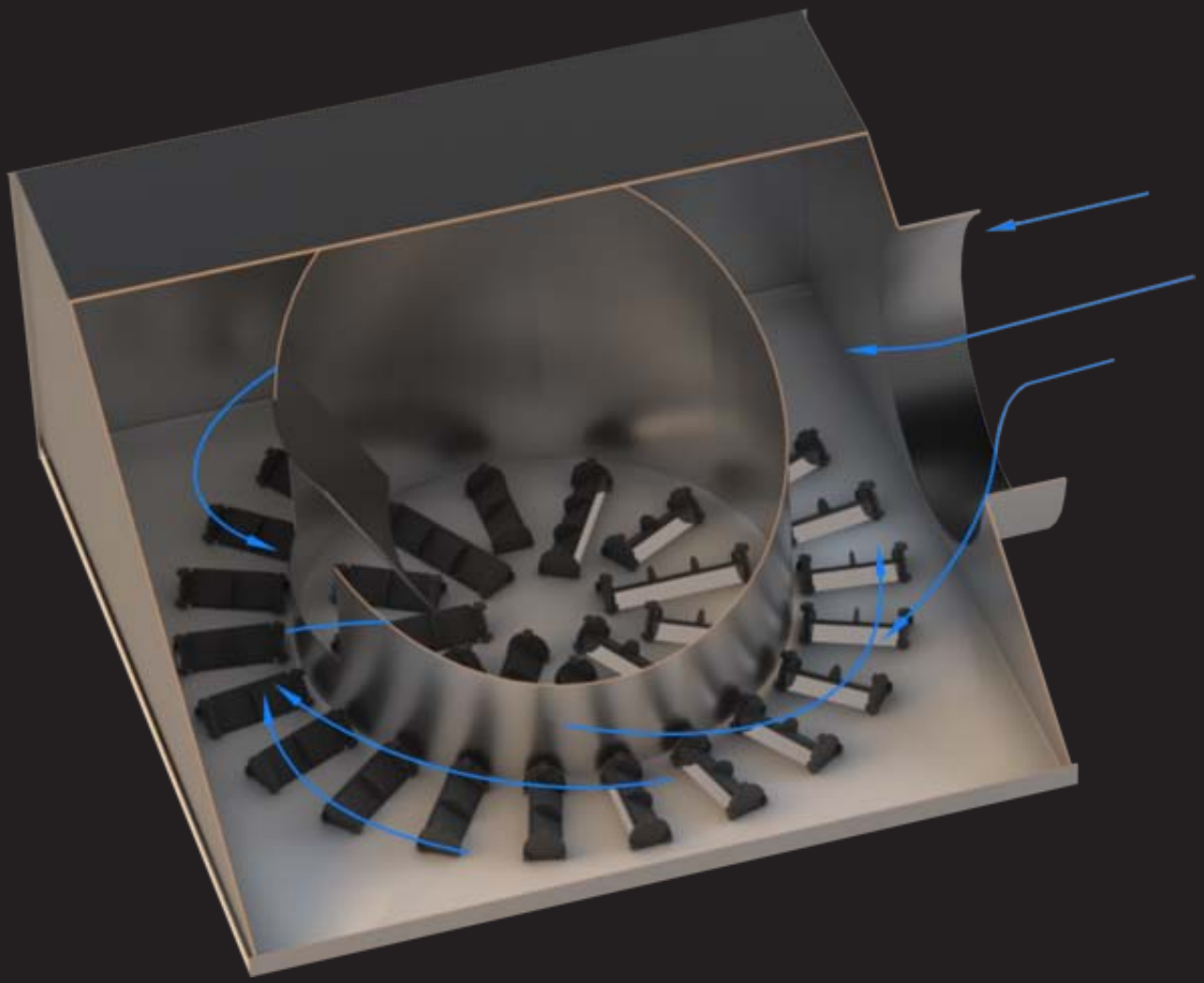
## How to Specify AXO-TWIN

Supply and mounting of dual flow high induction swirl diffuser for VAV systems, model AXO-TWIN, with individually adjustable radial vanes. Diffuser must self-adapt to increased cfm in order to let the air pass through more induction vanes, resulting in a more stable performance in VAV applications. Adjustment shall be automatic, without the need for controls nor electricity. Dual-chamber plenum made of galvanized steel, with a polymeric membrane allowing the air to access the inner chamber of the plenum for higher cfm. The diffuser is provided with a gasket on the back to ensure airtight contact with the plenum. Face panel made in galvanized steel powder coated in white M9016. ABS adjustable diffusion vanes shall have airflow straighteners on the back of the vanes. By EffectiV HVAC / MADEL.

## How to Order AXO-TWIN Series

**AXO-TWIN -AB 24 /M9016**

| | | |
|---|---|---|
| **Finish** | **M9016** | Powder Coated RAL 9016 |
| | **RAL** | Other RAL color |
| **Dimension** | **24** | 23.75” x 23.75” |
| **Induction Vanes Color** | **AB** | White Induction Vanes |
| | **AN** | Black Induction Vanes |





# AXP

## Aluminum Round Swirl Diffuser

EFFECTIV™

Nov 15 2020

# AXP SERIES
## Aluminum Round Swirl Diffuser



**AXP**
**by MADEL®**

- Fixed swirl diffusion pattern
- Commercial and industrial applications
- Heavy-gauge spun aluminum construction
- Duct mounted or drywall mounted
- Ideal for heating, cooling and VAV applications
- Available in imperial and metric standard dimensions

AXP series round swirl diffusers by EffectiV HVAC™ and MADEL® are designed to supply air in heating, air conditioning and ventilation applications, in premises with ceilings 8.5 up to 13 feet (2.6 up to 4 meters) high and with temperature differential up to 22ºF (12ºC). They are suitable for multiple types of commercial buildings.

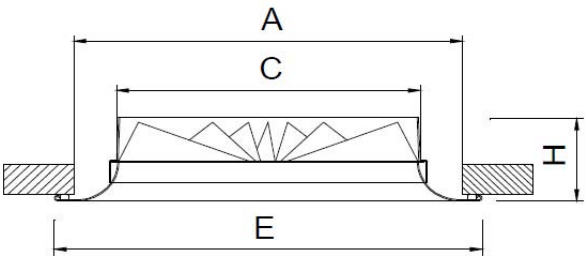
Their round shape together with the helical design of their vanes cause a stable swirl diffusion of the air stream, obtaining a high induction rate and reducing the stratification.

They can be mounted in drywall ceilings or directly on exposed duct.

| Neck Diameter | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 5”(125 mm) | 0.065 | 32 | 79 |
| 6”(160 mm) | 0.097 | 47 | 129 |
| 8”(200 mm) | 0.143 | 71 | 159 |
| 10”(250 mm) | 0.207 | 103 | 229 |
| 12”(315 mm) | 0.413 | 203 | 347 |

**Note: if higher cfm is required, use oversized face with PLRR plenum**

## AXP Dimensions




| | Duct Diameter | A | C | E | H |
|---|---|---|---|---|---|
| Imperial | 5” | 7 9/16" | 4 27/32" | 9 1/16" | 2 61/64" |
| | 6” | 8 15/16" | 6 7/32" | 10 5/16" | 3 61/64" |
| | 8” | 10 5/8" | 7 51/64" | 12 1/64" | 2 61/64" |
| | 10” | 12 19/32" | 9 49/64" | 13 31/32" | 2 61/64" |
| | 12” | 15 5/64" | 12 21/64" | 16 29/64" | 4 11/32" |
| Metric | 125 mm | 192 | 123 | 230 | 75 |
| | 160 mm | 227 | 158 | 262 | 75 |
| | 200 mm | 270 | 198 | 305 | 75 |
| | 250 mm | 320 | 248 | 355 | 75 |
| | 315 mm | 383 | 313 | 418 | 85 |

## Some Applications

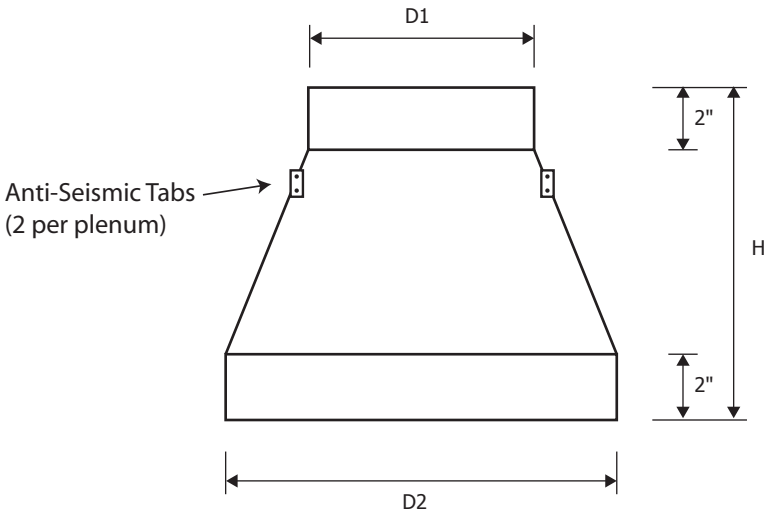
- Great for cooling and ventilation
- Closed drywall ceilings or open ceilings with exposed sprial duct
- Offices and Meeting Rooms
- Restaurants, Bars, Hotels, Stores
- VAV Applications
- Comfort-critical applications
- Commercial and Industrial



## PLRR Plenum

Optional plenum used to equalize the air (specify with EQ air equalizing grid option), to use an oversized face with a given duct diameter or to add a special damper to AXP diffusers.

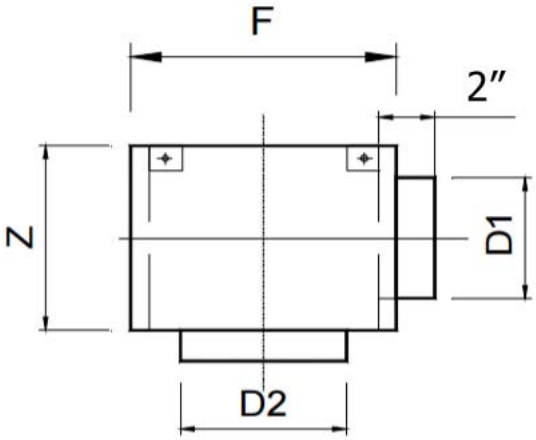
| Model | Duct | D1 | D2 | H |
|---|---|---|---|---|
| PLRR 0504 | 4” | 3 7/8 | 5 | 6 |
| PLRR 0505 | 5” | 4 7/8 | 5 | 6 |
| PLRR 0605 | 5” | 4 7/8 | 6 3/8 | 6 |
| PLRR 0606 | 6” | 5 7/8 | 6 3/8 | 6 |
| PLRR 0805 | 5” | 4 7/8 | 8 | 8 |
| PLRR 0806 | 6” | 5 7/8 | 8 | 8 |
| PLRR 0808 | 8” | 7 7/8 | 8 | 8 |
| PLRR 1006 | 6” | 5 7/8 | 10 | 8 |
| PLRR 1008 | 8” | 7 7/8 | 10 | 8 |
| PLRR 1010 | 10” | 9 7/8 | 10 | 8 |
| PLRR 1208 | 8” | 7 7/8 | 12 3/8 | 10 |
| PLRR 1210 | 10” | 9 7/8 | 12 3/8 | 10 |
| PLRR 1212 | 10” | 9 7/8 | 12 3/8 | 10 |



## PLXP Plenum

Optional plenum with side connection used when space in the celiing is limited, when acoustical performance is important or to add a special damper to AXP diffusers.

| Model | Duct | D1 | D2 | F | Z |
|---|---|---|---|---|---|
| **PLXP 05** | 4” | 3 7/8 | 5 | 8 | 6 |
| **PLXP 06** | 5” | 4 7/8 | 6 19/64 | 10 | 7 |
| **PLXP 08** | 6” | 5 7/8 | 8 | 12 | 10 |
| **PLXP 10** | 8” | 7 7/8 | 10 | 15 | 11 |
| **PLXP 12** | 10” | 9 7/8 | 12 13/32 | 19 | 14 |




## AXP Performance Data

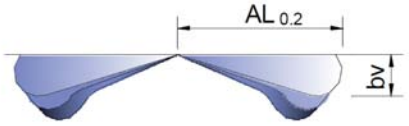
| Neck Size | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .002 | .006 | .010 | .016 | .022 | .031 | .040 |
| 5” (125mm) | CFM | 27 | 41 | 55 | 68 | 82 | 95 | 109 |
| | Pressure Loss (in.w.g.) | 0.016 | 0.039 | 0.075 | 0.119 | 0.161 | 0.241 | 0.361 |
| | NC | < 15 | < 15 | 18 | 26 | 32 | 37 | 40 |
| | Throw (ft) - Coanda Effect | 3-4-7 | 4-6-10 | 5-8-12 | 6-10-15 | 7-11-17 | 8-13-19 | 9-14-22 |
| | Throw (ft) - No Ceiling Effect | 2-3-5 | 3-5-7 | 4-6-9 | 4-7-11 | 5-8-13 | 6-10-15 | 7-11-16 |
| 6” (160mm) | CFM | 43 | 65 | 87 | 108 | 130 | 152 | 173 |
| | Pressure Loss (in.w.g.) | 0.021 | 0.053 | 0.099 | 0.16 | 0.239 | 0.335 | 0.446 |
| | NC | < 15 | < 15 | 18 | 25 | 30 | 35 | 39 |
| | Throw (ft) - Coanda Effect | 3-5-8 | 5-7-11 | 6-9-14 | 7-11-17 | 8-13-20 | 9-15-22 | 10-16-24 |
| | Throw (ft) - No Ceiling Effect | 2-4-6 | 3-6-8 | 4-7-11 | 5-8-13 | 6-10-15 | 7-11-17 | 7-12-18 |
| 8” (200mm) | CFM | 70 | 105 | 140 | 175 | 209 | 244 | 279 |
| | Pressure Loss (in.w.g.) | 0.025 | 0.061 | 0.114 | 0.187 | 0.275 | 0.386 | 0.517 |
| | NC | < 15 | 20 | 27 | 33 | 37 | 41 | 45 |
| | Throw (ft) - Coanda Effect | 3-6-9 | 5-8-12 | 6-10-15 | 7-12-18 | 8-14-21 | 9-16-23 | 10-17-26 |
| | Throw (ft) - No Ceiling Effect | 3-4-7 | 4-6-9 | 5-7-11 | 5-9-13 | 6-10-15 | 7-12-17 | 8-13-19 |
| 10” (250mm) | CFM | 109 | 164 | 218 | 273 | 327 | 382 | 436 |
| | Pressure Loss (in.w.g.) | 0.029 | 0.071 | 0.132 | 0.178 | 0.32 | 0.451 | 0.601 |
| | NC | < 15 | 22 | 29 | 34 | 39 | 42 | 45 |
| | Throw (ft) - Coanda Effect | 4-6-9 | 5-8-13 | 6-10-16 | 8-13-19 | 9-15-22 | 10-16-25 | 11-18-27 |
| | Throw (ft) - No Ceiling Effect | 3-5-7 | 4-6-9 | 5-8-12 | 6-9-14 | 7-11-16 | 7-12-19 | 8-14-21 |
| 12” (315mm) | CFM | 168 | 252 | 335 | 419 | 503 | 587 | 671 |
| | Pressure Loss (in.w.g.) | 0.031 | 0.075 | 0.141 | 0.229 | 0.343 | 0.481 | 0.645 |
| | NC | < 15 | 21 | 29 | 35 | 41 | 45 | > 45 |
| | Throw (ft) - Coanda Effect | 3-6-8 | 5-8-12 | 6-10-15 | 7-12-17 | 8-13-20 | 9-15-23 | 10-17-25 |
| | Throw (ft) - No Ceiling Effect | 3-4-6 | 3-6-9 | 4-7-11 | 5-9-13 | 6-10-15 | 7-11-17 | 8-13-19 |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

# AXP Performance Data (continued)

| Delta T Correction Factors | | |
|---|---|---|
| Δ T (F) | Kh | KI |
| 0 | 0.040 | 1 |
| -2 | 0.046 | 0.955 |
| -4 | 0.053 | 0.92 |
| -6 | 0.059 | 0.89 |
| -8 | 0.065 | 0.875 |
| -10 | 0.075 | 0.855 |
| -12 | 0.086 | 0.835 |
| -15 | 0.1 | 0.82 |
| -18 | 0.12 | 0.815 |




**bv= kh x Throw**

**Throw'(Δ T)= KI x Throw**

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Induction Ratio | | | | | |
|---|---|---|---|---|---|
| **Throw (ft)** | **5"D 125mm** | **6"D 160mm** | **8"D 200mm** | **10"D 250mm** | **12"D 315mm** |
| **4** | 8 | 7 | 6 | 5 | 5 |
| **6** | 14 | 13 | 11 | 10 | 8 |
| **8** | 21 | 19 | 16 | 14 | 13 |
| **10** | 28 | 26 | 21 | 18 | 16 |
| **15** | 47 | 43 | 35 | 32 | 27 |
| **20** | 71 | 64 | 52 | 47 | 41 |
| **25** | 92 | 85 | 71 | 64 | 53 |
| **30** | 125 | 120 | 91 | 81 | 72 |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

| Temperature Difference Ratio | | | | | |
|---|---|---|---|---|---|
| **Throw (ft)** | **5"D 125mm** | **6"D 160mm** | **8"D 200mm** | **10"D 250mm** | **12"D 315mm** |
| **4** | 0.045 | 0.06 | 0.072 | 0.088 | 0.12 |
| **6** | 0.03 | 0.042 | 0.045 | 0.059 | 0.08 |
| **8** | 0.023 | 0.032 | 0.036 | 0.046 | 0.064 |
| **10** | 0.019 | 0.027 | 0.029 | 0.038 | 0.051 |
| **15** | 0.01 | 0.018 | 0.022 | 0.027 | 0.037 |
| **20** | | 0.011 | 0.017 | 0.021 | 0.028 |
| **25** | | | 0.01 | 0.018 | 0.024 |
| **30** | | | | 0.012 | 0.02 |

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

## How to Specify AXP

Supply and mounting of fixed air pattern round swirl diffuser AXP, constructed from aluminum and powder coated in white M9016. By EffectiV HVAC / MADEL.

## How to Order AXP Series

| AXP | -EQ | 08 | + PLRR-EQ 0806 | | | |
|---|---|---|---|---|---|---|
| | | | **OPTIONAL PLENUM** | | | |
| | | | **PLRR** | | | |
| | | | **PLXP** | | | |
| | | **DIMENSION** | **Imperial** | | **Metric** | |
| | | | **05** | 5”D | **125** | 125 mm |
| | | | **06** | 6”D | **160** | 160 mm |
| | | | **08** | 8”D | **200** | 200 mm |
| | | | **10** | 10”D | **250** | 250 mm |
| | | | **12** | 12”D | **315** | 315 mm |
| | **OPTIONS** | | **EQ** | Air Equalizing Grid (Perforated Plate) | | |



# BWC

## Adjustable Steel Ventilation Valves

EFFECTiV™

Nov 15 2020

# BWC SERIES
## Steel Adjustable Round Ventilation Valves



BWC-N

- Ideal for residential applications
- Rotate core clockwise or counter-clockwise to adjust airflow
- Higher quality than plastic
- Comes with gasket to avoid air leaks

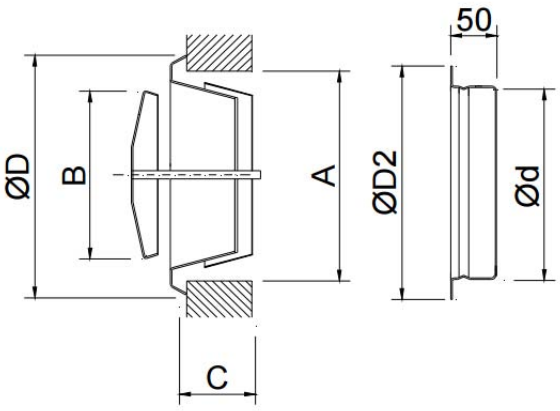
BWC series valves are designed for the air supply or air exhaust in air conditioning, ventilation or heating installations.

Especially suitable for air exhaustion in washrooms and for ventilation installation in houses, apartments, offices, schools and hospitals.

It is mounted in walls or on duct. BWC valves allow for high airflow pass obtaining good results in sound pressure performance. Flow is easily adjusted by turning the central part of the valve.

| Neck Diameter | BWC-N | |
|---|---|---|
| | Min cfm | Max cfm |
| 4” (100 mm) | 6 | 88 |
| 5” (125 mm) | 12 | 129 |
| 6” (150 mm) | 12 | 147 |
| 8” (200 mm) | 18 | 259 |

## BWC-N Dimensions




| Duct Diameter | A | B | C | Ød | ØD2 | ØD |
|---|---|---|---|---|---|---|
| 4” | 4.09” | 2.95” | 1.57” | 3.9” | 4.92” | 5.39” |
| 5” | 5.08” | 3.9” | 1.81” | 4.88” | 5.91” | 6.46” |
| 6” | 6.65” | 5.08” | 2.13” | 5.9” | 6.91” | 7.75” |
| 8” | 8.23” | 6.18” | 2.48” | 7.83” | 8.85” | 9.76” |

## How to Specify BWC

Supply and mounting of circular valve with adjustable core NWC-N for extract or air supply with mounting neck series BWC constructed from galvanized steel and powder coated in white RAL9016, by EffectiV HVAC.

## How to Order BWC Series

| BWC | -N | 04 | | | | |
|---|---|---|---|---|---|---|
| | | | Imperial | | Metric | |
| | | Neck Diameter | 04 | 4”D | 100 | 100 mm |
| | | | 05 | 5”D | 125 | 125 mm |
| | | | 06 | 6”D | 150 | 150 mm |
| | | | 08 | 8”D | 200 | 200 mm |
| | | | -N | Supply and Return | | |





# DCG

## Adjustable Aluminum Round Diffusers

EFFECTIV™

March 8 2023

# DCG SERIES
## Aluminum Adjustable Round Diffusers



**DCG**
**by MADEL®**

- Adjust core up and down to move from horizontal to vertical airflow
- Architecturally appealing lines and finish
- Choice of manual adjustment, thermodynamic or actuator controlled
- Ideal for heating and cooling applications with high ceilings
- Heavy-gauge spun aluminum construction
- Large cone profile allows for real vertical flow
- Duct mounted or drywall mounted
- Available in imperial and metric dimensions

| Neck Diameter | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 6”(160 mm) | 0.215 | 125 | 240 |
| 8”(200 mm) | 0.338 | 200 | 390 |
| 10”(250 mm) | 0.527 | 310 | 470 |
| 12”(315 mm) | 0.839 | 490 | 950 |
| 14”(355 mm) | 1.035 | 610 | 1280 |
| 16”(400 mm) | 1.345 | 795 | 1610 |
| 18”(450 mm) | 1.711 | 920 | 1560 |
| 20”(500 mm) | 2.110 | 1110 | 1860 |

DCG Aluminum Adjustable Round Diffusers by EffectiV HVAC™ and MADEL® are recommended for heating, ventilating, and cooling applications. DCG diffusers provide a 360° air diffusion pattern and excellent performance in VAV systems.

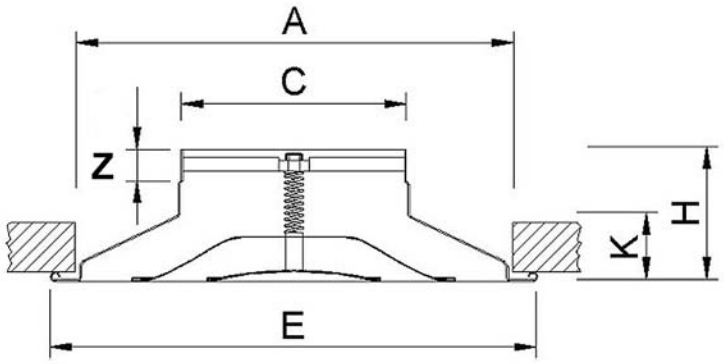
Full adjustability is possible by rotating the inner core clockwise or counter-clockwise to move the cones up or down, changing from horizontal projection to vertical projection in accordance with the supply air temperature. DCG diffusers provide great performance in temperature differentials up to 22ºF (12ºC) and are suitable for premises with ceilings 8.5 ft (2.6 m) and higher.

Available with manual or automatic adjustment of the airflow for optimized comfort in heating and air conditioning.

Original design by Lievore, Altherr & Molina for Madel.



## DCG Dimensions




| | Duct Diameter | A | C | E | H | K | Z |
|---|---|---|---|---|---|---|---|
| Imperial | 6” | 11 59/64 | 5 3/4 | 13 5/16 | 4 15/16 | 1 47/64 | 1 |
| | 8” | 15 5/32 | 7 3/4 | 16 47/64 | 4 17/32 | 2 9/32 | 1 |
| | 10” | 18 17/64 | 9 3/4 | 19 3/8 | 4 31/64 | 2 1/4 | 1 |
| | 12” | 22 13/64 | 11 3/4 | 23 17/64 | 6 19/32 | 3 5/32 | 1 |
| | 14” | 24 13/16 | 13 29/32 | 26 1/16 | 5 33/64 | 3 17/64 | 1 |
| | 16” | 24 13/16 | 15 19/32 | 26 1/16 | 5 5/32 | 2 59/64 | 1 |
| | 18” | 31 5/32 | 17 19/32 | 32 3/4 | 6 13/16 | 4 11/64 | 1 |
| | 20” | 31 5/32 | 19 9/16 | 32 3/4 | 6 27/64 | 3 13/16 | 1 |
| Metric | 160 mm | 303 | 157 | 331 | 101 | 44 | 25 |
| | 200 mm | 385 | 197 | 425 | 115 | 58 | 25 |
| | 250 mm | 464 | 247 | 492 | 114 | 57 | 25 |
| | 315 mm | 564 | 313 | 591 | 137 | 80 | 25 |
| | 355 mm | 630 | 353 | 662 | 140 | 83 | 25 |
| | 400 mm | 630 | 398 | 662 | 131 | 74 | 25 |
| | 450 mm | 793 | 447 | 832 | 173 | 106 | 25 |
| | 500 mm | 793 | 497 | 832 | 163 | 97 | 25 |

## Some Applications

- Seasonal heating and/or cooling
- Open ceilings/exposed ducts
- High ceilings
- Restaurants, Bars, Hotels
- Movie Theaters, Stores, Offices, Car Dealers
- Entrance halls (vertical blast)
- Indoor Pools and corrosion-sensitive applications



# Available Adjustment Mechanisms

## DCG

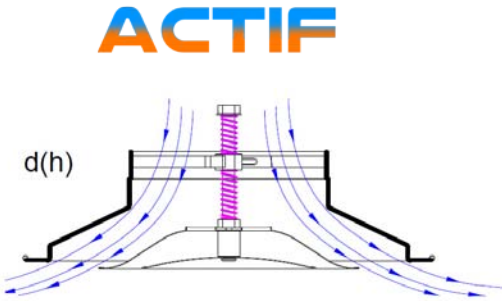
Manually adjustable by rotating the inner core clockwise or counter-clockwise to move the cones up or down

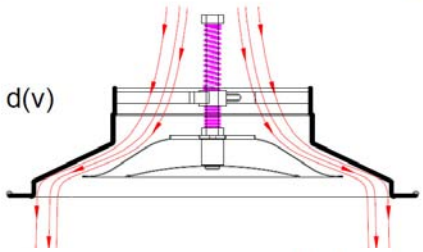
## DCG-ACTIF

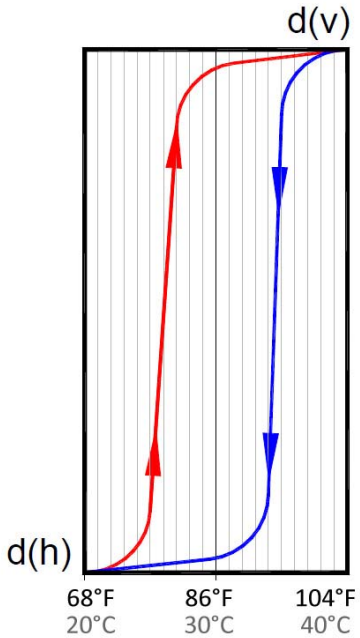
*Energy Efficiency Product*

Autonomous adjustment of air jet direction in reaction to supplied air temperature, by means of a thermodynamic spring. Designed to be used in premises with varying heights in excess of 13 feet (4 m) and with temperature differentials of up to 22ºF (12ºC).




15 minutes adjustment time from d(h) to d(v)

## DCG-M150-L

Regulable diffuser by means of an On/Off servomotor.

# DCG Performance Data

ACTIF Cooling

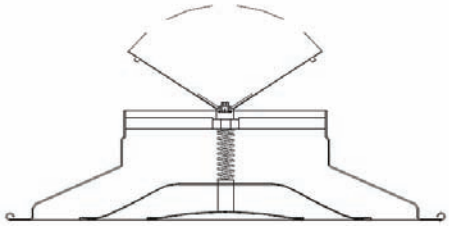
| Neck Size | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 | .160 |
| 6” (160mm) | CFM | 81 | 101 | 122 | 142 | 162 | 203 | 244 | 284 | 325 |
| | Pressure Loss (in.w.g.) | 0.026 | 0.044 | 0.057 | 0.076 | 0.098 | 0.152 | 0.152 | 0.289 | 0.374 |
| | NC | < 15 | < 15 | 15 | 19 | 22 | 28 | 33 | 37 | 40 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-4-6 | 3-5-7 | 3-6-8 | 4-7-10 | 5-9-13 | 6-11-16 | 8-13-19 | 9-15-23 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-4-5 | 3-4-6 | 3-5-7 | 4-6-10 | 5-8-12 | 6-10-15 | 7-11-17 |
| 8” (200mm) | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 | 559 |
| | Pressure Loss (in.w.g.) | 0.026 | 0.04 | 0.057 | 0.078 | 0.101 | 0.158 | 0.158 | 0.311 | 0.407 |
| | NC | < 15 | 19 | 24 | 28 | 31 | 37 | > 40 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-9-13 | 7-11-17 | 8-13-20 | 9-16-23 |
| | Throw (ft) - No Ceiling Effect | 1-2-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-13 | 6-10-15 | 7-12-17 |
| 10” (250mm) | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 | 873 |
| | Pressure Loss (in.w.g.) | 0.046 | 0.072 | 0.103 | 0.141 | 0.183 | 0.287 | 0.287 | 0.565 | 0.736 |
| | NC | < 15 | < 15 | 21 | 26 | 31 | 39 | > 40 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 3-5-8 | 4-7-10 | 5-8-12 | 6-10-14 | 7-11-17 | 8-14-21 | 10-17-26 | 12-20-30 | 14-23-35 |
| | Throw (ft) - No Ceiling Effect | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-11-16 | 8-13-19 | 9-15-23 | 11-18-26 |
| 12” (315mm) | CFM | 335 | 419 | 503 | 587 | 671 | 839 | 1006 | 1174 | |
| | Pressure Loss (in.w.g.) | 0.048 | 0.076 | 0.11 | 0.152 | 0.201 | 0.319 | 0.319 | 0.638 | |
| | NC | < 15 | 17 | 23 | 29 | 34 | > 40 | > 40 | > 40 | |
| | Throw (ft) - Coanda Effect | 4-7-10 | 5-8-12 | 5-9-14 | 6-10-15 | 7-11-17 | 8-13-20 | 9-15-22 | 10-17-25 | |
| | Throw (ft) - No Ceiling Effect | 3-5-8 | 4-6-9 | 4-7-10 | 5-8-11 | 5-8-13 | 6-10-15 | 7-11-17 | 8-13-19 | |
| 14” (355mm) | CFM | 428 | 535 | 641 | 748 | 855 | 1069 | 1283 | 1497 | |
| | Pressure Loss (in.w.g.) | 0.036 | 0.056 | 0.08 | 0.11 | 0.143 | 0.225 | 0.225 | 0.442 | |
| | NC | < 15 | 16 | 22 | 27 | 31 | 38 | > 40 | > 40 | |
| | Throw (ft) - Coanda Effect | 4-8-11 | 5-9-13 | 6-10-15 | 7-11-17 | 7-12-18 | 9-14-22 | 10-16-25 | 11-18-27 | |
| | Throw (ft) - No Ceiling Effect | 3-6-8 | 4-7-10 | 4-7-11 | 5-8-13 | 6-9-14 | 6-11-16 | 7-12-18 | 8-14-21 | |
| 16” (400mm) | CFM | 559 | 698 | 838 | 977 | 1117 | 1396 | 1676 | 1955 | |
| | Pressure Loss (in.w.g.) | 0.045 | 0.066 | 0.091 | 0.118 | 0.149 | 0.219 | 0.219 | 0.392 | |
| | NC | < 15 | 21 | 26 | 31 | 35 | > 40 | > 40 | > 40 | |
| | Throw (ft) - Coanda Effect | 5-8-12 | 5-9-13 | 6-10-15 | 6-11-16 | 7-12-17 | 8-13-20 | 9-15-22 | 10-16-24 | |
| | Throw (ft) - No Ceiling Effect | 4-6-9 | 4-7-10 | 4-7-11 | 5-8-12 | 5-9-13 | 6-10-15 | 7-11-16 | 7-12-18 | |
| 18” (450mm) | CFM | 707 | 884 | 1060 | 1237 | 1414 | 1767 | 2121 | 2474 | |
| | Pressure Loss (in.w.g.) | 0.049 | 0.08 | 0.12 | 0.169 | 0.227 | 0.371 | 0.371 | 0.781 | |
| | NC | 21 | 28 | 33 | 38 | > 40 | > 40 | > 40 | > 40 | |
| | Throw (ft) - Coanda Effect | 5-9-13 | 6-10-15 | 7-11-17 | 7-12-19 | 8-14-20 | 9-16-23 | 10-18-26 | 12-19-29 | |
| | Throw (ft) - No Ceiling Effect | 4-6-10 | 4-7-11 | 5-8-13 | 6-9-14 | 6-10-15 | 7-12-18 | 8-13-20 | 9-15-22 | |
| 20” (500mm) | CFM | 873 | 1091 | 1309 | 1527 | 1745 | 2182 | 2618 | 3054 | |
| | Pressure Loss (in.w.g.) | 0.037 | 0.056 | 0.079 | 0.106 | 0.136 | 0.209 | 0.209 | 0.392 | |
| | NC | 25 | 30 | 33 | 36 | 39 | > 40 | > 40 | > 40 | |
| | Throw (ft) - Coanda Effect | 5-9-13 | 6-10-15 | 7-12-17 | 8-13-20 | 9-14-21 | 10-17-25 | 11-19-29 | 13-21-32 | |
| | Throw (ft) - No Ceiling Effect | 4-7-10 | 5-8-11 | 5-9-13 | 6-10-15 | 6-11-16 | 8-13-19 | 9-14-22 | 10-16-24 | |

**Performance Notes**

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

# DCG-R3G Pressure Loss & Sound Power Level Correction

| Damper Correction Factor | | d(h) | | d(v) | |
|---|---|---|---|---|---|
| | | 100% Open | 50% Open | 100% Open | 50% Open |
| 6''D (160mm) | Pressure Loss | x 1.2 | x 4.7 | x 1.2 | x 4.7 |
| | NC | +1.4 | +16 | +1.4 | +16 |
| 8''D (200mm) | Pressure Loss | x 1.1 | x 3.6 | x 1.1 | x 3.6 |
| | NC | +1.3 | +16 | +0.8 | +15 |
| 10''D (250mm) | Pressure Loss | x 1.1 | x 3.7 | x 1.1 | x 3.7 |
| | NC | +3.4 | +19 | +3.8 | +20 |
| 12''D (315mm) | Pressure Loss | x 1.5 | x 6.5 | x 1.5 | x 6.5 |
| | NC | +1.3 | +16 | +0.6 | +15 |
| 14''D (350mm) | Pressure Loss | x 1.2 | x 8 | x 1.2 | x 8 |
| | NC | +2.2 | +11 | +1.6 | +10 |
| 16''D (400mm) | Pressure Loss | x 1.1 | x 3.4 | x 1.1 | x 3.4 |
| | NC | +2.2 | +17 | +1.6 | +16 |
| 18''D (450mm) | Pressure Loss | x 1.2 | x 7.1 | x 1.2 | x 7.1 |
| | NC | +3.2 | +17 | +3.5 | +17 |
| 20''D (500mm) | Pressure Loss | x 1.2 | x 5.8 | x 1.2 | x 5.8 |
| | NC | +2.2 | +18 | +1.5 | +18 |



**DCG-R3G**

Integrated Butterfly Volume Damper

**(N/A for Imperial 6" and 12")**



**OBD**

Opposed Blade Damper

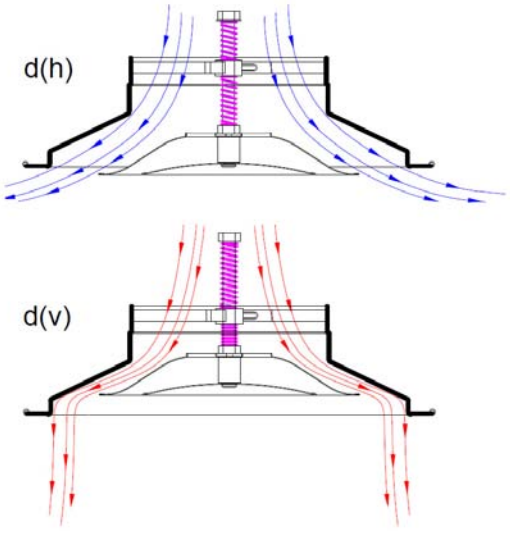


**RSBD**

Radial Sliding Blade Damper

**(only for Imperial 6" and 12")**

# Downward Projection of Heated Air & Vertical Adjustment of Core



# Downward Projection of Heated Air & Vertical Adjustment of Core

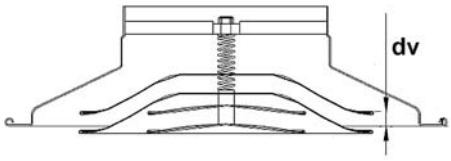
| Neck Size | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 | .160 |
| 6” (160mm) | CFM | 81 | 101 | 122 | 142 | 162 | 203 | 244 | 284 | 325 |
| | dv = 13/64” (5 mm) | 5-2-2 | 7-3-2 | 9-4-3 | 10-5-4 | 12-6-4 | 16-8-6 | 20-10-7 | 24-12-9 | 29-14-10 |
| | dv = 5/16” (8 mm) | 8-4-3 | 10-5-4 | 13-6-5 | 16-7-6 | 18-9-7 | 24-12-9 | 30-15-11 | 37-18-14 | 43-21-16 |
| | dv = 19/32” (15 mm) | 11-5-4 | 14-7-5 | 18-9-6 | 22-10-8 | 26-12-9 | 34-16-12 | 43-20-15 | 51-25-19 | 61-29-22 |
| 8” (200mm) | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 | 559 |
| | dv = 5/16” (8 mm) | 10-6-5 | 11-7-6 | 13-8-6 | 14-9-7 | 15-10-8 | 18-11-9 | 20-13-10 | 22-14-11 | 24-15-12 |
| | dv = 25/64” (10 mm) | 12-8-6 | 14-9-7 | 15-10-8 | 17-11-8 | 19-12-9 | 22-14-11 | 25-16-12 | 27-17-14 | 30-19-15 |
| | dv = 29/32” (23 mm) | 16-10-8 | 18-12-9 | 21-13-10 | 23-15-11 | 25-16-12 | 29-19-14 | 33-21-16 | 36-23-18 | 40-25-20 |
| 10” (250mm) | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 | 873 |
| | dv = 13/64” (5 mm) | 11-5-5 | 13-7-6 | 15-8-6 | 17-9-7 | 19-10-8 | 23-12-10 | 27-13-11 | 30-15-13 | 34-17-14 |
| | dv = 25/64” (10 mm) | 16-8-6 | 19-9-8 | 22-11-9 | 25-12-10 | 27-14-11 | 33-16-14 | 38-19-16 | 43-22-18 | 48-24-20 |
| | dv = 45/64” (18 mm) | 19-10-8 | 23-12-10 | 27-14-11 | 31-15-13 | 34-17-14 | 41-21-17 | 48-24-20 | 54-27-23 | 60-30-25 |
| 12” (315mm) | CFM | 335 | 419 | 503 | 587 | 671 | 839 | 1006 | 1174 | |
| | dv = 33/64” (13 mm) | 12-7-5 | 15-9-7 | 18-11-8 | 22-13-10 | 25-15-11 | 32-19-14 | 39-24-17 | 46-28-20 | |
| | dv = 25/32” (20 mm) | 16-10-7 | 20-12-9 | 25-15-11 | 29-18-13 | 34-21-15 | 43-26-19 | 53-32-23 | 62-38-27 | |
| | dv = 1 1/16” (27 mm) | 22-13-10 | 28-17-12 | 34-21-15 | 40-24-18 | 46-28-20 | 59-36-26 | 72-44-32 | 85-52-37 | |
| 14” (355mm) | CFM | 428 | 535 | 641 | 748 | 855 | 1069 | 1283 | 1497 | |
| | dv = 25/64” (10 mm) | 7-6-4 | 9-7-6 | 12-9-7 | 14-11-9 | 17-13-10 | 22-17-13 | 27-22-17 | 33-26-20 | |
| | dv = 19/32” (15 mm) | 12-9-7 | 15-12-9 | 19-15-12 | 23-18-14 | 27-21-16 | 35-28-22 | 44-35-27 | 53-42-33 | |
| | dv = 29/32” (23 mm) | 18-14-11 | 23-19-14 | 29-23-18 | 35-28-22 | 41-33-25 | 54-43-33 | 68-54-42 | 82-65-50 | |
| 16” (400mm) | CFM | 559 | 698 | 838 | 977 | 1117 | 1396 | 1676 | 1955 | 2234 |
| | dv = 13/64” (5 mm) | 13-9-7 | 16-11-9 | 19-13-10 | 21-15-12 | 24-17-13 | 29-20-16 | 34-24-19 | 39-27-22 | 44-31-25 |
| | dv = 5/16” (8 mm) | 18-13-10 | 22-15-12 | 26-18-15 | 30-21-17 | 34-23-19 | 41-28-23 | 48-33-27 | 55-38-31 | 62-43-34 |
| | dv = 35/64” (14 mm) | 24-17-14 | 30-20-16 | 35-24-19 | 40-27-22 | 45-31-25 | 54-37-30 | 63-44-35 | 73-50-40 | 82-56-46 |
| 18” (450mm) | CFM | 707 | 884 | 1060 | 1237 | 1414 | 1767 | 2121 | 2474 | |
| | dv = 45/64” (18 mm) | 17-10-8 | 20-12-10 | 23-14-11 | 26-16-12 | 28-17-14 | 33-20-16 | 38-23-18 | 42-26-20 | |
| | dv = 63/64” (25 mm) | 23-14-11 | 27-16-13 | 31-19-15 | 34-21-16 | 38-23-18 | 45-27-21 | 51-31-24 | 57-34-27 | |
| | dv = 1 3/8” (35 mm) | 28-17-14 | 33-20-16 | 38-23-18 | 42-26-20 | 47-28-22 | 55-33-26 | 63-38-30 | 70-42-33 | |
| 20” (500mm) | CFM | 873 | 1091 | 1309 | 1527 | 1745 | 2182 | 2618 | 3054 | |
| | dv = 45/64” (18 mm) | 13-8-7 | 15-9-8 | 18-11-9 | 20-12-10 | 22-14-11 | 26-16-14 | 31-19-16 | 35-21-18 | |
| | dv = 63/64” (25 mm) | 16-10-8 | 19-12-10 | 22-14-11 | 25-15-13 | 28-17-14 | 33-21-17 | 39-24-20 | 44-27-22 | |
| | dv = 1 3/8” (35 mm) | 23-14-12 | 27-17-14 | 31-19-16 | 35-22-18 | 39-24-20 | 47-29-24 | 54-34-28 | 62-38-32 | |

**Performance Notes**

- Vertical throw values (in ft) are respectively for **isothermal** and temperature differences of **9°F (5°C)** and **18°F (10°C)** in heating mode, all at **terminal velocity of 40 fpm**.

- dv is the vertical adjustment of the diffuser core and is measured by the core offset towards the inside of the diffuser, compared to its original horizontal position.

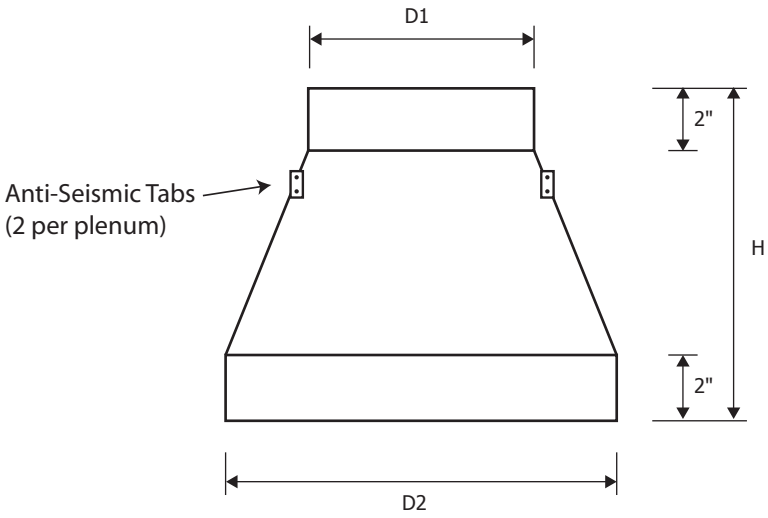
ACTIF Heating



## PLRR Plenum

Optional plenum used to equalize the air (specify with EQ air equalizing grid option), to use an oversized face with a given duct diameter, or to add a special damper to DCG diffusers.

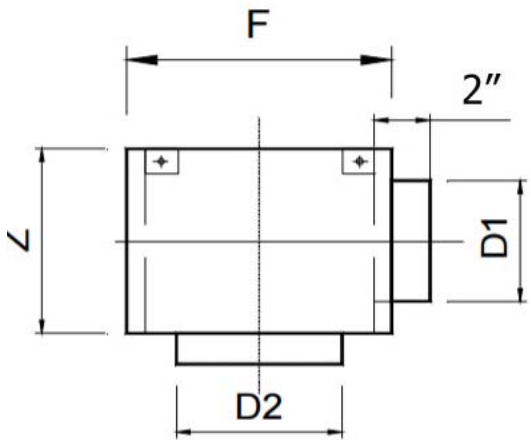
| Model | Duct | D1 | D2 | H |
|---|---|---|---|---|
| **PLRR 0504** | 4” | 3 7/8 | 5 | 6 |
| **PLRR 0505** | 5” | 4 7/8 | 5 | 6 |
| **PLRR 0605** | 5” | 4 7/8 | 6 3/8 | 6 |
| **PLRR 0606** | 6” | 5 7/8 | 6 3/8 | 6 |
| **PLRR 0805** | 5” | 4 7/8 | 8 | 8 |
| **PLRR 0806** | 6” | 5 7/8 | 8 | 8 |
| **PLRR 0808** | 8” | 7 7/8 | 8 | 8 |
| **PLRR 1006** | 6” | 5 7/8 | 10 | 8 |
| **PLRR 1008** | 8” | 7 7/8 | 10 | 8 |
| **PLRR 1010** | 10” | 9 7/8 | 10 | 8 |
| **PLRR 1208** | 8” | 7 7/8 | 12 3/8 | 10 |
| **PLRR 1210** | 10” | 9 7/8 | 12 3/8 | 10 |
| **PLRR 1212** | 10” | 9 7/8 | 12 3/8 | 10 |




## PLXP Plenum

Optional plenum with side connection used when space in the celiing is limited, when acoustical performance is important or to add a special damper to DCG diffusers.

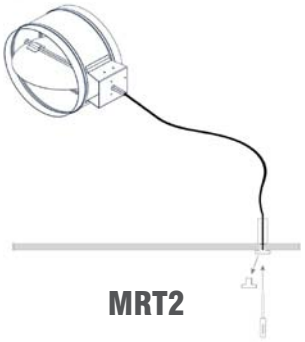
| Model | Duct | D1 | D2 | F | Z |
|---|---|---|---|---|---|
| **PLXP 05** | 4” | 3 7/8 | 5 | 8 | 6 |
| **PLXP 06** | 5” | 4 7/8 | 6 19/64 | 10 | 7 |
| **PLXP 08** | 6” | 5 7/8 | 8 | 12 | 10 |
| **PLXP 10** | 8” | 7 7/8 | 10 | 15 | 11 |
| **PLXP 12** | 10” | 9 7/8 | 12 13/32 | 19 | 14 |



## Air Volume Dampers for High Ceilings

EB2 dampers are recommended for AX6 diffusers installed in high ceilings.

There is no maximum cable length for EB2 dampers, they can be adjusted from anywhere in the room or from the mechanical room.



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

## How to Specify DCG

Supply and mounting of model DCG round diffuser with adjustable core which can be rotated up or down to supply air in a vertical or horizontal flow. Constructed from spun aluminum, powder coated in white M9016. By EffectiV HVAC / MADEL.

## How to Specify DCG-ACTIF

Supply and mounting of model DCG-ACTIF adjustable round diffuser. Autonomously thermally adjustable by means of a thermodynamic spring. Constructed from spun aluminum, powder coated in white M9016. By EffectiV HVAC / MADEL.

## How to Specify DCG-M150-L

Supply and mounting of model DCG-M150-L adjustable round diffuser. Adjustable by means of an On/Off servomotor. Constructed from spun aluminum, powder coated in white M9016. By EffectiV HVAC / MADEL.

## How to Order DCG Series

**DCG -R3G 08**

### Neck Diameter

| Imperial | | Metric | |
|---|---|---|---|
| **06** | 6”D | **160** | 160 mm |
| **08** | 8”D | **200** | 200 mm |
| **10** | 10”D | **250** | 250 mm |
| **12** | 12”D | **315** | 315 mm |
| **14** | 14”D | **350** | 350 mm |
| **16** | 16”D | **400** | 400 mm |
| **18** | 18”D | **450** | 450 mm |
| **20** | 20”D | **500** | 500 mm |

### Damper

| | |
|---|---|
| **R3G** | Butterfly Damper |
| **OBD** | Opposed Blade Damper |
| **RSBD** | Radial Sliding Blade Damper |

### Model

| | |
|---|---|
| **DCG** | Manual adjustment |
| **DCG-ACTIF** | Automatic thermal adjustment |
| **DCG-M150-L** | Regulable with a On/Off servomotor |



# DSO

## Aluminum Round Plaque Diffusers

EFFECTIV™

Nov 15 2020

# DSO SERIES
## Aluminum Round Plaque Diffusers



**DSO**
**by MADEL®**

- Architecturally appealing lines and finish
- Removable central disc facilitates installation and maintenance
- Heavy-gauge spun aluminum construction
- Duct mounted or drywal
- Ideal for heating and cooling applications
- Available in imperial and metric dimensions

| Neck Diameter | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 6”(160 mm) | 0.215 | 106 | 212 |
| 8”(200 mm) | 0.338 | 166 | 332 |
| 10”(250 mm) | 0.527 | 259 | 519 |
| 12”(315 mm) | 0.839 | 412 | 823 |

DSO Aluminum Round Plaque Diffusers by EffectiV HVAC™ and MADEL® are recommended for heating, ventilating, and cooling applications. DSO diffusers provide a 360° air diffusion pattern and excellent performance in VAV systems.

They can be mounted in false ceilings, suspended from ductwork or from the ceiling.

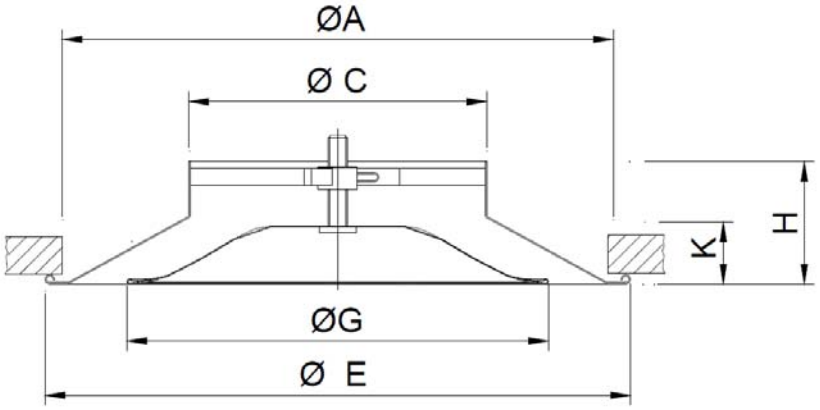
The removable central disc greatly facilitates installation and maintenance.

DSO diffusers provide great performance in temperature differentials up to 22ºF (12ºC) and are suitable for premises with ceilings 8.5 ft (2.6 m) up to 13 ft (4 m).

DSO Plaque diffusers meet the functional requirements of modern architecture. Its minimalist design fits perfectly in any kind of interior design.



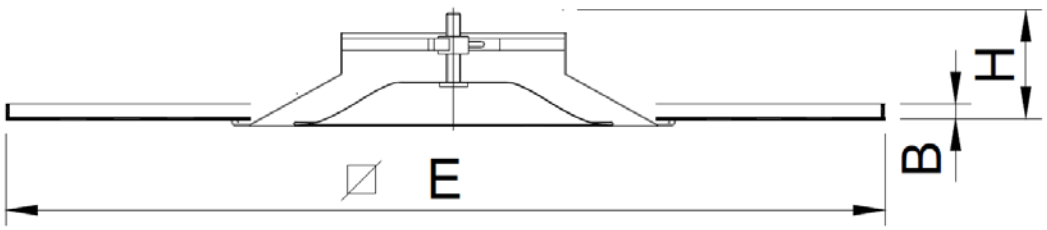
## DSO Dimensions




| | Duct Diameter | A | C | E | H | K |
|---|---|---|---|---|---|---|
| Imperial | 6” | 11 13/16 | 5 3/4 | 12 51/64 | 4 15/16 | 1 47/64 |
| | 8” | 15 43/54 | 7 3/4 | 16 47/64 | 4 17/32 | 2 9/32 |
| | 10” | 19 11/64 | 9 3/4 | 20 5/64 | 5 3/64 | 2 53/64 |
| | 12” | 21 31/32 | 11 3/4 | 22 41/64 | 6 19/32 | 3 5/32 |
| Metric | 160 mm | 300 | 157 | 325 | 101 | 44 |
| | 200 mm | 398 | 197 | 425 | 115 | 58 |
| | 250 mm | 487 | 248 | 510 | 128 | 72 |
| | 315 mm | 550 | 313 | 575 | 137 | 80 |

## DSO-MOD Dimensions






| | Duct Diameter | B | E | H |
|---|---|---|---|---|
| Imperial | 6” | 15/32 | 23 3/4 x 23 3/4 | 4 15/16 |
| | 8” | 15/32 | 23 3/4 x 23 3/4 | 4 17/32 |
| | 10” | 15/32 | 23 3/4 x 23 3/4 | 5 3/64 |
| | 12” | 15/32 | 23 3/4 x 23 3/4 | 6 19/32 |

## Some Applications

- Modern architecture
- Minimalist design
- Open ceilings/exposed ducts
- Restaurants, Bars, Hotels, Retail
- Office spaces
- Showrooms
- Indoor Pools and corrosion-sensitive applications



## DSO Performance Data

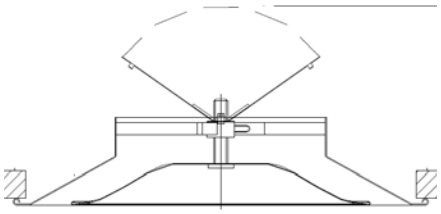
| Neck Size | Neck (fpm) Velocity | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 6” (160mm) | CFM | 59 | 79 | 98 | 118 | 137 | 157 | 196 | 236 | 275 |
| | Pressure Loss (in.w.g.) | 0.017 | 0.027 | 0.04 | 0.055 | 0.071 | 0.09 | 0.132 | 0.182 | 0.237 |
| | NC | < 15 | < 15 | < 15 | < 20 | < 20 | < 25 | < 30 | < 35 | > 40 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-3-4 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-15 |
| | Throw (ft) - No Ceiling Effect | 1-2-2 | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-12 |
| 8” (200mm) | CFM | 105 | 140 | 175 | 209 | 244 | 279 | 349 | 419 | |
| | Pressure Loss (in.w.g.) | 0.02 | 0.033 | 0.048 | 0.065 | 0.086 | 0.108 | 0.159 | 0.217 | |
| | NC | < 15 | < 15 | < 15 | < 20 | < 25 | < 25 | < 35 | > 40 | |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-10 | 4-7-11 | 6-9-14 | 7-11-17 | |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-7-10 | 5-8-12 | |
| 10” (250mm) | CFM | 164 | 218 | 273 | 327 | 382 | 436 | 545 | 654 | |
| | Pressure Loss (in.w.g.) | 0.031 | 0.05 | 0.074 | 0.101 | 0.133 | 0.166 | 0.245 | 0.335 | |
| | NC | < 15 | < 15 | < 15 | < 20 | < 25 | < 25 | < 35 | > 40 | |
| | Throw (ft) - Coanda Effect | 2-3-5 | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-10-15 | 7-12-18 | |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-6-9 | 5-8-11 | 5-9-14 | |
| 12” (315mm) | CFM | 236 | 314 | 393 | 471 | 550 | 628 | 785 | 942 | 1100 |
| | Pressure Loss (in.w.g.) | 0.03 | 0.05 | 0.073 | 0.1 | 0.13 | 0.164 | 0.241 | 0.329 | 0.43 |
| | NC | < 15 | < 15 | < 15 | < 20 | < 25 | < 25 | < 30 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 3-4-7 | 3-6-8 | 4-7-10 | 5-8-12 | 5-9-13 | 7-11-17 | 8-13-20 | 9-15-23 |
| | Throw (ft) - No Ceiling Effect | 2-2-4 | 2-3-5 | 3-4-6 | 3-5-8 | 3-6-9 | 4-7-10 | 5-8-13 | 6-10-15 | 7-12-17 |

**Performance Notes**

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

## DSO-R3G Pressure Loss & Sound Power Level Correction

| Damper Correction Factor | | 100% Open | 50% Open |
|---|---|---|---|
| 6''D (160mm) | Pressure Loss | x 1.3 | x 5.4 |
| | NC | +1.6 | +10.4 |
| 8''D (200mm) | Pressure Loss | x 1.2 | x 5.5 |
| | NC | +0.6 | +11.7 |
| 10''D (250mm) | Pressure Loss | x 1.3 | x 5.8 |
| | NC | +0.2 | +10.3 |
| 12''D (315mm) | Pressure Loss | x 1.3 | x 5.5 |
| | NC | -0.8 | +6.2 |



**DSO-R3G**

Integrated Butterfly Volume Damper

**(N/A for Imperial 6" and 12")**



**OBD**

Opposed Blade Damper



**RSBD**

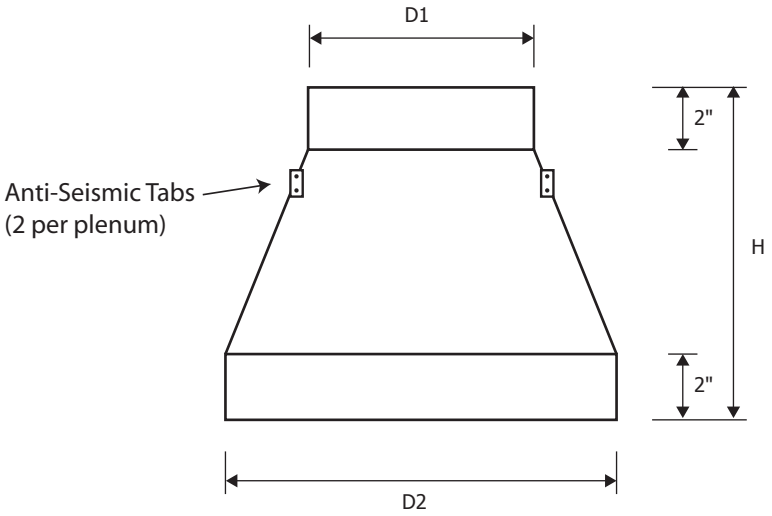
Radial Sliding Blade Damper

**(only for Imperial 6" and 12")**

## PLRR Plenum

Optional plenum used to equalize the air (specify with EQ air equalizing grid option), to use an oversized face with a given duct diameter, or to add a special damper to DCG diffusers.

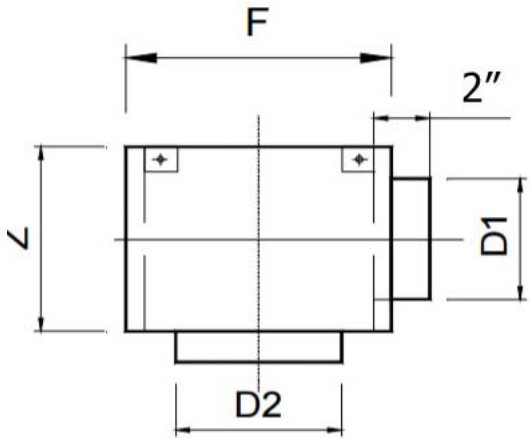
| Model | Duct | D1 | D2 | H |
|---|---|---|---|---|
| **PLRR 0605** | 5" | 4 7/8 | 6 3/8 | 6 |
| **PLRR 0606** | 6" | 5 7/8 | 6 3/8 | 6 |
| **PLRR 0805** | 5" | 4 7/8 | 8 | 8 |
| **PLRR 0806** | 6" | 5 7/8 | 8 | 8 |
| **PLRR 0808** | 8" | 7 7/8 | 8 | 8 |
| **PLRR 1006** | 6" | 5 7/8 | 10 | 8 |
| **PLRR 1008** | 8" | 7 7/8 | 10 | 8 |
| **PLRR 1010** | 10" | 9 7/8 | 10 | 8 |
| **PLRR 1208** | 8" | 7 7/8 | 12 3/8 | 10 |
| **PLRR 1210** | 10" | 9 7/8 | 12 3/8 | 10 |
| **PLRR 1212** | 10" | 9 7/8 | 12 3/8 | 10 |



## PLXP Plenum

Optional plenum with side connection used when space in the celiing is limited, when acoustical performance is important or to add a special damper to DCG diffusers.

| Model | Duct | D1 | D2 | F | Z |
|---|---|---|---|---|---|
| **PLXP 06** | 5” | 4 7/8 | 6 19/64 | 10 | 7 |
| **PLXP 08** | 6” | 5 7/8 | 8 | 12 | 10 |
| **PLXP 10** | 8” | 7 7/8 | 10 | 15 | 11 |
| **PLXP 12** | 10” | 9 7/8 | 12 13/32 | 19 | 14 |




## How to Specify DSO

Supply and mounting of model DSO Aluminum Round Plaque Diffuser with removable core for easier installation and maintenance. Constructed from spun aluminum, powder coated in white M9016. By EffectiV HVAC / MADEL.

## How to Order DSO Series

**DSO -R3G 08**

**Neck Diameter**

| Imperial | | Metric | |
|---|---|---|---|
| **06** | 6”D | **160** | 160 mm |
| **08** | 8”D | **200** | 200 mm |
| **10** | 10”D | **250** | 250 mm |
| **12** | 12”D | **315** | 315 mm |

**Damper**

| | |
|---|---|
| **R3G** | Butterfly Damper |
| **OBD** | Opposed Blade Damper |
| **RSBD** | Radial Sliding Blade Damper |

**Model**

| | |
|---|---|
| **DSO** | Round diffuser |
| **DSO-MOD** | Square face for false ceiling |






# KAM

## Aluminum Adjustable Long Throw Nozzle Jet Diffusers

EFFECTIV™

Nov 15 2020

# KAM SERIES

## Aluminum Adjustable Long Throw Nozzle Jet Diffusers

- Adjust core to redirect the air jet
- Long throw ideal for large rooms or very high ceilings
- Manual adjustment, thermodynamic or actuator controlled
- Architecturally appealing lines and finish
- Heavy-gauge spun aluminum construction
- Duct mounted or drywall mounted with invisible screws
- Ideal for heating and cooling applications
- Available in metric standard dimensions



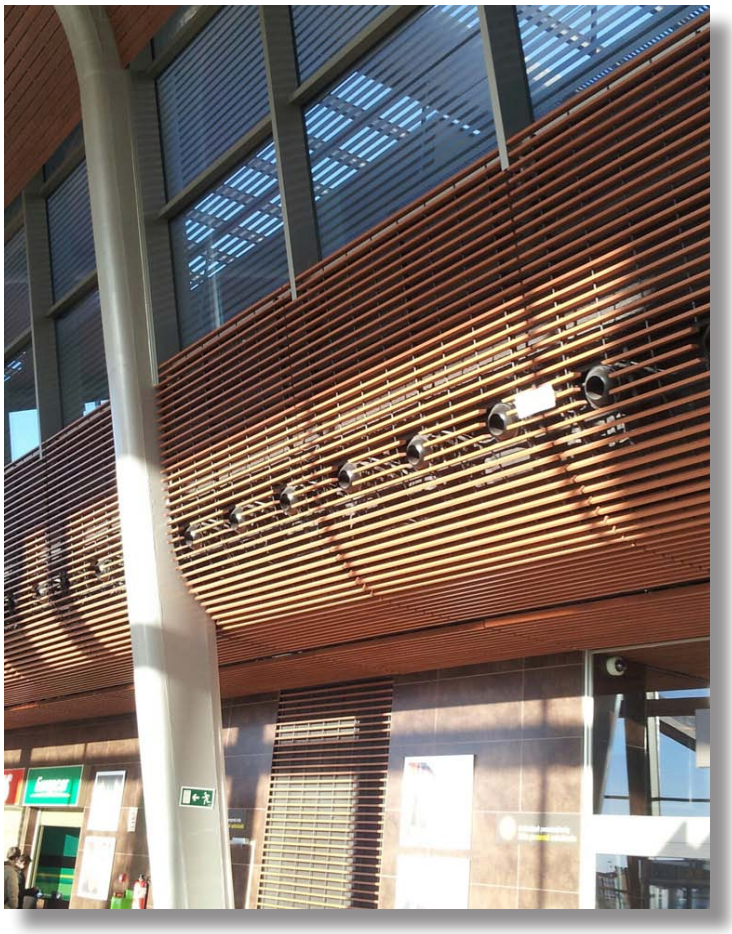
**KAM-W**
**by MADEL®**

**PATENTED**

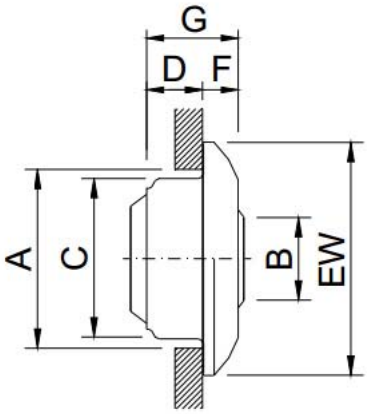
The KAM Series jet nozzle diffusers by EffectiV HVAC™ and MADEL® have been designed specifically to provide air diffusion into large spaces. They can achieve a very long throw for both heating and cooling whilst given flexibility in direction.

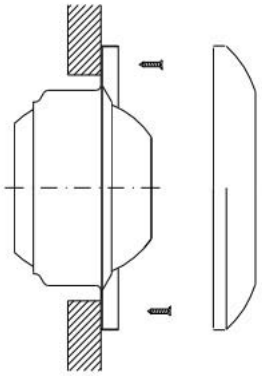
The design is the result of a collaboration of MADEL® and Benedito Design with the goal to provide a diffuser that encompasses smooth modern aesthetic lines appealing to the architectural market while providing a unique performance for specific applications.

| List Imperial | List Metric | Actual Neck Diameter | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|---|---|
| 05 | 125 | 4.85” (123 mm) | 0.132 | 16 | 129 |
| 06 | 160 | 6.22” (158 mm) | 0.216 | 26 | 179 |
| 08 | 200 | 7.8” (198 mm) | 0.338 | 54 | 303 |
| 10 | 250 | 9.76” (248 mm) | 0.529 | 100 | 465 |
| 12 | 315 | 12.32” (313 mm) | 0.839 | 191 | 665 |
| 16 | 400 | 15.67”(400 mm) | 1.345 | 294 | 897 |



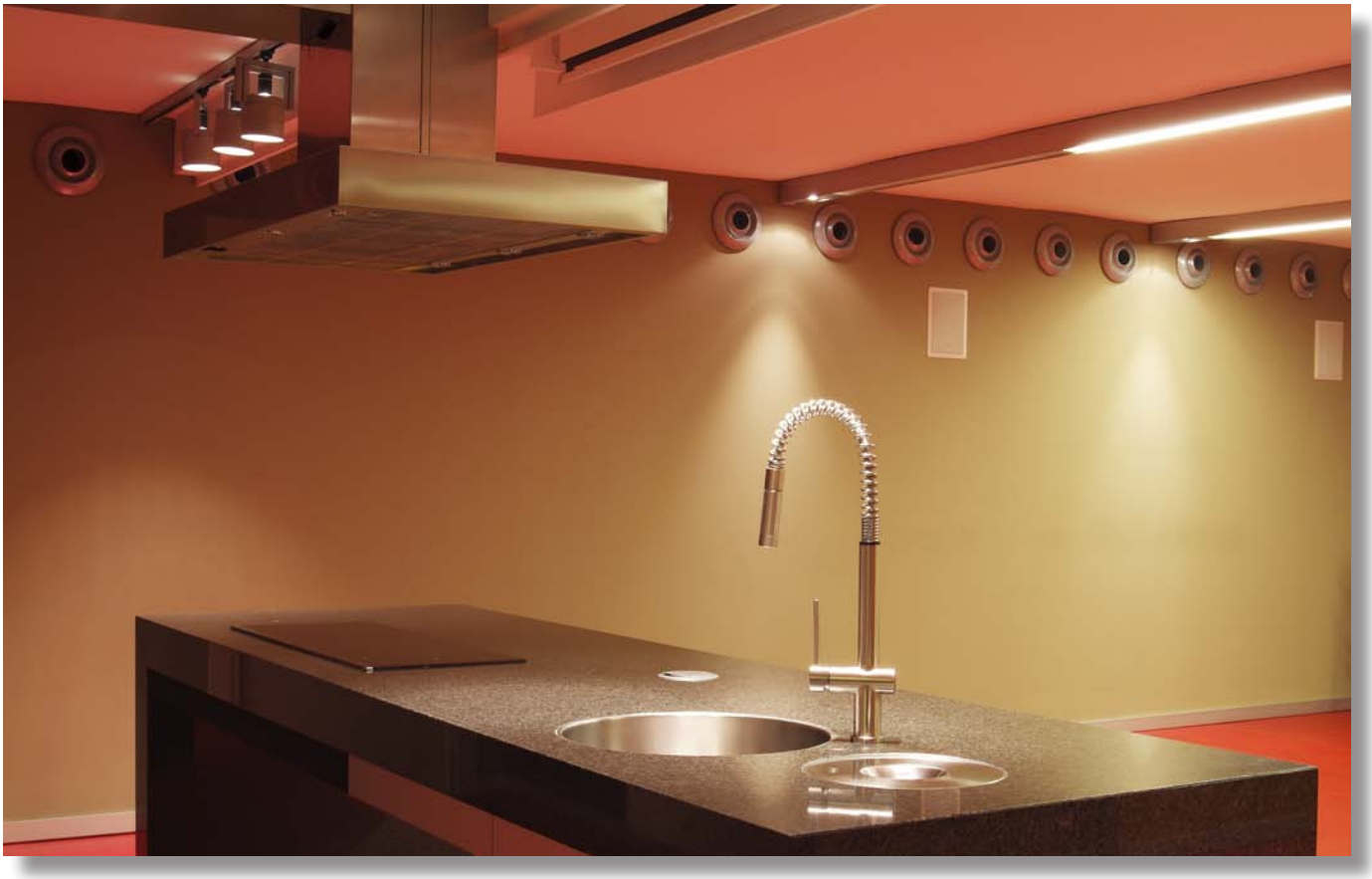
## KAM-W - Surface Mounted



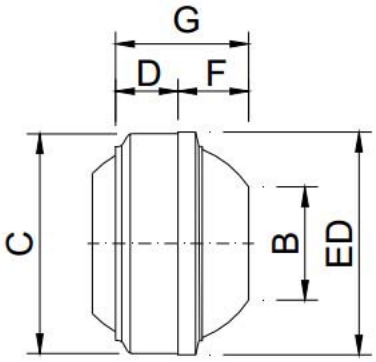



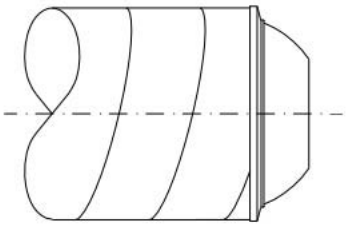


| Model | Duct Size | B | C | D | EW | F | G |
|---|---|---|---|---|---|---|---|
| **KAM-W 05** | 5″D | 2 13/32" | 4 27/32" | 2 11/64" | 7 1/8" | 1 1/16" | 3 11/32" |
| **KAM-W 06** | 6″D | 3 5/32" | 6 7/32" | 2 11/64" | 9 3/32" | 1 11/32" | 3 5/8" |
| **KAM-W 08** | 8″D | 4 1/64" | 7 51/64" | 2 29/32" | 11 3/8" | 1 37/64" | 4 51/64" |
| **KAM-W 10** | 10″D | 5 1/8" | 9 49/64" | 3 57/64" | 14 9/64" | 1 57/64" | 6 7/32" |
| **KAM-W 12** | 12.5″D | 6 17/32" | 12 21/64" | 4 61/64" | 17 53/64" | 2 1/4" | 7 23/32" |
| **KAM-W 16** | 16″D | 8 11/32" | 15 43/64" | 6 3/8" | 22 41/64" | 2 61/64" | 10 9/32" |



## KAM-D - Duct Mounted





| Model | Duct Size | B | C | D | ED | F | G |
|---|---|---|---|---|---|---|---|
| **KAM-D 05** | 5″D | 2 13/32" | 4 27/32" | 2 11/64" | 4 61/64" | 1 1/16" | 3 11/32" |
| **KAM-D 06** | 6″D | 3 5/32" | 6 7/32" | 2 11/64" | 6 3/8" | 1 11/32" | 3 5/8" |
| **KAM-D 08** | 8″D | 4 1/64" | 7 51/64" | 2 29/32" | 7 63/64" | 1 37/64" | 4 51/64" |
| **KAM-D 10** | 10″D | 5 1/8" | 9 49/64" | 3 57/64" | 9 61/64" | 1 57/64" | 6 7/32" |
| **KAM-D 12** | 12.5″D | 6 17/32" | 12 21/64" | 4 61/64" | 12 19/32" | 2 1/4" | 7 23/32" |
| **KAM-D 16** | 16″D | 8 11/32" | 15 43/64" | 6 3/8" | 15 29/32" | 2 61/64" | 10 9/32" |



## Some Applications

- High ceilings and/or very large spaces
- Seasonal heating and/or cooling
- When precise, directional jets are required
- Restaurants, Bars, Reception Halls, Car Dealers, Showrooms, Indoor Pools, Movie Theaters, Stores, Hotels, Casinos
- Entrance halls (vertical blast)
- Corrosion-sensitive applications



# Available Adjustment Mechanisms

## KAM

Manually adjustable.

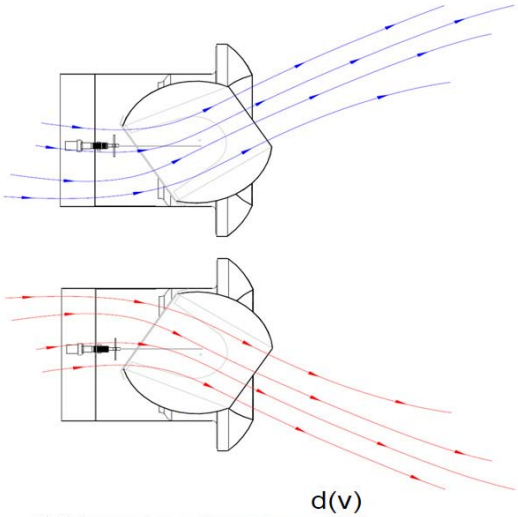
## KAM-ACTIF

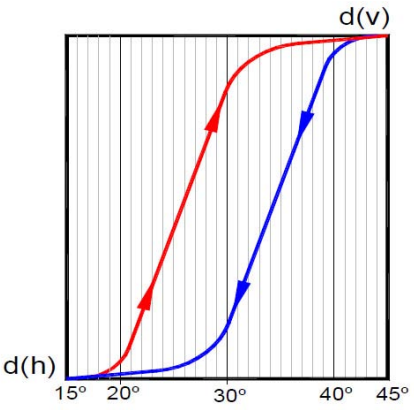
*Energy Efficiency Product*

ACTIF

Jet nozzle diffuser that is autonomously thermally adjustable by means of a thermodynamic piston. The supply air angle of the air jet varies in accordance with the supply air temperature, to significantly reduce stratification and improve comfort and efficiency.



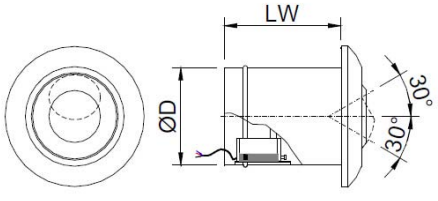



30 minutes adjustment time from d(h) to d(v)

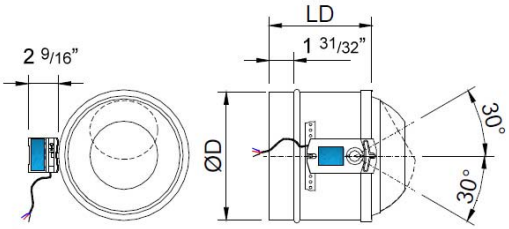
## KAM-M5

Regulable diffuser by means of an On/Off servomotor.

| Duct Diameter | LW | LD |
|---|---|---|
| 10″D | 5 1/8" | 9 49/64" |
| 12.5″D | 6 17/32" | 12 21/64" |
| 16″D | 8 11/32" | 15 43/64" |




KAM-W-M5




KAM-D-M5

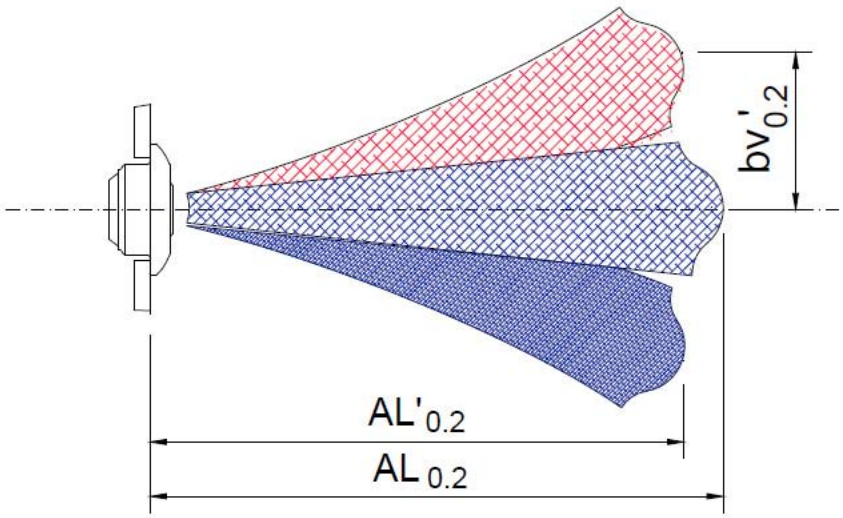
# KAM Performance Data

| Neck Size | Neck (fpm) Velocity | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.006 | .010 | .016 | .022 | .031 | .041 | .062 | .090 |
| 5” (125mm) | CFM | 41 | 55 | 68 | 82 | 95 | 109 | 136 | 164 |
| | Pressure Loss (in.w.g.) | 0.141 | 0.231 | 0.328 | 0.444 | 0.573 | 0.715 | 1.037 | 1.422 |
| | NC | < 15 | < 15 | 19 | 24 | 28 | 31 | 37 | 41 |
| | Throw (ft) - Coanda Effect | 21-35-53 | 28-46-70 | 34-57-85 | 40-67-101 | 47-78-116 | 53-88-132 | 65-109-163 | 78-130-195 |
| | Throw (ft) - No Ceiling Effect | 16-26-40 | 21-35-52 | 25-42-64 | 30-50-76 | 35-58-87 | 40-66-99 | 49-81-122 | 59-97-146 |
| 6” (160mm) | CFM | 61 | 81 | 101 | 122 | 142 | 162 | 203 | 244 |
| | Pressure Loss (in.w.g.) | 0.117 | 0.187 | 0.27 | 0.368 | 0.475 | 0.592 | 0.865 | 1.178 |
| | NC | < 15 | 17 | 22 | 26 | 30 | 33 | 38 | 42 |
| | Throw (ft) - Coanda Effect | 21-35-53 | 28-46-69 | 34-57-85 | 41-68-102 | 47-78-117 | 53-89-133 | 66-110-165 | 78-131-196 |
| | Throw (ft) - No Ceiling Effect | 16-26-40 | 21-35-52 | 26-43-64 | 30-51-76 | 35-59-88 | 40-66-100 | 49-82-124 | 59-98-147 |
| 8” (200mm) | CFM | 105 | 140 | 175 | 209 | 244 | 279 | 349 | 419 |
| | Pressure Loss (in.w.g.) | 0.132 | 0.213 | 0.31 | 0.415 | 0.538 | 0.673 | 0.978 | 1.328 |
| | NC | < 15 | 20 | 24 | 28 | 31 | 33 | 38 | 41 |
| | Throw (ft) - Coanda Effect | 29-48-72 | 38-63-94 | 47-78-117 | 55-92-138 | 64-106-159 | 72-121-181 | 89-149-224 | 106-177-266 |
| | Throw (ft) - No Ceiling Effect | 22-36-54 | 28-47-71 | 35-58-87 | 41-69-103 | 48-80-120 | 54-90-136 | 67-112-168 | 80-133-199 |
| 10” (250mm) | CFM | 164 | 218 | 273 | 327 | 382 | 436 | 545 | 654 |
| | Pressure Loss (in.w.g.) | 0.105 | 0.17 | 0.247 | 0.334 | 0.433 | 0.54 | 0.785 | 1.064 |
| | NC | 15 | 20 | 24 | 28 | 31 | 34 | 38 | 41 |
| | Throw (ft) - Coanda Effect | 37-62-93 | 49-81-122 | 60-101-151 | 72-119-179 | 83-138-207 | 94-157-235 | 116-194-290 | 138-230-345 |
| | Throw (ft) - No Ceiling Effect | 28-47-70 | 37-61-92 | 45-75-113 | 54-90-134 | 62-104-156 | 70-117-176 | 87-145-218 | 103-172-259 |
| 12” (315mm) | CFM | 244 | 325 | 406 | 487 | 568 | 649 | 812 | 974 |
| | Pressure Loss (in.w.g.) | 0.087 | 0.141 | 0.204 | 0.277 | 0.359 | 0.448 | 0.652 | 0.883 |
| | NC | 17 | 23 | 26 | 30 | 32 | 35 | 39 | 42 |
| | Throw (ft) - Coanda Effect | 37-61-92 | 48-80-120 | 59-99-148 | 71-118-176 | 82-136-204 | 93-154-232 | 114-191-286 | 136-227-340 |
| | Throw (ft) - No Ceiling Effect | 28-46-69 | 36-60-90 | 45-74-111 | 53-88-132 | 61-102-153 | 69-116-174 | 86-153-215 | 102-170-255 |
| 16” (400mm) | CFM | 419 | 559 | 698 | 838 | 977 | 1117 | 1396 | 1676 |
| | Pressure Loss (in.w.g.) | 0.075 | 0.121 | 0.176 | 0.238 | 0.308 | 0.385 | 0.559 | |
| | NC | 27 | 32 | 36 | 39 | 42 | 44 | 48 | |
| | Throw (ft) - Coanda Effect | 44-74-111 | 58-97-146 | 72-120-180 | 85-142-214 | 99-165-247 | 112-187-280 | 138-231-346 | |
| | Throw (ft) - No Ceiling Effect | 33-55-83 | 44-73-109 | 54-90-135 | 64-107-160 | 74-123-185 | 84-140-210 | 104-173-260 | |

**Performance Notes**

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

# Correction Factors for Horizontal Throw



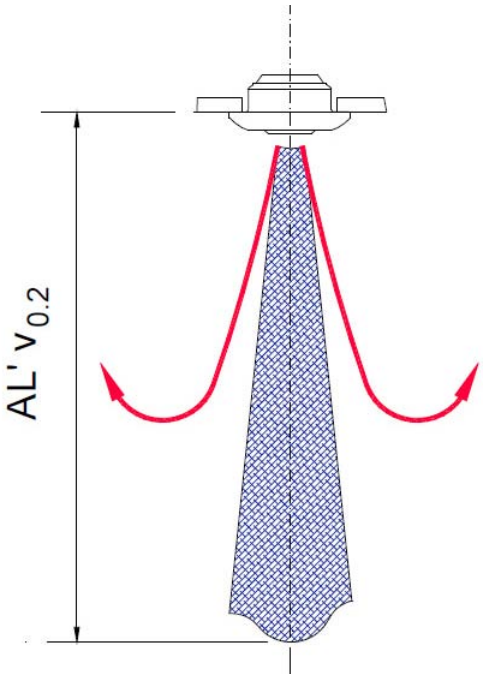

**bv= kh x Throw**

**Throw'(Δ T)= KI x Throw**

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Delta T Correction Factors | | | | | | |
|---|---|---|---|---|---|---|
| | 125 - 160 | | 200-250 | | 315 - 400 | |
| Δ T (F) | Kh | KI | Kh | KI | Kh | KI |
| -25 | -0.385 | 0.84 | -0.54 | 0.84 | -0.7 | 0.84 |
| -20 | -0.315 | 0.87 | -0.43 | 0.87 | -0.55 | 0.87 |
| -15 | -0.23 | 0.91 | -0.325 | 0.91 | -0.42 | 0.91 |
| -10 | -0.155 | 0.935 | -0.22 | 0.935 | -0.28 | 0.935 |
| -5 | -0.08 | 0.97 | -0.105 | 0.97 | -0.14 | 0.97 |
| 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| 5 | 0.08 | 0.97 | 0.105 | 0.97 | 0.14 | 0.97 |
| 10 | 0.155 | 0.935 | 0.22 | 0.935 | 0.28 | 0.935 |
| 15 | 0.23 | 0.91 | 0.325 | 0.91 | 0.42 | 0.91 |
| 20 | 0.315 | 0.87 | 0.43 | 0.87 | 0.55 | 0.87 |
| 25 | 0.385 | 0.84 | 0.54 | 0.84 | 0.7 | 0.84 |

## Correction Factors for Vertical Throw




**Throw'(Δ T)= Kv x Throw**

Kv = Correction Factor for Vertical Diffusion
AL'v $_{0.2}$ = Vertical distance at which velocity reaches 40 fpm

| Δ T (F) | Kv |
|---|---|
| -25 | 1.445 |
| -20 | 1.36 |
| -15 | 1.27 |
| -10 | 1.18 |
| -5 | 1.08 |
| 0 | 1 |
| 5 | 0.91 |
| 10 | 0.82 |
| 15 | 0.73 |
| 20 | 0.65 |
| 25 | 0.555 |

## How to Specify KAM Series

Supply and mounting of model KAM aluminum long throw jet nozzle diffuser with adjustable core which can be rotated to adjust direction of the airflow. Constructed from spun aluminum, powder coated in white M9016 or metallic grey M9006. By EffectiV HVAC / MADEL.

## How to Specify KAM-ACTIF

Supply and mounting of model KAM-ACTIF aluminum long throw jet nozzle diffuser. Autonomously thermally adjustable by means of a thermodynamic piston. Constructed from spun aluminum, powder coated in white M9016 or metallic grey M9006. By EffectiV HVAC / MADEL.

## How to Specify KAM-M5

Supply and mounting of model KAM-M5 aluminum long throw jet nozzle diffuser. Adjustable by means of an On/Off actuator. Constructed from spun aluminum, powder coated in white M9016 or metallic grey M9006. By EffectiV HVAC / MADEL.

# How to Order KAM Series

**KAM -W 200 /M9016**

| | | | | |
|---|---|---|---|---|
| **Finish** | **/M9006** | Grey (RAL 9006 White Aluminum) | | |
| | **/M9016** | White (RAL 9016 Traffic White) | | |
| **Neck Diameter** | **Imperial** | | **Metric** | |
| | **05** | 5”D | **125** | 125 mm |
| | **06** | 6.5”D | **160** | 160 mm |
| | **08** | 8”D | **200** | 200 mm |
| | **10** | 10”D | **250** | 250 mm |
| | **12** | 12.5”D | **315** | 315 mm |
| | **16** | 16”D | **400** | 400 mm |
| **Mounting** | **D** | Duct | | |
| | **W** | Surface | | |
| **Model** | **KAM** | Manually adjustable | | |
| | **KAM-ACTIF** | Autonomously thermally adjustable | | |
| | **KAM-M5** | Adjustable by means of an On/Off actuator | | |



# KOBE

## Adjustable Long Throw Linear Jet Diffusers

EFFECTIV™

March 8, 2023

# KOBE SERIES

## Adjustable Long Throw Linear Jet Diffusers



**KOBE**
by MADEL®

- Adjustable long throw, ideal for large rooms or high ceilings
- Ideal solution to push air downwards and to cover windowed walls
- Six different slot widths to answer requirements for a wide range of air volumes
- Architecturally appealing linear diffuser
- Easy clip mounting system available with PLKB plenum
- Made in aluminium

KOBE Long Throw Adjustable Linear Jet Diffusers have been designed to combine aesthetics with technical performance.

They can be mounted on the wall to diffuse the air horizontally in large spaces, or the ceiling to diffuse the air downward, for instance to cover high windowed walls.

With various slot sizes available and an adjustable supply angle of ± 30º, KOBE diffusers are suitable for all types of architectures and airflow requirements.

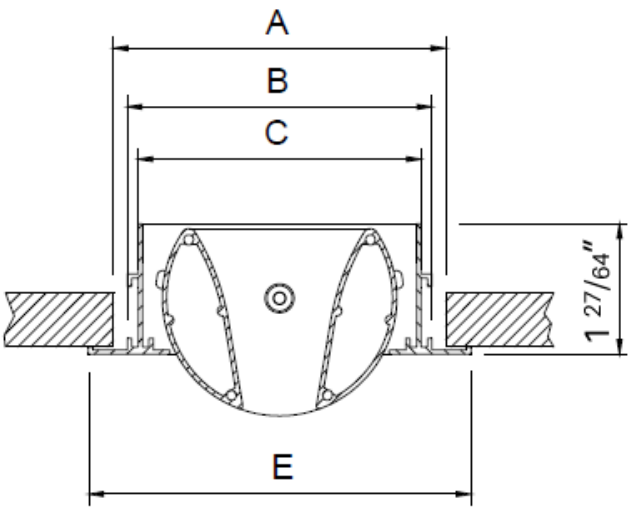
KOBE Long Throw Adjustable Linear Jet Diffusers are ideal for installation in large spaces such as shopping centers, airports, stations, sports halls, etc.

KOBE diffusers work with a high induction rate that minimizes stratification in large spaces. They can operate with a temperature differential of up to up to 22ºF (12ºC) and provide optimum performance with both variable and constant air flow.



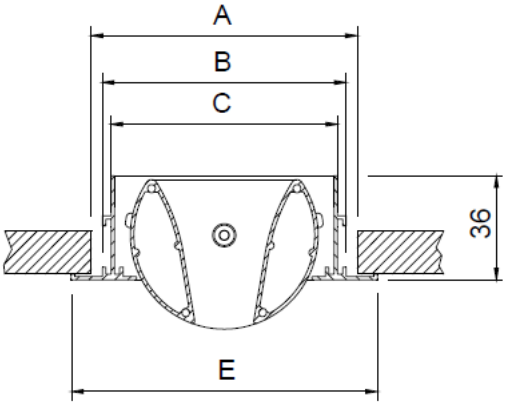
## KOBE Slot Type and Width - Imperial Dimensions

| Slot Width | A | B | C | B |
|---|---|---|---|---|
| 15 (0.6") | 3 11/16" | 3 21/64" | 3 3/32" | 4 11/64" |
| 20 (0.8") | 3 11/16" | 3 21/64" | 3 3/32" | 4 11/64" |
| 25 (1") | 3 11/16" | 3 21/64" | 3 3/32" | 4 11/64" |
| 30 (1.2") | 3 11/16" | 3 21/64" | 3 3/32" | 4 11/64" |
| 40 (1.6") | 4 15/64" | 3 7/8" | 3 41/64" | 4 23/32" |
| 50 (2") | 4 43/64" | 4 5/16" | 4 5/64" | 5 5/32" |



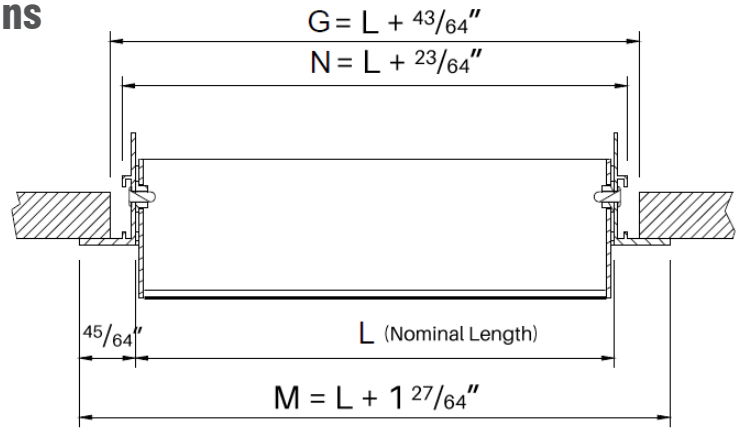



## KOBE Slot Type and Width - Metric Dimensions



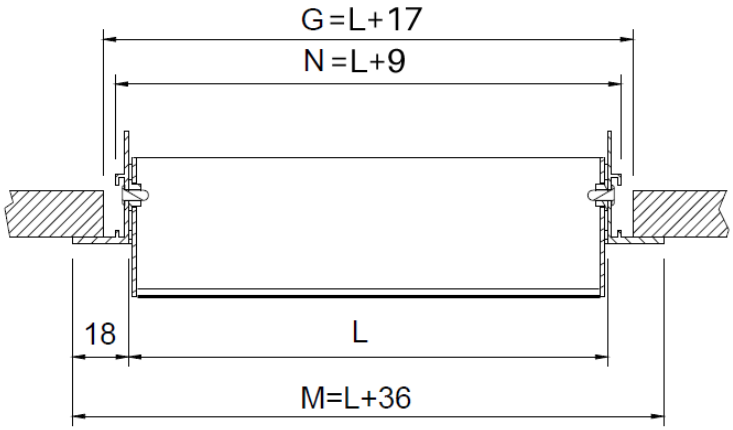

| Slot Width | A | B | C | B |
|---|---|---|---|---|
| 15 | 93.5 | 84.5 | 78.5 | 106 |
| 20 | 93.5 | 84.5 | 78.5 | 106 |
| 25 | 93.5 | 84.5 | 78.5 | 106 |
| 30 | 93.5 | 84.5 | 78.5 | 106 |
| 40 | 107.5 | 98.5 | 92.5 | 120 |
| 50 | 118.5 | 109.5 | 103.5 | 131 |

## KOBE Nominal Lengths - Imperial Dimensions




| Nominal Length | L (inches) | G | N | M |
|---|---|---|---|---|
| **300** | 11 13/16” | 12 31/64” | 12 11/64” | 13 15/64” |
| **400** | 15 3/4" | 16 27/64” | 16 7/64” | 17 11/64” |
| **500** | 19 11/16" | 20 23/64” | 20 3/64” | 21 7/64” |
| **600** | 23 5/8" | 24 19/64” | 23 63/64” | 25 3/64” |
| **700** | 27 9/16" | 28 15/64” | 27 59/64” | 28 63/64” |
| **800** | 31 1/2" | 32 11/64” | 31 55/64” | 32 59/64” |
| **900** | 35 7/16" | 36 7/64” | 35 51/64” | 36 55/64” |
| **1000** | 39 3/8” | 40 3/64” | 39 47/64” | 40 51/64” |
| **1100** | 43 5/16” | 43 63/64” | 43 43/64” | 44 47/64” |
| **1200** | 47 1/4” | 47 59/64” | 47 39/64” | 48 43/64” |
| **1300** | 51 3/16” | 51 55/64” | 51 35/64” | 52 39/64” |
| **1400** | 55 1/8” | 55 51/64” | 55 31/64” | 56 35/64” |
| **1500** | 59 1/16” | 59 47/64” | 59 27/64” | 60 31/64” |
| **1600** | 62 63/64” | 63 21/32” | 63 11/32” | 64 13/32” |
| **1700** | 66 59/64” | 67 19/32” | 67 9/32” | 68 11/32” |
| **1800** | 70 55/64” | 71 17/32” | 71 7/32” | 72 9/32” |
| **1900** | 74 51/64” | 75 15/32” | 75 5/32” | 76 7/32” |
| **2000** | 78 47/64” | 79 13/32” | 79 3/32” | 80 5/32” |

## Metric Dimensions

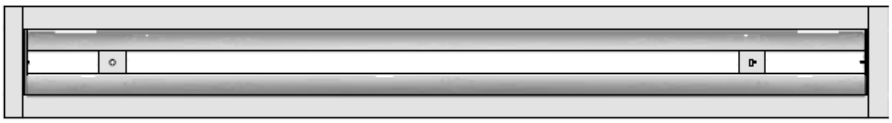


## KOBE Nozzle Sections



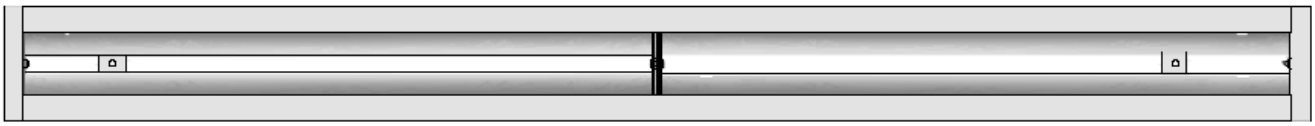
**Single Nozle**

300 <= L <= 1000



**Split Nozle**

1100 <= L <= 2000

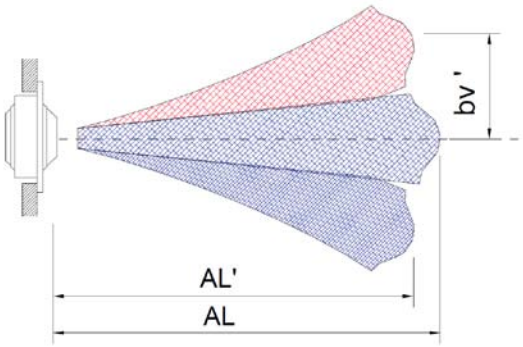




# KOBE Performance Data - Horizontal Throw

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 15 0.6" | CFM / Linear Foot | 10 | 30 | 50 | 70 | 90 | 110 | 130 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.04 | 0.1 | 0.2 | 0.3 | 0.4 | 0.6 |
| | NC | < 15 | < 15 | < 20 | < 25 | < 30 | < 35 | > 40 |
| | Throw (ft) - Coanda Effect | 5-8-12 | 13-23-33 | 23-37-55 | 31-51-76 | 39-65-97 | 47-78-117 | 56-92-138 |
| | Throw (ft) - No Ceiling Effect | 4-6-9 | 10-17-25 | 17-28-41 | 23-38-57 | 29-49-73 | 35-59-88 | 42-69-104 |
| 20 0.8" | CFM / Linear Foot | 15 | 45 | 75 | 105 | 135 | 165 | 195 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.04 | 0.1 | 0.2 | 0.3 | 0.4 | 0.6 |
| | NC | < 15 | < 15 | < 20 | < 30 | < 35 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 8-10-16 | 17-29-44 | 29-48-73 | 40-67-100 | 51-85-128 | 63-104-154 | 73-121-182 |
| | Throw (ft) - No Ceiling Effect | 6-8-12 | 13-22-33 | 22-36-55 | 30-50-75 | 38-64-96 | 47-78-116 | 55-91-137 |
| 25 1" | CFM / Linear Foot | 20 | 60 | 100 | 140 | 180 | 220 | 260 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.04 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 |
| | NC | < 15 | < 15 | < 20 | < 30 | < 35 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 7-12-17 | 20-35-51 | 33-56-84 | 47-77-116 | 59-97-146 | 72-118-178 | 84-140-209 |
| | Throw (ft) - No Ceiling Effect | 5-9-13 | 15-26-38 | 25-42-63 | 35-58-87 | 44-73-110 | 54-89-134 | 63-105-157 |
| 30 1.2" | CFM / Linear Foot | 20 | 65 | 110 | 155 | 200 | 245 | 290 |
| | Pressure Loss (in.w.g.) | 0.004 | 0.03 | 0.1 | 0.1 | 0.2 | 0.3 | 0.4 |
| | NC | < 15 | < 15 | < 20 | < 25 | < 30 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 5-9-15 | 17-29-45 | 29-49-74 | 41-69-104 | 53-88-132 | 64-106-161 | 76-125-189 |
| | Throw (ft) - No Ceiling Effect | 4-7-11 | 13-22-34 | 22-37-56 | 31-52-78 | 40-66-99 | 48-80-121 | 57-94-142 |
| 40 1.6" | CFM / Linear Foot | 25 | 90 | 155 | 220 | 285 | 350 | 415 |
| | Pressure Loss (in.w.g.) | 0.002 | 0.03 | 0.1 | 0.2 | 0.4 | 0.5 | 0.8 |
| | NC | < 15 | < 15 | < 20 | < 30 | < 35 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 5-9-13 | 21-36-53 | 39-64-96 | 56-93-140 | 73-122-184 | 92-152-229 | 109-182-274 |
| | Throw (ft) - No Ceiling Effect | 4-7-10 | 16-27-40 | 29-48-72 | 42-70-105 | 55-92-138 | 69-114-172 | 82-137-206 |
| 50 2" | CFM / Linear Foot | 35 | 110 | 185 | 260 | 335 | 410 | 485 |
| | Pressure Loss (in.w.g.) | 0.003 | 0.03 | 0.1 | 0.2 | 0.3 | 0.5 | 0.7 |
| | NC | < 15 | < 15 | < 20 | < 25 | < 30 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 7-11-17 | 23-37-57 | 40-65-98 | 57-94-141 | 74-124-185 | 92-153-230 | 110-184-275 |
| | Throw (ft) - No Ceiling Effect | 5-8-13 | 17-28-43 | 30-49-74 | 43-71-106 | 56-93-139 | 69-115-173 | 83-138-207 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively




**AL' = AL x Kh**
**bv' = AL x Kv**

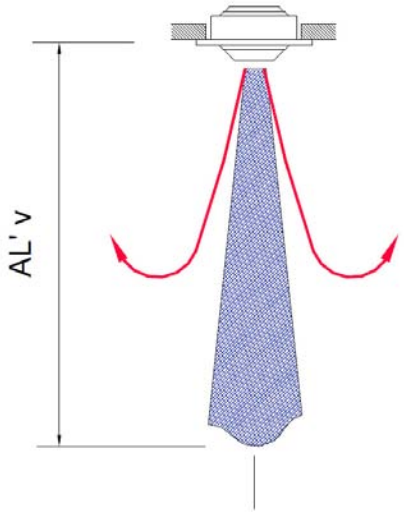
Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
AL = Throw

| Delta T Correction Factors | | | |
|---|---|---|---|
| **Δ T (F)** | **Kh** | **Kv (15, 20, 25, 30)** | **Kv (40, 50)** |
| **-25** | -0.84 | -0.49 | -0.63 |
| **-20** | -0.87 | -0.4 | -0.51 |
| **-15** | -0.91 | -0.3 | -0.38 |
| **-10** | -0.935 | -0.2 | -0.25 |
| **-5** | -0.97 | -0.1 | -0.13 |
| **0** | 1 | 0 | 0 |
| **5** | 0.97 | 0.1 | 0.13 |
| **10** | 0.935 | 0.2 | 0.25 |
| **15** | 0.91 | 0.3 | 0.38 |
| **20** | 0.87 | 0.4 | 0.51 |
| **25** | 0.84 | 0.49 | 0.63 |

# KOBE Performance Data - Vertical Throw

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 15 0.6" | CFM / Linear Foot | 10 | 30 | 50 | 70 | 90 | 110 | 130 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.04 | 0.1 | 0.2 | 0.3 | 0.4 | 0.6 |
| | NC | < 15 | < 15 | < 20 | < 25 | < 30 | < 35 | > 40 |
| | Throw (ft) - Coanda Effect | 4-7-11 | 12-20-31 | 20-33-51 | 28-47-69 | 36-59-88 | 43-72-106 | 51-84-126 |
| | Throw (ft) - No Ceiling Effect | 3-5-8 | 9-15-23 | 15-25-38 | 21-35-52 | 27-44-66 | 32-54-80 | 38-63-95 |
| 20 0.8" | CFM / Linear Foot | 15 | 45 | 75 | 105 | 135 | 165 | 195 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.04 | 0.1 | 0.2 | 0.3 | 0.4 | 0.6 |
| | NC | < 15 | < 15 | < 20 | < 30 | < 35 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 5-9-15 | 16-27-40 | 27-44-67 | 36-61-92 | 47-77-116 | 56-94-141 | 67-110-165 |
| | Throw (ft) - No Ceiling Effect | 4-7-11 | 12-20-30 | 20-33-50 | 27-46-69 | 35-58-87 | 42-71-106 | 50-83-124 |
| 25 1" | CFM / Linear Foot | 20 | 60 | 100 | 140 | 180 | 220 | 260 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.04 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 |
| | NC | < 15 | < 15 | < 20 | < 30 | < 35 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 7-11-16 | 19-31-47 | 31-51-76 | 43-70-105 | 53-89-133 | 65-108-162 | 76-126-190 |
| | Throw (ft) - No Ceiling Effect | 5-8-12 | 14-23-35 | 23-38-57 | 32-53-79 | 40-67-100 | 49-81-122 | 57-95-143 |
| 30 1.2" | CFM / Linear Foot | 20 | 65 | 110 | 155 | 200 | 245 | 290 |
| | Pressure Loss (in.w.g.) | 0.004 | 0.03 | 0.1 | 0.1 | 0.2 | 0.3 | 0.4 |
| | NC | < 15 | < 15 | < 20 | < 25 | < 30 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 5-9-13 | 16-27-41 | 27-45-68 | 37-63-94 | 48-80-120 | 59-97-146 | 69-114-172 |
| | Throw (ft) - No Ceiling Effect | 4-7-10 | 12-20-31 | 20-34-51 | 28-47-71 | 36-60-90 | 44-73-110 | 52-86-129 |
| 40 1.6" | CFM / Linear Foot | 25 | 90 | 155 | 220 | 285 | 350 | 415 |
| | Pressure Loss (in.w.g.) | 0.002 | 0.03 | 0.1 | 0.2 | 0.4 | 0.5 | 0.8 |
| | NC | < 15 | < 15 | < 20 | < 30 | < 35 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 5-8-12 | 19-31-45 | 33-55-82 | 48-78-118 | 63-104-156 | 77-129-194 | 93-156-233 |
| | Throw (ft) - No Ceiling Effect | 4-6-9 | 14-23-34 | 25-41-62 | 36-59-89 | 47-78-117 | 58-97-146 | 70-117-175 |
| 50 2" | CFM / Linear Foot | 35 | 110 | 185 | 260 | 335 | 410 | 485 |
| | Pressure Loss (in.w.g.) | 0.003 | 0.03 | 0.1 | 0.2 | 0.3 | 0.5 | 0.7 |
| | NC | < 15 | < 15 | < 20 | < 25 | < 30 | > 40 | > 40 |
| | Throw (ft) - Coanda Effect | 5-9-15 | 19-32-48 | 33-56-84 | 48-80-120 | 63-105-158 | 78-130-196 | 93-156-234 |
| | Throw (ft) - No Ceiling Effect | 4-7-11 | 14-24-36 | 25-42-63 | 36-60-90 | 47-79-119 | 59-98-147 | 70-117-176 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

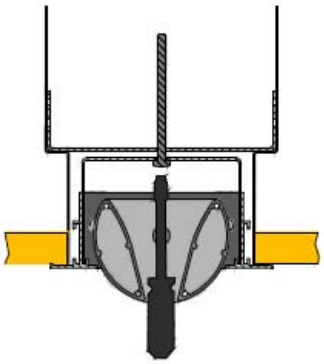



**AL'v = Throw x Kx**

| Delta T Correction Factor For Vertical Throw | |
|---|---|
| **Δ T (F)** | **Kx** |
| -25 | 1.445 |
| -20 | 1.355 |
| -15 | 1.27 |
| -10 | 1.18 |
| -5 | 1.09 |
| 0 | 1 |
| 5 | 0.915 |
| 10 | 0.82 |
| 15 | 0.73 |
| 20 | 0.645 |
| 25 | 0.555 |

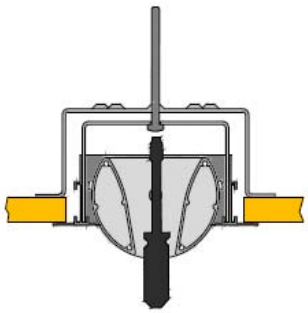
## PL Mounting

PLKB-PL Plenum
Mounting Clips



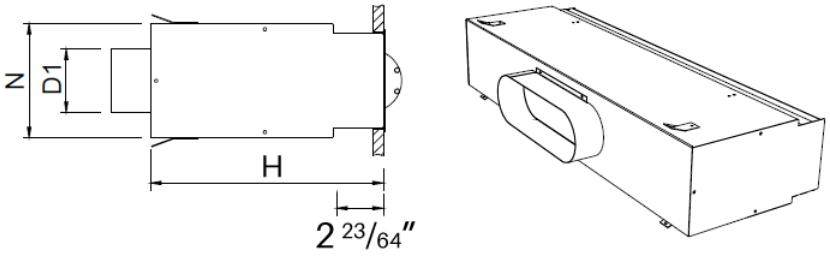
## PM Mounting

Mounting Clips for PLKB-PM
Plenum or no plenum

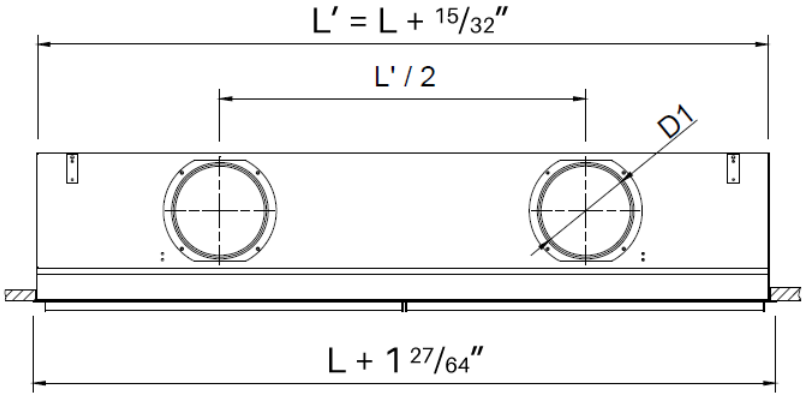


## PLKB-PL Plenum

PLKB-T-PL




PLKB-S-PL

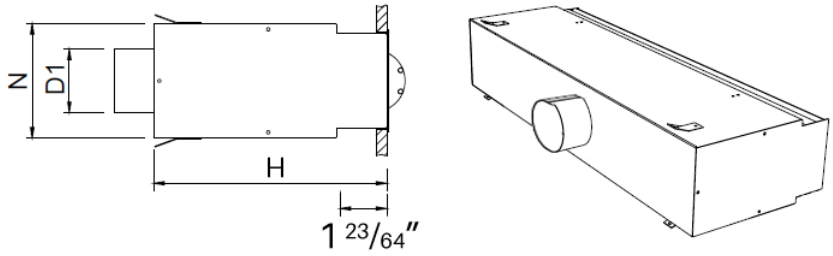



| PLKB-PL | N | L <= 600 | | L <= 1000 | | L <= 1500 | | L <= 2000 | |
|---|---|---|---|---|---|---|---|---|---|
| | | D1 | H | D1 | H | D1 | H | D1 | H |
| **KOBE 15** | 4 3/8 | 5 7/8 | 9 39/64 | 5 7/8 | 9 39/64 | (2x) 5 7/8 | 9 39/64 | (2x) 5 7/8 | 9 39/64 |
| **KOBE 20** | 4 3/8 | 5 7/8 | 9 39/64 | 5 7/8 | 9 39/64 | (2x) 5 7/8 | 9 39/64 | (2x) 7 7/8 | 11 3/16 |
| **KOBE 25** | 4 3/8 | 5 7/8 | 9 39/64 | 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 |
| **KOBE 30** | 4 3/8 | 7 7/8 | 11 3/16 | 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 |
| **KOBE 40** | 4 59/64 | 7 7/8 | 11 3/16 | 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 | (2x) 9 7/8 | 13 5/32 |
| **KOBE 50** | 5 5/16 | 7 7/8 | 11 3/16 | 7 7/8 | 11 3/16 | (2x) 9 7/8 | 13 5/32 | (2x) 9 7/8 | 13 5/32 |

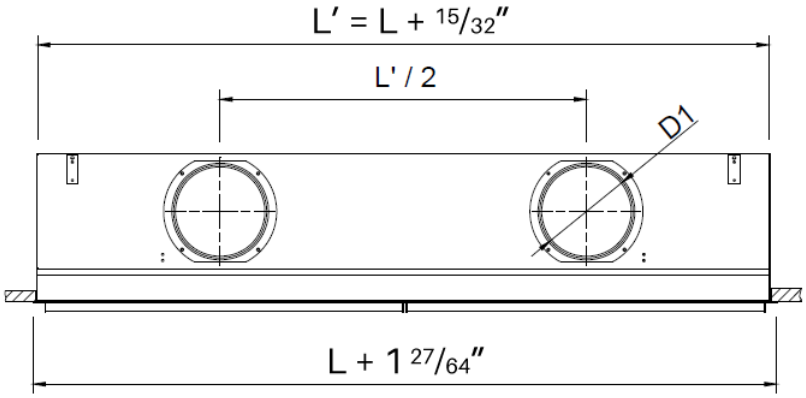
All dimensions in inches

# PLKB-PM Plenum

PLKB-T-PM




PLKB-S-PM



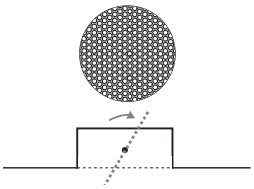

| PLKB-S-PM | N | L <= 600 | | L <= 1000 | | L <= 1200 | | L <= 1500 | | L <= 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | H | D1 | H | D1 | H | D1 | H | D1 | H |
| **KOBE 15** | 5 | 5 7/8 | 8 39/64 | 5 7/8 | 8 39/64 | 5 7/8 | 8 39/64 | (2x) 5 7/8 | 8 39/64 | (2x) 5 7/8 | 8 39/64 |
| **KOBE 20** | 5 | 5 7/8 | 8 39/64 | 5 7/8 | 8 39/64 | 7 7/8 | 10 3/16 | (2x) 5 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 |
| **KOBE 25** | 5 | 5 7/8 | 8 39/64 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 |
| **KOBE 30** | 5 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 |
| **KOBE 40** | 5 3/4 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | 9 7/8 | 12 5/32 | (2x) 7 7/8 | 12 5/32 | (2x) 9 7/8 | 12 5/32 |
| **KOBE 50** | 6 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | 9 7/8 | 12 5/32 | (2x) 9 7/8 | 12 5/32 | (2x) 9 7/8 | 12 5/32 |

All dimensions in inches

| PLKB-T-PM | H | L <= 600 | | L <= 1000 | | L <= 1200 | | L <= 1500 | | L <= 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | N | D1 | N | D1 | N | D1 | N | D1 | N |
| **KOBE 15** | 5 7/8 | 5 7/8 | 6 7/8 | 5 7/8 | 6 7/8 | 5 7/8 | 6 7/8 | (2x) 5 7/8 | 6 7/8 | (2x) 5 7/8 | 6 7/8 |
| **KOBE 20** | 5 7/8 | 5 7/8 | 6 7/8 | 5 7/8 | 6 7/8 | 7 7/8 | 8 7/8 | (2x) 5 7/8 | 6 7/8 | (2x) 7 7/8 | 8 7/8 |
| **KOBE 25** | 5 7/8 | 5 7/8 | 6 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | (2x) 7 7/8 | 8 7/8 | (2x) 7 7/8 | 8 7/8 |
| **KOBE 30** | 5 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | (2x) 7 7/8 | 8 7/8 | (2x) 7 7/8 | 8 7/8 |
| **KOBE 40** | 6 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | 9 7/8 | 10 7/8 | (2x) 7 7/8 | 10 7/8 | (2x) 9 7/8 | 10 7/8 |
| **KOBE 50** | 6 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | 9 7/8 | 10 7/8 | (2x) 9 7/8 | 10 7/8 | (2x) 9 7/8 | 10 7/8 |

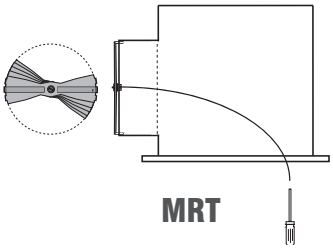
All dimensions in inches

## Integrated Air Volume Dampers



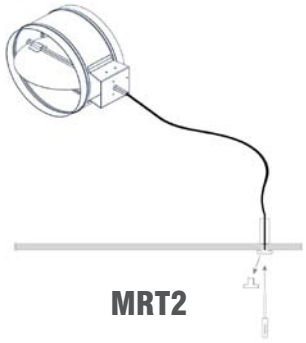
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**Important Note: R, MRT, MRT2, EB and EB2 Damper Options are only available with PLKB-PM**

## Accessories

**EB-SP1**

Single Connector Drywall Termination Fixture for EB dampers



**EB-AB8**

Eight Connector Wall Bracket for EB dampers



**EB-SP8**

Eight Connector Drywall Termination Fixture for EB dampers



**EB-REMOTE**

Remote Control for EB dampers



## How to Specify KOBE Series

Supply and mounting of model KOBE adjustable long throw linear jet diffuser. Available in six different slot widths. Made in aluminum, powder coated in white M9016. Supply with PLKB plenum and concealed mounting system. By EffectiV HVAC / MADEL.

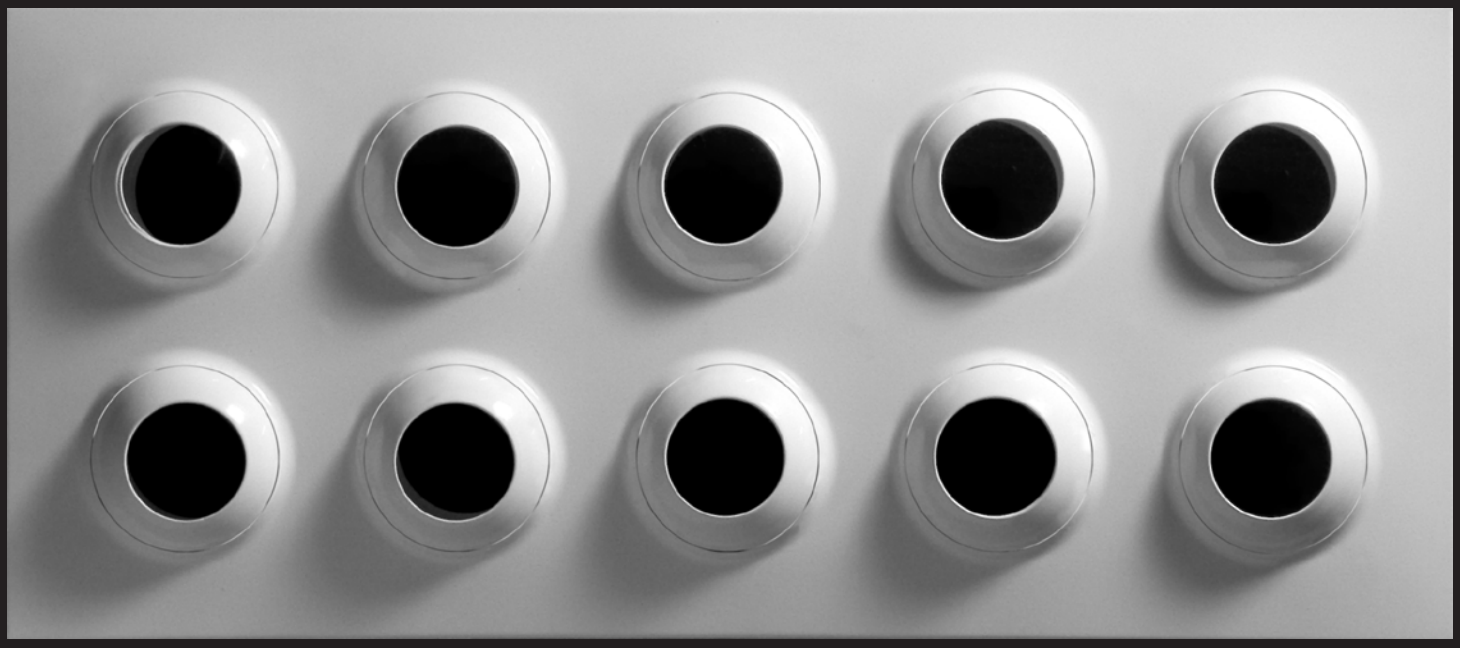
## How to Order KOBE Series

| KOBE | -PM | 20 | 1200 | /M9016 | + PLKB-S-PM | 20 | 1200 |
|---|---|---|---|---|---|---|---|

| | | |
|---|---|---|
| Finish | /M9016 | White (RAL 9016 Traffic White) |
| | /RAL | Other RAL finish, please speficy |
| Length | Nominal length | |
| Slot Width | 15, 20, 25, 30, 40, 50 | |
| Mounting | -PM | Concealed bracket |
| | -PL | Concealed spring clips |


CAMAÏ



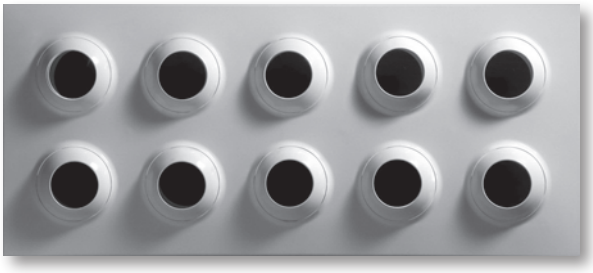


# KOO

## Adjustable Long Throw Multi-Nozzle Jet Diffusers

EFFECTIV™

# KOO SERIES
## Long Throw Multi-Jet Nozzle Diffusers



**KOO**
**by MADEL®**

**PATENTED**

- Each jet nozzle can be adjusted manually
- Long throw ideal for large rooms or high ceilings
- Also possibility of wide spread to cover large windows from a distance
- Architecturally appealing lines and finish
- Clip mounting system available with PLRX plenum, great for drywall mounting without apparent screws
- IEK adaptor available for direct mounting on round duct
- Nozzles constructed from aluminium and panel from galvanised steel
- Seal of rotation made of immutable material, classified M1 and F2 as regards fire and smoke safety

KOO Long Throw Multi-Jet Nozzle Diffusers by EffectiV HVAC™ and MADEL® are designed to be used in air conditioning, ventilation and heating systems at a temperature differential up to 22ºF (12ºC). They can be mounted in the wall or the ceiling.

KOO diffusers respond to different functional and architectural requirements, thanks to their manually adjustable nozzles in all directions. Two nozzle jet diameters are available. Depending on the size of the rectangular panel, the integrated nozzles diameter can either be 3 5/32" (80 mm) or 4 59/64" (125 mm).

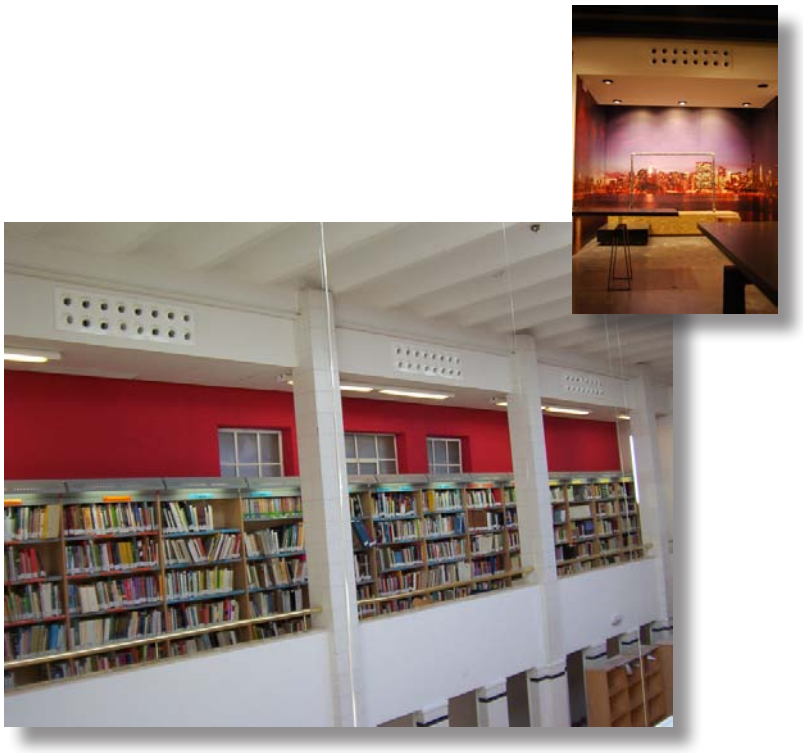
Thanks to its long throw and flexibility of direction of the air pattern, KOO is suitable for air diffusion in all kinds of different architectures. It provides a high induction air rate level, reducing stratification.

The KOO Long Throw Multi-Jet Nozzle Diffusers represent a vanguard in design of air diffusers. Integrating one or two rows of jet nozzles into a long panel, the outcome is a smooth and homogeneous surface reducing the visual impact on interior architecture.



## Some Applications

- Large Pools and Aquatic Centers
- Restaurants, Bars, Hotels, Lobbies
- Stores and Outlets
- Libraries
- Theaters
- Gymnasiums & Training Facilities
- Hallways
- Large spaces or high ceilings



## Available Models

3 5/32" (80 mm) Nozzle Diameter

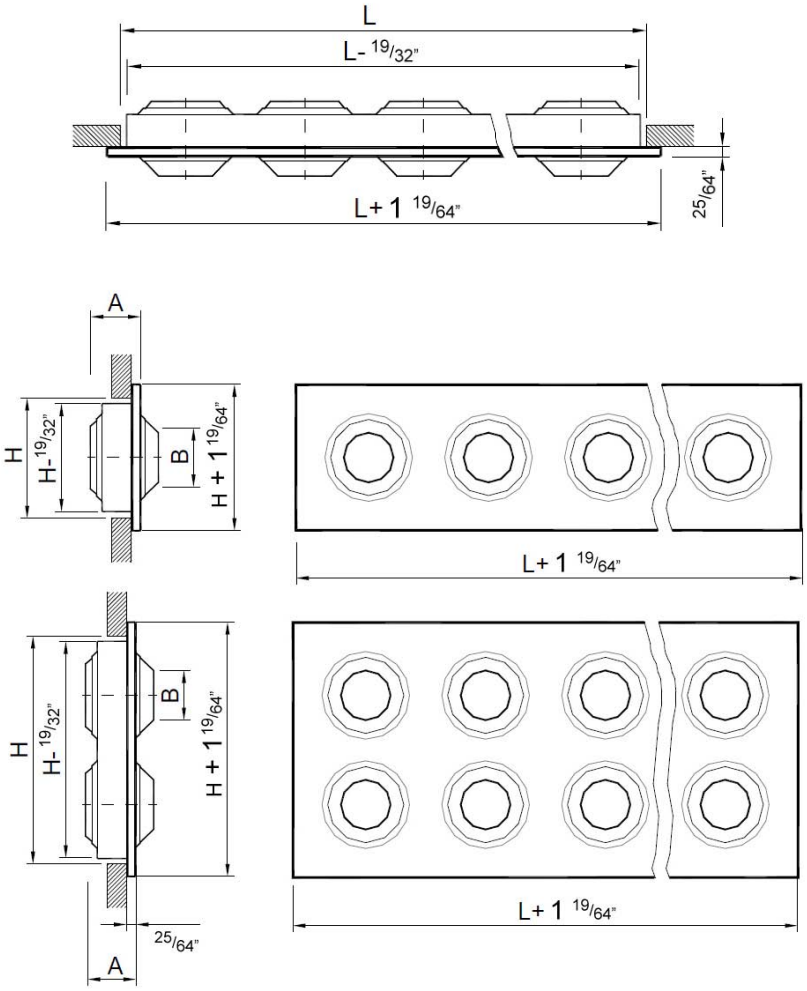
| Imperial List Size | Metric List Size | Nozzles Qty | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|---|---|
| **8 x 4** | 200 x 100 | **2 x 1** | 0.03 | 15 | 82 |
| **12 x 4** | 300 x 100 | **3 x 1** | 0.046 | 23 | 124 |
| **16 x 4** | 400 x 100 | **4 x 1** | 0.061 | 30 | 159 |
| **20 x 4** | 500 x 100 | **5 x 1** | 0.078 | 38 | 194 |
| **24 x 4** | 600 x 100 | **6 x 1** | 0.093 | 45 | 221 |
| **28 x 4** | 700 x 100 | **7 x 1** | 0.108 | 53 | 247 |
| **32 x 4** | 800 x 100 | **8 x 1** | 0.123 | 61 | 273 |
| **36 x 4** | 900 x 100 | **9 x 1** | 0.139 | 68 | 300 |
| **40 x 4** | 1000 x 100 | **10 x 1** | 0.155 | 76 | 326 |
| **8 x 8** | 200 x 200 | **2 x 2** | 0.061 | 30 | 156 |
| **12 x 8** | 300 x 200 | **3 x 2** | 0.093 | 45 | 235 |
| **16 x 8** | 400 x 200 | **4 x 2** | 0.123 | 61 | 306 |
| **20 x 8** | 500 x 200 | **5 x 2** | 0.155 | 76 | 376 |
| **24 x 8** | 600 x 200 | **6 x 2** | 0.185 | 91 | 423 |
| **28 x 8** | 700 x 200 | **7 x 2** | 0.215 | 106 | 468 |
| **32 x 8** | 800 x 200 | **8 x 2** | 0.237 | 116 | 512 |
| **36 x 8** | 900 x 200 | **9 x 2** | 0.278 | 136 | 559 |
| **40 x 8** | 1000 x 200 | **10 x 2** | 0.31 | 152 | 603 |

4 59/64" (125 mm) Nozzle Diameter

| Imperial List Size | Metric List Size | Nozzles Qty | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|---|---|
| **12 x 6** | 300 x 150 | **2 x 1** | 0.06 | 29 | 147 |
| **18 x 6** | 450 x 150 | **3 x 1** | 0.09 | 45 | 218 |
| **24 x 6** | 600 x 150 | **4 x 1** | 0.121 | 59 | 291 |
| **30 x 6** | 750 x 150 | **5 x 1** | 0.151 | 74 | 347 |
| **36 x 6** | 900 x 150 | **6 x 1** | 0.181 | 89 | 400 |
| **42 x 6** | 1050 x 150 | **7 x 1** | 0.211 | 104 | 453 |
| **48 x 6** | 1200 x 150 | **8 x 1** | 0.241 | 119 | 506 |
| **12 x 12** | 300 x 300 | **2 x 2** | 0.121 | 59 | 256 |
| **18 x 12** | 450 x 300 | **3 x 2** | 0.181 | 89 | 382 |
| **24 x 12** | 600 x 300 | **4 x 2** | 0.241 | 119 | 512 |
| **30 x 12** | 750 x 300 | **5 x 2** | 0.301 | 148 | 650 |
| **36 x 12** | 900 x 300 | **6 x 2** | 0.362 | 178 | 788 |
| **42 x 12** | 1050 x 300 | **7 x 2** | 0.422 | 208 | 926 |
| **48 x 12** | 1200 x 300 | **8 x 2** | 0.482 | 237 | 1065 |

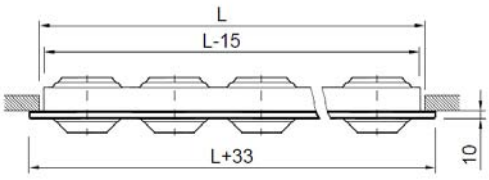
Min cfm and Max cfm are recommended minimum and maximum in general. Products can perform well below and above recommended cfm, depending on the Pressure Lloss, NC and Throws that are acceptable for your application.

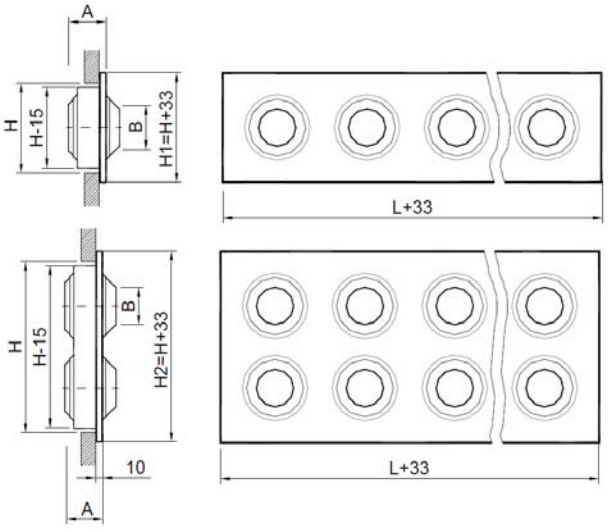
## KOO Imperial Dimensions




| Imperial List Size | L | H | A | B |
|---|---|---|---|---|
| **8 x 4** | 7 7/8" | 3 15/16" | 1 3/8" | 1 47/64" |
| **12 x 4** | 11 13/16" | 3 15/16" | 1 3/8" | 1 47/64" |
| **16 x 4** | 15 3/4" | 3 15/16" | 1 3/8" | 1 47/64" |
| **20 x 4** | 19 11/16" | 3 15/16" | 1 3/8" | 1 47/64" |
| **24 x 4** | 23 5/8" | 3 15/16" | 1 3/8" | 1 47/64" |
| **28 x 4** | 27 9/16" | 3 15/16" | 1 3/8" | 1 47/64" |
| **32 x 4** | 31 1/2" | 3 15/16" | 1 3/8" | 1 47/64" |
| **36 x 4** | 35 7/16" | 3 15/16" | 1 3/8" | 1 47/64" |
| **40 x 4** | 39 3/8" | 3 15/16" | 1 3/8" | 1 47/64" |
| **8 x 8** | 7 7/8" | 7 7/8" | 1 3/8" | 1 47/64" |
| **12 x 8** | 11 13/16" | 7 7/8" | 1 3/8" | 1 47/64" |
| **16 x 8** | 15 3/4" | 7 7/8" | 1 3/8" | 1 47/64" |
| **20 x 8** | 19 11/16" | 7 7/8" | 1 3/8" | 1 47/64" |
| **24 x 8** | 23 5/8" | 7 7/8" | 1 3/8" | 1 47/64" |
| **28 x 8** | 27 9/16" | 7 7/8" | 1 3/8" | 1 47/64" |
| **32 x 8** | 31 1/2" | 7 7/8" | 1 3/8" | 1 47/64" |
| **36 x 8** | 35 7/16" | 7 7/8" | 1 3/8" | 1 47/64" |
| **40 x 8** | 39 3/8" | 7 7/8" | 1 3/8" | 1 47/64" |
| **12 x 6** | 11 13/16" | 5 29/32" | 2 1/4" | 2 13/32" |
| **18 x 6** | 17 23/32" | 5 29/32" | 2 1/4" | 2 13/32" |
| **24 x 6** | 23 5/8" | 5 29/32" | 2 1/4" | 2 13/32" |
| **30 x 6** | 29 17/32" | 5 29/32" | 2 1/4" | 2 13/32" |
| **36 x 6** | 35 7/16" | 5 29/32" | 2 1/4" | 2 13/32" |
| **42 x 6** | 41 11/32" | 5 29/32" | 2 1/4" | 2 13/32" |
| **48 x 6** | 47 1/4" | 5 29/32" | 2 1/4" | 2 13/32" |
| **12 x 12** | 11 13/16" | 11 13/16" | 2 1/4" | 2 13/32" |
| **18 x 12** | 17 23/32" | 11 13/16" | 2 1/4" | 2 13/32" |
| **24 x 12** | 23 5/8" | 11 13/16" | 2 1/4" | 2 13/32" |
| **30 x 12** | 29 17/32" | 11 13/16" | 2 1/4" | 2 13/32" |
| **36 x 12** | 35 7/16" | 11 13/16" | 2 1/4" | 2 13/32" |
| **42 x 12** | 41 11/32" | 11 13/16" | 2 1/4" | 2 13/32" |
| **48 x 12** | 47 1/4" | 11 13/16" | 2 1/4" | 2 13/32" |

## Metric Dimensions




| H | A | B |
|---|---|---|
| **100** | 35 | 44 |
| **150** | 61 | 57 |
| **200** | 35 | 44 |
| **300** | 61 | 57 |

# KOO Performance Data - Straight Air Flow - Smaller Nozzles - 1 Row

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8 x 4 (200 x 100) | CFM | 15 | 30 | 45 | 60 | 75 | 90 | 115 | 130 |
| | Pressure Loss (in.w.g.) | 0.025 | 0.078 | 0.158 | 0.257 | 0.378 | 0.512 | 0.783 | 0.961 |
| | NC | - | - | 18 | 26 | 33 | 38 | 45 | 48 |
| | Throw (ft) - Coanda Effect | 6-10-15 | 12-19-29 | 17-29-43 | 22-37-56 | 28-46-69 | 33-54-82 | 41-69-103 | 46-77-115 |
| | Throw (ft) - No Ceiling Effect | 5-8-12 | 9-15-22 | 13-21-32 | 17-28-42 | 21-35-52 | 25-41-61 | 31-52-77 | 35-58-87 |
| 12 x 4 (300 x 100) | CFM | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 |
| | Pressure Loss (in.w.g.) | 0.018 | 0.058 | 0.117 | 0.191 | 0.28 | 0.382 | 0.497 | 0.625 |
| | NC | - | - | 15 | 23 | 29 | 34 | 39 | 42 |
| | Throw (ft) - Coanda Effect | 6-10-16 | 12-20-30 | 18-29-44 | 23-39-58 | 29-48-72 | 34-57-85 | 39-65-98 | 45-74-111 |
| | Throw (ft) - No Ceiling Effect | 5-8-12 | 9-15-23 | 13-22-33 | 17-29-44 | 21-36-54 | 25-42-64 | 29-49-74 | 33-56-84 |
| 16 x 4 (400 x 100) | CFM | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
| | Pressure Loss (in.w.g.) | 0.02 | 0.064 | 0.128 | 0.208 | 0.306 | 0.416 | 0.543 | 0.68 |
| | NC | - | - | 18 | 24 | 29 | 32 | 35 | 38 |
| | Throw (ft) - Coanda Effect | 7-11-17 | 13-22-32 | 19-32-48 | 25-42-62 | 31-51-77 | 37-61-91 | 42-71-106 | 48-80-120 |
| | Throw (ft) - No Ceiling Effect | 5-9-13 | 10-16-24 | 14-24-36 | 19-31-47 | 23-39-58 | 27-46-68 | 32-53-79 | 36-60-90 |
| 20 x 4 (500 x 100) | CFM | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 |
| | Pressure Loss (in.w.g.) | 0.018 | 0.059 | 0.117 | 0.192 | 0.281 | 0.384 | 0.5 | 0.628 |
| | NC | - | - | 18 | 24 | 29 | 33 | 37 | 40 |
| | Throw (ft) - Coanda Effect | 7-12-18 | 14-23-35 | 21-34-52 | 27-45-68 | 33-56-83 | 40-66-99 | 46-76-114 | 52-77-130 |
| | Throw (ft) - No Ceiling Effect | 5-9-14 | 11-18-26 | 15-26-39 | 20-34-51 | 25-42-62 | 30-49-74 | 34-57-86 | 39-57-97 |
| 24 x 4 (600 x 100) | CFM | 40 | 80 | 120 | 160 | 200 | 240 | 280 | 320 |
| | Pressure Loss (in.w.g.) | 0.018 | 0.058 | 0.116 | 0.189 | 0.277 | 0.378 | 0.493 | 0.619 |
| | NC | - | - | 21 | 28 | 33 | 37 | 40 | 43 |
| | Throw (ft) - Coanda Effect | 10-16-24 | 18-31-46 | 27-45-68 | 35-59-88 | 44-73-109 | 52-86-130 | 60-100-150 | 68-113-170 |
| | Throw (ft) - No Ceiling Effect | 7-12-18 | 14-23-35 | 20-34-51 | 27-44-66 | 33-55-82 | 39-65-97 | 45-75-112 | 51-85-127 |
| 28 x 4 (700 x 100) | CFM | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 |
| | Pressure Loss (in.w.g.) | 0.02 | 0.064 | 0.129 | 0.21 | 0.308 | 0.42 | 0.547 | 0.688 |
| | NC | - | 17 | 26 | 32 | 37 | 41 | 44 | 47 |
| | Throw (ft) - Coanda Effect | 10-17-26 | 20-33-50 | 29-48-73 | 38-63-95 | 47-78-117 | 56-93-139 | 64-107-161 | 73-122-183 |
| | Throw (ft) - No Ceiling Effect | 8-13-19 | 15-25-37 | 22-36-54 | 29-48-71 | 35-59-88 | 42-70-104 | 48-80-121 | 55-91-137 |
| 32 x 4 (800 x 100) | CFM | 60 | 120 | 180 | 240 | 300 | 360 | 420 | 480 |
| | Pressure Loss (in.w.g.) | 0.02 | 0.065 | 0.13 | 0.213 | 0.312 | 0.426 | 0.554 | 0.696 |
| | NC | - | 17 | 26 | 32 | 37 | 41 | 44 | 47 |
| | Throw (ft) - Coanda Effect | 11-19-28 | 21-36-54 | 31-52-79 | 41-69-103 | 51-85-127 | 60-101-151 | 70-116-174 | 79-132-198 |
| | Throw (ft) - No Ceiling Effect | 8-14-21 | 16-27-40 | 24-39-59 | 31-51-77 | 38-64-95 | 45-75-113 | 52-87-131 | 59-99-148 |
| 36 x 4 (900 x 100) | CFM | 60 | 120 | 180 | 240 | 300 | 360 | 420 | 480 |
| | Pressure Loss (in.w.g.) | 0.016 | 0.053 | 0.106 | 0.173 | 0.253 | 0.346 | 0.45 | 0.566 |
| | NC | - | 15 | 24 | 30 | 35 | 39 | 42 | 45 |
| | Throw (ft) - Coanda Effect | 10-17-25 | 19-32-48 | 28-47-70 | 37-61-92 | 45-75-113 | 54-90-134 | 62-104-155 | 70-117-176 |
| | Throw (ft) - No Ceiling Effect | 7-12-19 | 14-24-36 | 21-35-52 | 28-46-69 | 34-57-85 | 40-67-101 | 47-78-117 | 53-88-132 |
| 40 x 4 (1000 x 100) | CFM | 70 | 140 | 210 | 280 | 350 | 420 | 490 | 560 |
| | Pressure Loss (in.w.g.) | 0.018 | 0.057 | 0.114 | 0.187 | 0.274 | 0.375 | 0.488 | 0.613 |
| | NC | - | 16 | 25 | 32 | 37 | 41 | 44 | 47 |
| | Throw (ft) - Coanda Effect | 12-19-29 | 22-37-55 | 32-54-81 | 42-71-106 | 52-87-131 | 62-104-155 | 72-120-180 | 81-136-204 |
| | Throw (ft) - No Ceiling Effect | 9-14-22 | 17-28-41 | 24-40-61 | 32-53-80 | 39-65-98 | 47-78-117 | 54-90-135 | 61-102-153 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

# KOO Performance Data - Straight Air Flow - Smaller Nozzles - 2 Rows

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8 x 8 (200 x 200) | CFM | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 |
| | Pressure Loss (in.w.g.) | 0.027 | 0.089 | 0.178 | 0.291 | 0.426 | 0.581 | 0.757 | 0.951 |
| | NC | - | - | 20 | 28 | 35 | 40 | 44 | 48 |
| | Throw (ft) - Coanda Effect | 8-13-20 | 15-26-39 | 23-38-56 | 30-49-74 | 37-61-91 | 43-72-108 | 50-84-125 | 57-95-142 |
| | Throw (ft) - No Ceiling Effect | 6-10-15 | 12-19-29 | 17-28-42 | 22-37-56 | 27-46-68 | 33-54-81 | 38-63-94 | 43-71-107 |
| 12 x 8 (300 x 200) | CFM | 40 | 80 | 120 | 160 | 200 | 240 | 280 | 320 |
| | Pressure Loss (in.w.g.) | 0.018 | 0.058 | 0.116 | 0.189 | 0.277 | 0.378 | 0.493 | 0.619 |
| | NC | - | - | 21 | 27 | 32 | 35 | 39 | 41 |
| | Throw (ft) - Coanda Effect | 8-13-19 | 15-24-37 | 21-36-54 | 28-47-70 | 35-58-87 | 41-69-103 | 48-79-119 | 54-90-135 |
| | Throw (ft) - No Ceiling Effect | 6-10-14 | 11-18-27 | 16-27-40 | 21-35-53 | 26-43-65 | 31-51-77 | 36-59-89 | 40-67-101 |
| 16 x 8 (400 x 200) | CFM | 50 | 100 | 150 | 200 | 250 | 300 | 400 | 500 |
| | Pressure Loss (in.w.g.) | 0.014 | 0.047 | 0.093 | 0.153 | 0.224 | 0.305 | 0.499 | 0.731 |
| | NC | - | - | 20 | 26 | 31 | 35 | 41 | 46 |
| | Throw (ft) - Coanda Effect | 9-16-24 | 18-30-45 | 26-44-66 | 35-58-87 | 43-71-107 | 51-85-127 | 67-111-166 | 82-137-205 |
| | Throw (ft) - No Ceiling Effect | 7-12-18 | 14-23-34 | 20-33-50 | 26-43-65 | 32-53-80 | 38-64-95 | 50-83-125 | 62-103-154 |
| 20 x 8 (500 x 200) | CFM | 60 | 120 | 180 | 240 | 300 | 400 | 500 | 600 |
| | Pressure Loss (in.w.g.) | 0.013 | 0.044 | 0.088 | 0.144 | 0.211 | 0.345 | 0.506 | 0.45 |
| | NC | - | - | 20 | 26 | 31 | 37 | 42 | 46 |
| | Throw (ft) - Coanda Effect | 10-17-25 | 19-32-48 | 28-47-70 | 37-61-92 | 45-75-113 | 59-99-148 | 73-122-183 | 87-145-217 |
| | Throw (ft) - No Ceiling Effect | 7-12-19 | 14-24-36 | 21-35-52 | 28-46-69 | 34-57-85 | 45-74-111 | 55-92-137 | 65-109-163 |
| 24 x 8 (600 x 200) | CFM | 70 | 140 | 210 | 280 | 350 | 420 | 500 | 600 |
| | Pressure Loss (in.w.g.) | 0.015 | 0.05 | 0.1 | 0.163 | 0.238 | 0.326 | 0.439 | 0.599 |
| | NC | - | - | 20 | 27 | 32 | 36 | 40 | 44 |
| | Throw (ft) - Coanda Effect | 10-17-25 | 19-32-48 | 28-47-70 | 37-62-92 | 46-76-114 | 54-90-135 | 64-106-159 | 76-126-189 |
| | Throw (ft) - No Ceiling Effect | 8-13-19 | 14-24-36 | 21-35-53 | 28-46-69 | 34-57-85 | 41-68-101 | 48-80-120 | 57-95-142 |
| 28 x 8 (700 x 200) | CFM | 80 | 160 | 240 | 320 | 400 | 500 | 600 | 700 |
| | Pressure Loss (in.w.g.) | 0.019 | 0.062 | 0.125 | 0.204 | 0.299 | 0.439 | 0.599 | 0.78 |
| | NC | - | - | 21 | 27 | 32 | 37 | 41 | 45 |
| | Throw (ft) - Coanda Effect | 11-19-28 | 22-36-55 | 32-53-80 | 42-70-105 | 52-86-129 | 64-106-159 | 76-126-189 | 88-146-219 |
| | Throw (ft) - No Ceiling Effect | 9-14-21 | 16-27-41 | 24-40-60 | 31-52-79 | 39-65-97 | 48-80-120 | 57-95-142 | 66-109-164 |
| 32 x 8 (800 x 200) | CFM | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| | Pressure Loss (in.w.g.) | 0.019 | 0.064 | 0.127 | 0.208 | 0.305 | 0.416 | 0.542 | 0.681 |
| | NC | - | 15 | 23 | 30 | 35 | 39 | 42 | 45 |
| | Throw (ft) - Coanda Effect | 13-21-32 | 25-41-61 | 36-60-90 | 47-79-118 | 58-97-145 | 69-115-173 | 80-133-200 | 91-151-226 |
| | Throw (ft) - No Ceiling Effect | 10-16-24 | 18-31-46 | 27-45-67 | 35-59-88 | 44-73-109 | 52-86-129 | 60-100-150 | 68-113-170 |
| 36 x 8 (900 x 200) | CFM | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| | Pressure Loss (in.w.g.) | 0.016 | 0.051 | 0.102 | 0.167 | 0.244 | 0.334 | 0.434 | 0.546 |
| | NC | - | - | 21 | 27 | 32 | 36 | 40 | 43 |
| | Throw (ft) - Coanda Effect | 11-19-29 | 22-36-55 | 32-53-8012 | 42-70-105 | 52-86-130 | 62-103-154 | 71-119-178 | 81-134-202 |
| | Throw (ft) - No Ceiling Effect | 9-14-21 | 16-27-41 | 24-40-6009 | 32-53-79 | 39-65-97 | 46-77-115 | 53-89-133 | 61-101-151 |
| 40 x 8 (1000 x 200) | CFM | 125 | 250 | 375 | 500 | 600 | 700 | 800 | 1000 |
| | Pressure Loss (in.w.g.) | 0.019 | 0.061 | 0.122 | 0.2 | 0.273 | 0.355 | 0.446 | 0.653 |
| | NC | - | 16 | 25 | 31 | 35 | 39 | 42 | 46 |
| | Throw (ft) - Coanda Effect | 13-21-31 | 24-40-60 | 35-59-88 | 46-77-115 | 55-91-137 | 63-106-159 | 72-120-180 | 89-148-222 |
| | Throw (ft) - No Ceiling Effect | 9-16-24 | 18-30-45 | 26-44-66 | 35-58-87 | 41-69-103 | 48-79-119 | 54-90-135 | 67-111-166 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

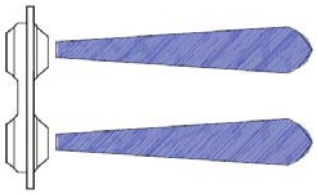
# KOO Performance Data - Straight Air Flow - Larger Nozzles - 1 Row



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12 x 6 (300 x 150) | CFM | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
| | Pressure Loss (in.w.g.) | 0.012 | 0.042 | 0.09 | 0.152 | 0.231 | 0.323 | 0.431 | 0.551 |
| | NC | - | - | 20 | 26 | 31 | 35 | 39 | 42 |
| | Throw (ft) - Coanda Effect | 6-10-14 | 12-20-30 | 19-32-48 | 26-43-65 | 33-55-83 | 40-67-101 | 48-80-120 | 55-92-138 |
| | Throw (ft) - No Ceiling Effect | 4-7-11 | 9-15-23 | 14-24-36 | 19-32-49 | 25-41-62 | 30-50-76 | 36-60-90 | 41-69-104 |
| 18 x 6 (450 x 150) | CFM | 40 | 80 | 120 | 160 | 200 | 240 | 280 | 320 |
| | Pressure Loss (in.w.g.) | 0.012 | 0.045 | 0.095 | 0.162 | 0.245 | 0.344 | 0.458 | 0.587 |
| | NC | - | - | 21 | 27 | 32 | 36 | 40 | 43 |
| | Throw (ft) - Coanda Effect | 7-12-17 | 15-25-37 | 23-38-57 | 31-52-78 | 40-67-100 | 49-81-122 | 58-96-145 | 67-111-167 |
| | Throw (ft) - No Ceiling Effect | 5-9-13 | 11-18-28 | 17-29-43 | 24-39-59 | 30-50-75 | 37-61-92 | 43-72-108 | 50-84-125 |
| 24 x 6 (600 x 150) | CFM | 50 | 100 | 150 | 200 | 250 | 300 | 400 | 500 |
| | Pressure Loss (in.w.g.) | 0.012 | 0.042 | 0.089 | 0.152 | 0.23 | 0.322 | 0.55 | 0.833 |
| | NC | - | - | 21 | 27 | 32 | 36 | 42 | 47 |
| | Throw (ft) - Coanda Effect | 7-11-17 | 15-24-36 | 23-38-57 | 31-52-78 | 40-66-99 | 48-81-121 | 66-110-166 | 85-141-211 |
| | Throw (ft) - No Ceiling Effect | 5-9-13 | 11-18-27 | 17-28-43 | 23-39-58 | 30-50-74 | 36-60-91 | 50-83-124 | 63-106-158 |
| 30 x 6 (750 x 150) | CFM | 60 | 120 | 180 | 240 | 300 | 400 | 500 | 600 |
| | Pressure Loss (in.w.g.) | 0.013 | 0.045 | 0.097 | 0.165 | 0.25 | 0.426 | 0.645 | 0.905 |
| | NC | - | - | 20 | 27 | 32 | 38 | 43 | 47 |
| | Throw (ft) - Coanda Effect | 7-12-17 | 15-25-37 | 23-38-58 | 32-53-79 | 40-67-101 | 55-92-138 | 70-117-176 | 86-143-214 |
| | Throw (ft) - No Ceiling Effect | 5-9-13 | 11-19-28 | 17-29-43 | 24-39-59 | 30-50-75 | 41-69-103 | 53-88-132 | 64-107-161 |
| 36 x 6 (900 x 150) | CFM | 70 | 140 | 210 | 280 | 350 | 420 | 500 | 600 |
| | Pressure Loss (in.w.g.) | 0.013 | 0.046 | 0.097 | 0.166 | 0.252 | 0.353 | 0.488 | 0.685 |
| | NC | - | - | 21 | 27 | 32 | 36 | 40 | 44 |
| | Throw (ft) - Coanda Effect | 7-12-17 | 15-25-37 | 23-39-58 | 32-53-79 | 41-68-101 | 49-82-124 | 60-100-150 | 73-122-183 |
| | Throw (ft) - No Ceiling Effect | 5-9-13 | 11-19-28 | 17-29-44 | 24-40-60 | 30-51-76 | 37-62-93 | 45-75-112 | 55-91-137 |
| 42 x 6 (1050 x 150) | CFM | 80 | 160 | 240 | 320 | 400 | 500 | 600 | 700 |
| | Pressure Loss (in.w.g.) | 0.012 | 0.043 | 0.092 | 0.157 | 0.238 | 0.36 | 0.506 | 0.673 |
| | NC | - | - | 21 | 27 | 32 | 37 | 41 | 44 |
| | Throw (ft) - Coanda Effect | 7-12-18 | 15-25-38 | 23-39-58 | 32-53-80 | 41-68-102 | 52-87-130 | 64-106-159 | 75-125-188 |
| | Throw (ft) - No Ceiling Effect | 5-9-13 | 11-19-28 | 18-29-44 | 24-40-60 | 31-51-77 | 39-65-98 | 48-80-119 | 56-94-141 |
| 48 x 6 (1200 x 150) | CFM | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| | Pressure Loss (in.w.g.) | 0.013 | 0.046 | 0.098 | 0.167 | 0.252 | 0.354 | 0.471 | 0.604 |
| | NC | - | 15 | 23 | 30 | 35 | 39 | 42 | 45 |
| | Throw (ft) - Coanda Effect | 9-15-22 | 19-32-48 | 30-50-75 | 41-68-102 | 52-87-130 | 64-106-159 | 75-125-188 | 87-145-218 |
| | Throw (ft) - No Ceiling Effect | 7-11-17 | 14-24-36 | 22-37-56 | 31-51-77 | 39-65-98 | 48-80-119 | 56-94-141 | 65-109-163 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

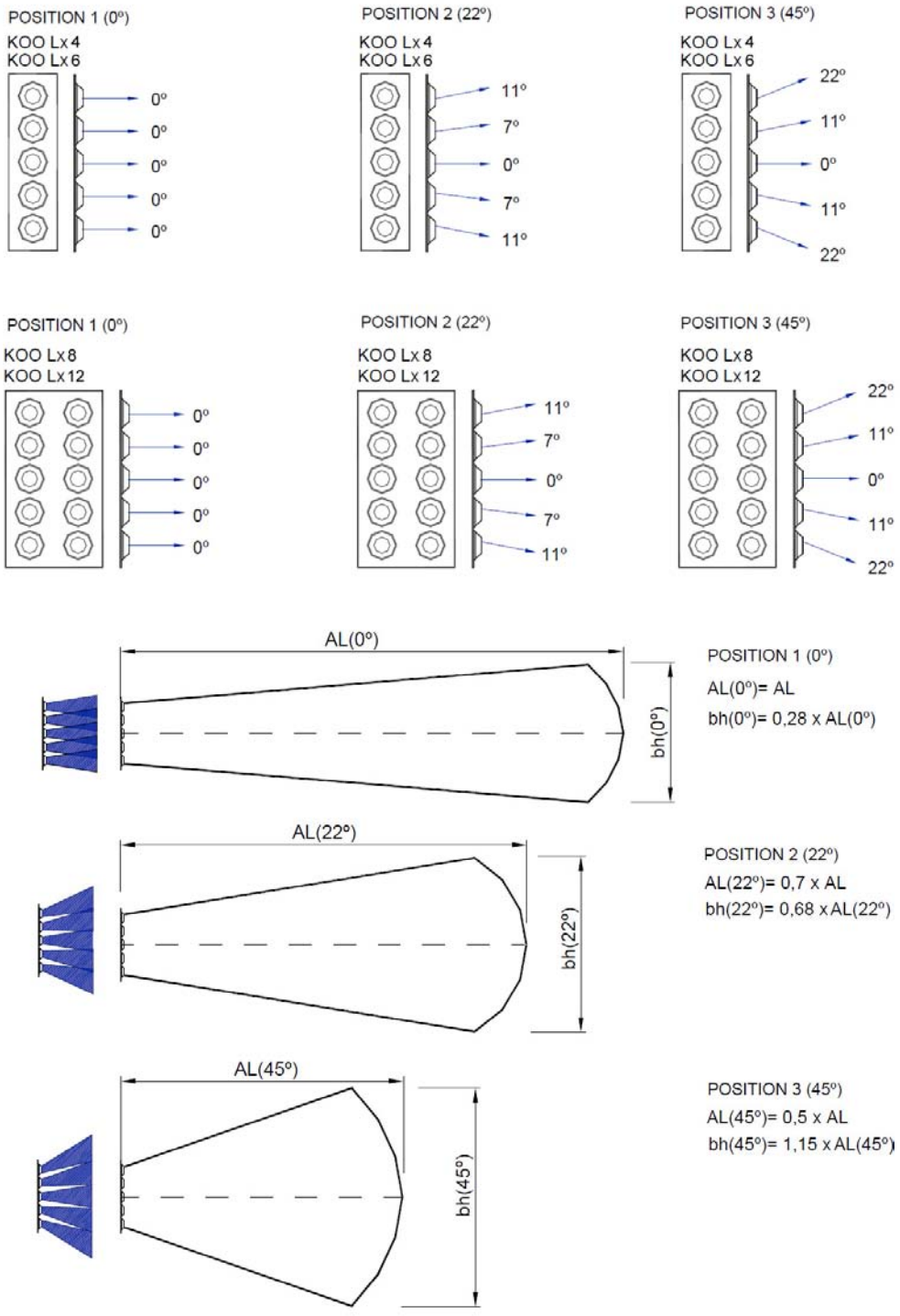
# K00 Performance Data - Straight Air Flow - Larger Nozzles - 2 Rows



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12 x 12 (300 x 300) | CFM | 40 | 80 | 120 | 160 | 200 | 250 | 300 | 350 |
| | Pressure Loss (in.w.g.) | 0.008 | 0.028 | 0.059 | 0.1 | 0.152 | 0.23 | 0.322 | 0.429 |
| | NC | - | - | 19 | 25 | 30 | 35 | 39 | 42 |
| | Throw (ft) - Coanda Effect | 7-12-17 | 15-25-37 | 23-38-57 | 31-52-78 | 40-67-100 | 51-85-128 | 62-104-156 | 74-123-184 |
| | Throw (ft) - No Ceiling Effect | 5-9-13 | 11-18-28 | 17-29-43 | 24-39-59 | 30-50-75 | 38-64-96 | 47-78-117 | 55-92-138 |
| 18 x 12 (450 x 300) | CFM | 75 | 150 | 225 | 300 | 375 | 450 | 525 | 600 |
| | Pressure Loss (in.w.g.) | 0.014 | 0.052 | 0.111 | 0.189 | 0.286 | 0.401 | 0.535 | 0.685 |
| | NC | - | - | 23 | 30 | 35 | 39 | 42 | 45 |
| | Throw (ft) - Coanda Effect | 9-15-22 | 19-31-47 | 29-49-74 | 40-67-101 | 51-86-128 | 63-104-157 | 74-124-185 | 86-143-214 |
| | Throw (ft) - No Ceiling Effect | 7-11-17 | 14-24-35 | 22-37-55 | 30-50-75 | 39-64-96 | 47-78-117 | 56-93-139 | 64-107-161 |
| 24 x 12 (600 x 300) | CFM | 80 | 160 | 240 | 320 | 400 | 480 | 560 | 640 |
| | Pressure Loss (in.w.g.) | 0.008 | 0.03 | 0.064 | 0.11 | 0.167 | 0.234 | 0.311 | 0.399 |
| | NC | - | - | 17 | 23 | 28 | 32 | 35 | 38 |
| | Throw (ft) - Coanda Effect | 10-16-24 | 20-34-51 | 32-53-79 | 43-72-108 | 55-92-138 | 67-112-168 | 80-133-199 | 92-153-230 |
| | Throw (ft) - No Ceiling Effect | 7-12-18 | 15-25-38 | 24-39-59 | 32-54-81 | 41-69-103 | 50-84-126 | 60-99-149 | 69-115-173 |
| 30 x 12 (750 x 300) | CFM | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.035 | 0.074 | 0.127 | 0.193 | 0.27 | 0.36 | 0.461 |
| | NC | - | - | 18 | 25 | 29 | 33 | 37 | 40 |
| | Throw (ft) - Coanda Effect | 9-15-22 | 19-32-48 | 30-50-75 | 41-68-102 | 52-87-130 | 64-106-159 | 75-125-188 | 87-145-218 |
| | Throw (ft) - No Ceiling Effect | 7-11-17 | 14-24-36 | 22-37-56 | 31-51-77 | 39-65-98 | 48-80-119 | 56-94-141 | 65-109-163 |
| 36 x 12 (900 x 300) | CFM | 125 | 250 | 375 | 500 | 625 | 750 | 875 | 1000 |
| | Pressure Loss (in.w.g.) | 0.011 | 0.038 | 0.082 | 0.139 | 0.211 | 0.296 | 0.394 | 0.505 |
| | NC | - | - | 19 | 25 | 30 | 34 | 38 | 41 |
| | Throw (ft) - Coanda Effect | 9-15-23 | 19-32-49 | 30-50-76 | 41-69-103 | 53-88-132 | 64-107-161 | 76-127-191 | 88-147-221 |
| | Throw (ft) - No Ceiling Effect | 7-11-17 | 15-24-36 | 23-38-57 | 31-52-78 | 40-66-99 | 48-81-121 | 57-95-143 | 66-110-165 |
| 42 x 12 (1050 x 300) | CFM | 150 | 300 | 450 | 600 | 750 | 900 | 1050 | 1200 |
| | Pressure Loss (in.w.g.) | 0.012 | 0.042 | 0.089 | 0.152 | 0.23 | 0.322 | 0.429 | 0.55 |
| | NC | - | - | 19 | 26 | 31 | 35 | 38 | 41 |
| | Throw (ft) - Coanda Effect | 11-19-28 | 24-40-59 | 37-61-92 | 51-84-126 | 64-107-161 | 79-131-197 | 93-155-233 | 108-179-269 |
| | Throw (ft) - No Ceiling Effect | 8-14-21 | 18-30-44 | 28-46-69 | 38-63-95 | 48-81-121 | 59-98-147 | 70-116-175 | 81-135-202 |
| 48 x 12 (1200 x 300) | CFM | 200 | 400 | 600 | 800 | 1000 | 1200 | 1400 | 1600 |
| | Pressure Loss (in.w.g.) | 0.017 | 0.061 | 0.129 | 0.22 | 0.333 | 0.467 | 0.622 | 0.798 |
| | NC | - | - | 22 | 29 | 33 | 38 | 41 | 44 |
| | Throw (ft) - Coanda Effect | 14-23-34 | 29-48-72 | 45-75-113 | 62-103-154 | 79-131-197 | 96-160-240 | 81-189-284 | 131-219-329 |
| | Throw (ft) - No Ceiling Effect | 10-17-25 | 22-36-54 | 34-56-84 | 46-77-116 | 59-98-147 | 72-120-180 | 61-142-213 | 99-164-246 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

# KOO Performance Data - Airflow Spread Correction Factors

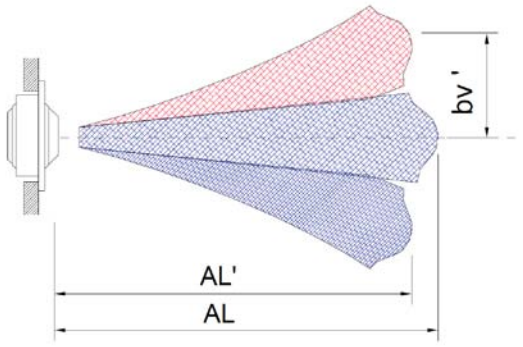



**Calculation Example**

We need to calculate the throw and spread for a KOO 48 12 configured at 45°, installed in the sidewall (no ceiling effect) and supplying 600 cfm of air.

Throw at 40 fpm terminal velocity: AL = 84 ft
**Corrected throw for 45° angle**: AL(45) = 84 x 0.5 = **42 ft**
**Spread for 45° angle**: bh(45) = 42 x 1.15 = **48.3 ft**

# K00 Performance Data - Temperature Correction Factors

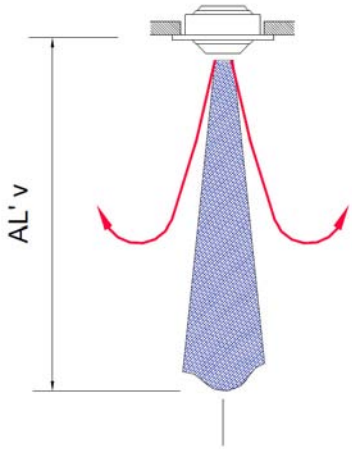



**AL' = AL x Kh**
**bv' = AL x Kv**

Kh = Throw Correction Factor
Kv = Correction Factor for Vertical Diffusion
AL = Throw

| Delta T Correction Factors | | | | | |
|---|---|---|---|---|---|
| **Δ T (F)** | **Kh** | **Kv1** | **Kv2** | **Kv3** | **Kv4** |
| **-25** | 0.84 | -0.38 | -0.49 | -0.67 | -0.79 |
| **-20** | 0.87 | -0.36 | -0.4 | -0.505 | -0.645 |
| **-15** | 0.91 | -0.23 | -0.295 | -0.375 | -0.48 |
| **-10** | 0.935 | -0.16 | -0.2 | -0.26 | -0.33 |
| **-5** | 0.97 | -0.075 | -0.1 | -0.115 | -0.155 |
| **0** | 1 | 0 | 0 | 0 | 0 |
| **5** | 0.97 | 0.075 | 0.1 | 0.115 | 0.155 |
| **10** | 0.935 | 0.16 | 0.2 | 0.26 | 0.33 |
| **15** | 0.91 | 0.23 | 0.295 | 0.375 | 0.48 |
| **20** | 0.87 | 0.36 | 0.4 | 0.505 | 0.645 |
| **25** | 0.84 | 0.38 | 0.49 | 0.67 | 0.79 |

| Kv Factor Selection Based on Dimension | | | |
|---|---|---|---|
| **Kv1** | **Kv2** | **Kv3** | **Kv4** |
| 8 x 4 (200x100) | 20 x 4 (500x100) | 32 x 4 (800x100) | 28 x 4 (700x800) |
| 12 x 4 (300x100 | 24 x 4 (600x100) | 36 x 4 (900x100) | 32 x 8 (800x200) |
| 16 x 4 (400x100) | 28 x 4 (700x100) | 40 x 4 (1000x100) | 36 x 8 (900x200) |
| 8 x 8 (200x200) | 12 x 8 (300x200) | 16 x 8 (400x200) | 40 x 8 (1000x200) |
| 12 x 6 (300x150) | 18 x 6 (450x150) | 20 x 8 (500x200) | 42 x 6 (1050x150) |
| | 24 x 6 (600x150) | 24 x 8 (600x200) | 48 x 6 (1200x150) |
| | 12 x 12 (300x300) | 30 x 6 (750x150) | 24 x 12 (600x300) |
| | | 36 x 6 (900x150) | 30 x 12 (750x300) |
| | | 18 x 12 (450x300) | 36 x 12 (900x300) |
| | | | 42 x 12 (1050x300) |
| | | | 48 x 12 (1200x300) |

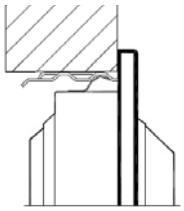



**AL'v = AL x Kx**

| Delta T Correction Factor For Vertical Throw | |
|---|---|
| **Δ T (F)** | **Kx** |
| -25 | 1.445 |
| -20 | 1.355 |
| -15 | 1.27 |
| -10 | 1.18 |
| -5 | 1.09 |
| 0 | 1 |
| 5 | 0.915 |
| 10 | 0.82 |
| 15 | 0.73 |
| 20 | 0.645 |
| 25 | 0.555 |

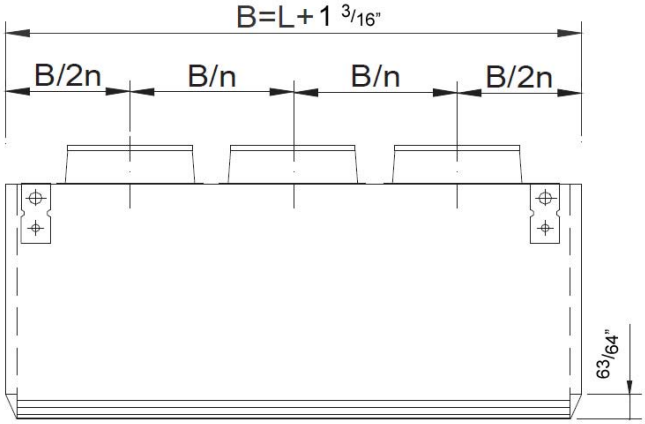
## KOO Spring Clips Mounting

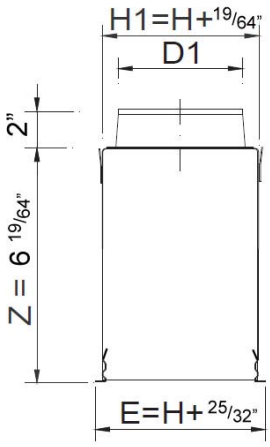
Invisible fixing by means of pressure clips with security hooks for ceiling installation. Requires PLRX plenum or CM mounting frame.



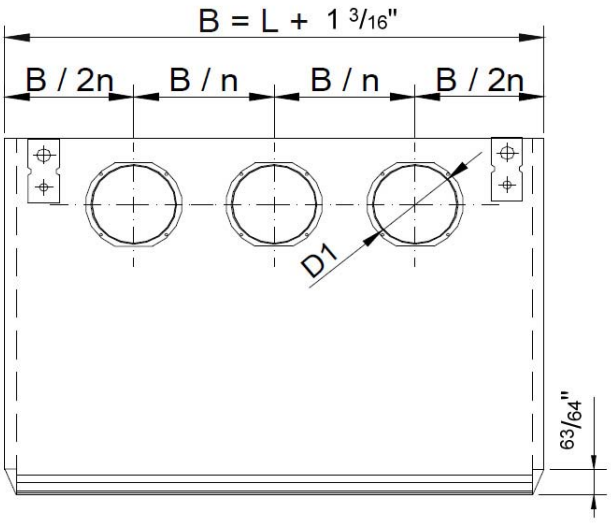
## PLXR Plenum

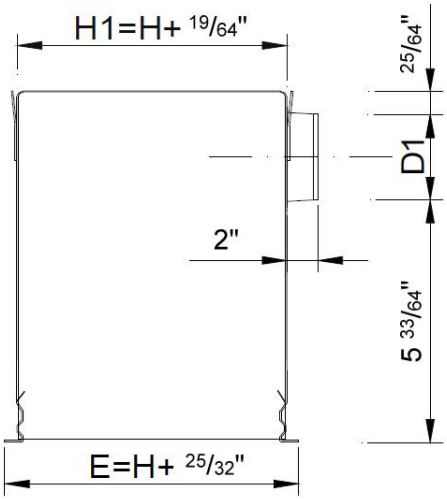
PLRX-T



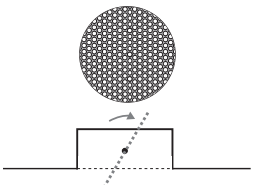

PLRX-S



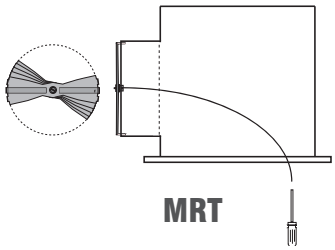

| Neck Diameter and Quantity | | | | | | |
|---|---|---|---|---|---|---|
| L | | < 24" | < 36" | < 40" | < 48" | >= 48" |
| H | 4" | 1x 4"D | 2x 4"D | 2x 4"D | 2x 4"D | 3x 4"D |
| | 6" | 1x 5"D | 2x 5"D | 2x 5"D | 2x 5"D | 3x 5"D |
| | 8" | 1x 8"D | 1x 8"D | 2x 8"D | 2x 8"D | 2x 8"D |
| | 12" | 1x 10"D | 1x 10"D | 1x 10"D | 2x 10"D | 2x 10"D |

## Integrated Air Volume Dampers



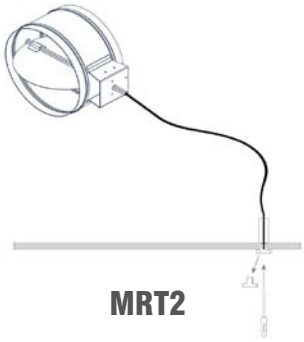
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



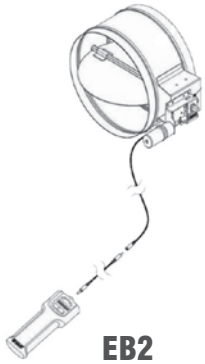
**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

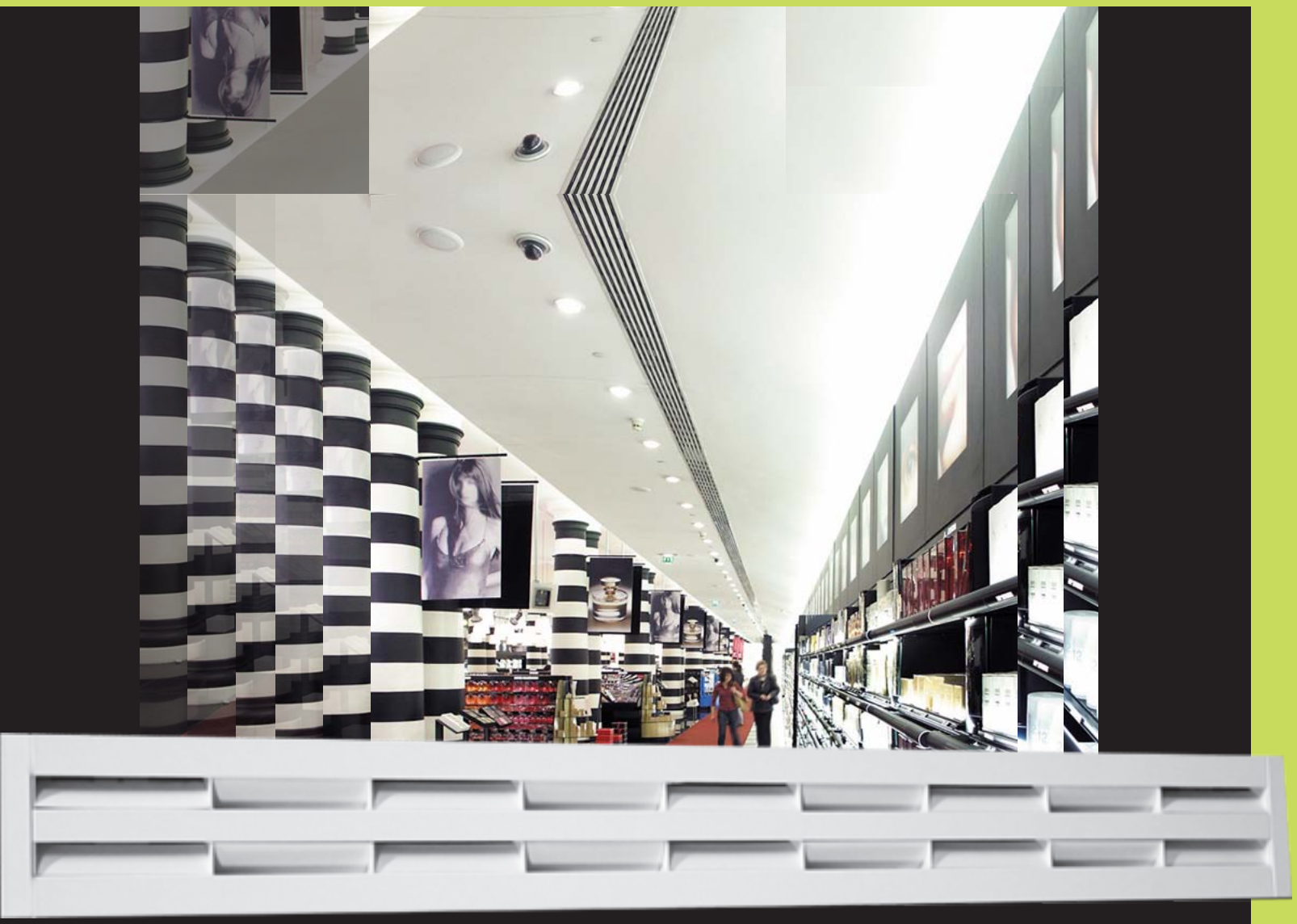
**Note: MRT, MRT2, EB and EB2 Damper Options are only available for KOO with 2 rows (Height 8" and 12").**

## How to Specify KOO Series

Supply and mounting of model KOO adjustable long throw multi-jet nozzle diffuser. Each nozzle rotates independently to adjust direction of the airflow. Constructed from spun aluminum nozzles with galvanized steel face, powder coated in white M9016. Supply with PLRX plenum and concealed mounting clips. By EffectiV HVAC / MADEL.

## How to Order KOO Series

| KOO | -S | 48 | 6 | /M9016 | + PLRX-S-R 48 6 | |
|---|---|---|---|---|---|---|
| | | | | Finish | /M9006 | Metallic Grey (RAL 9006 White Aluminum) |
| | | | | | /M9016 | White (RAL 9016 Traffic White) |
| | | | Height | | 4, 6, 8, 12 | |
| | | Width | | | 8, 12, 16, 18, 20, 24, 28, 30, 32, 36, 40, 42, 48 | |
| | Mounting | | | | S | Invisible fixing by means of pressure clips |
| | | | | | T | Visible screws |



# LSD

## High Induction Linear Slot Diffuser

EFFECTIV™

Sept 15 2020

# LSD SERIES
## High Induction Linear Slot Diffuser



**LSD**
**by MADEL®**

- Each sector can be adjusted independently
- Possibility of 1 way, 2 way, 2 way alternate or vertical air diffusion patterns, or hybrid combinations
- Default 2 way alternate pattern creates high induction and allows 2 way diffusion even from a single slot
- Architecturally appealing lines and finish
- Invisible clip mounting system available with PLSD plenum, great for drywall mounting without apparent screws, very fast and secure
- Can be joined to create long continuous diffusers, 90 degree corners also available
- Diffuser constructed from aluminum with PVC adjustable curved blades
- Available with white or black vanes

The LSD series High Induction Linear Slot Diffusers are designed to combine aesthetics with technical performance.

Available with 1 to 4 slots, LSD is suitable for both supply and return. Its 4" (100mm) long sectors are made of curved blades which can rotate independently to obtain a horizontal distribution of the air in one or two directions, or a vertical projection.

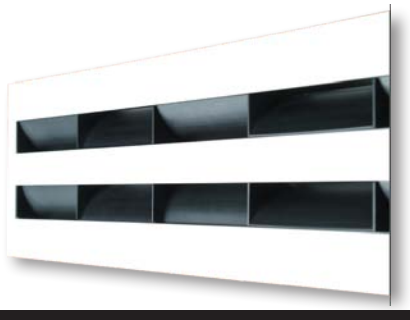
Its full adjustability and high induction ratio are what make LSD so unique. It can easily be adjusted to supply air in custom patterns when required, either to avoid specific people or objects, or to target windows and other sources of heat and cold.

Furthermore, its 2 way alternate pattern, which is the standard configuration, provides an airflow similar to other linear diffusers, yet providing a much higher induction ratio, meaning it mixes more room air with the same quantity of supplied air.

LSD's technology allows for high speed discharge of air with low acoustic noise.

It can be mounted in false ceilings or suspended from the ceiling. Multiple sections can be joined together to form continuous diffusers with active and inactive areas, without breaking the architectural lines. 90 degree angles are available for continuous designs.

LSD diffusers admit a flow variation of 60% while keeping the air stream stable. It can be used from 8.5 feet to 13 feet (2.6 up to 4 meters) high and at a temperature differential up to 22ºF (12ºC).

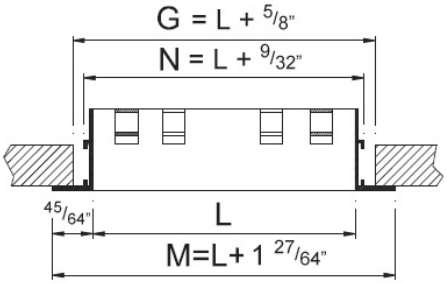


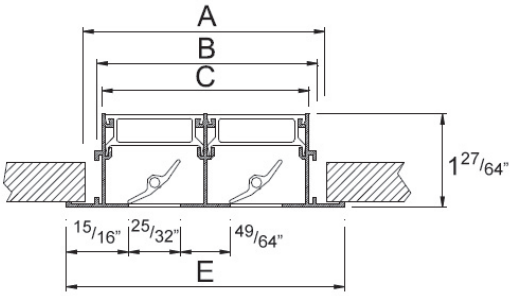
## Some Applications

- Fenestrated Walls
- Hallways and Long Spaces
- Commercial Spaces: Restaurants, Bars, Hotels, Lobbies, Stores, Outlets
- Offices and Meeting Rooms
- Schools and Classrooms
- Gymnasiums & Training Facilities
- Libraries
- Theathers
- Clean Rooms
- Server Rooms



## LSD Dimensions



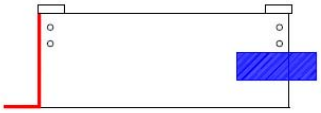

| Nb Slots | E | A | B | C |
|---|---|---|---|---|
| 1 | 2 43/64" | 2 11/64" | 1 27/32" | 1 19/32" |
| 2 | 4 7/32" | 3 47/64" | 3 25/64" | 3 9/64" |
| 3 | 5 49/64" | 5 9/32" | 4 15/16" | 4 45/64" |
| 4 | 7 5/16" | 6 13/16" | 6 31/64" | 6 1/4" |

## Continuous Linears

LSD can be ordered in sections with or without End Borders to form continuous linear slot diffusers of virtually any length.

The maximum length for one section is 6′ 6″ (2m).

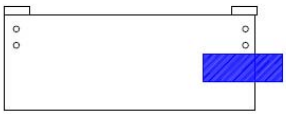
LSD-ARI



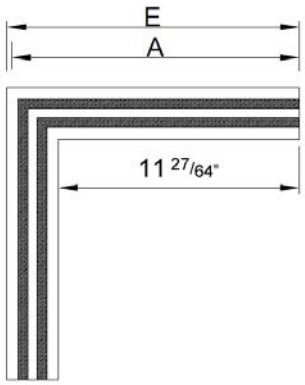
LSD-ARD



LSD-INT

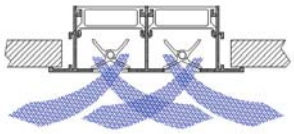


Inactive 90º angles for LSD also available




**LSD-A90**

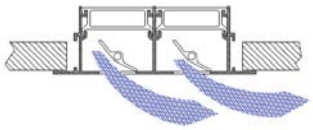
## Airflow Balancing



**2 Way Alternate (Default)**



**2 Way**



**1 Way**

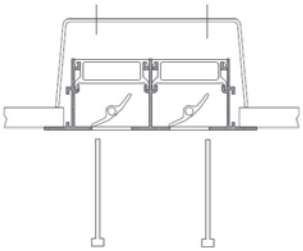


**Vertical**

Independently adjustable sectored vanes allow for multiple air diffusion patterns. The standard (factory) configuration is 2 Way Alternate and provides optimal performance and comfort in most applications.

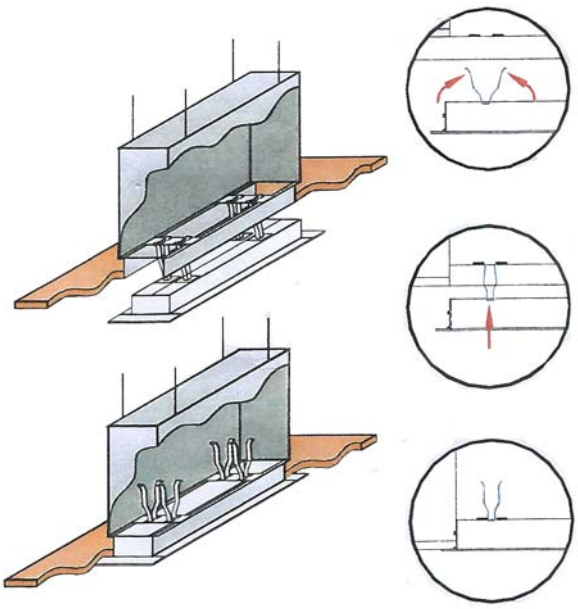
## PM Mounting Kit

C-clip with long screws for installation without plenum directly into drywall.

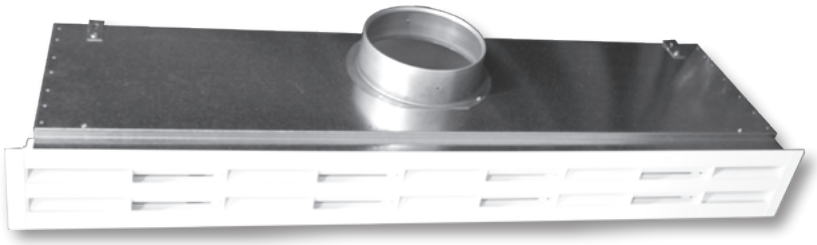


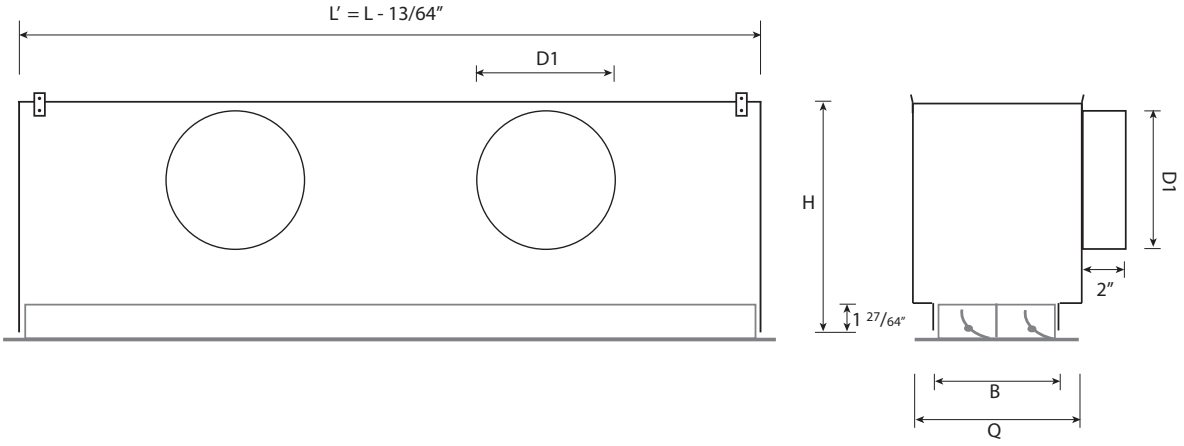
## PL Hidden Mounting System

PLSD Plenum with PL mounting kit for LSD diffuser allow for quick and secure installation in drywall or open ceilings. LSD diffuser is attached to the plenum by means of spring clips and hooks. The diffuser can be removed and re-installed in just a few seconds for cleaning or balancing purposes.



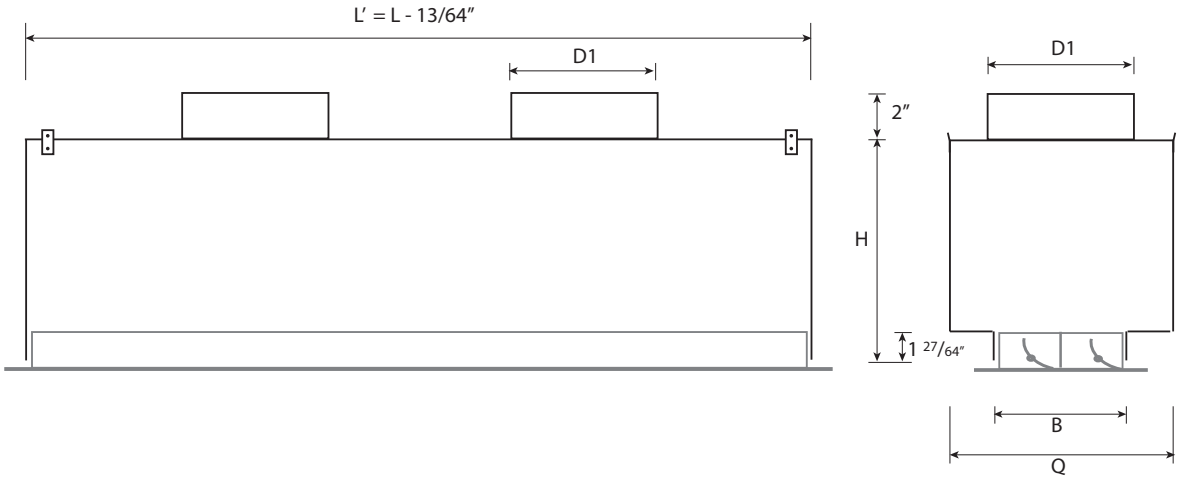
## PLSD Plenum With Side Connection





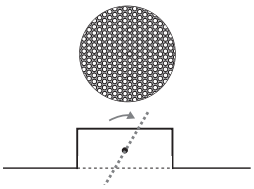

| Slots | H | B | N | D1 (L ≤ 20″) | D1 (L ≤ 40″) | D1 (L ≤ 48″) | D1 (L ≤ 60″) | D1 (L ≤ 78″) |
|---|---|---|---|---|---|---|---|---|
| 1 | 10 5/64" | 1 27/32″ | 2 23/32″ | 1x 6″D | 1x 6″D | 1x 6″D | 1x 6″D | 2x 6″D |
| 2 | 10 5/64" | 3 25/64″ | 4 1/4″ | 1x 6″D | 1x 6″D | 1x 6″D | 2x 6″D | 2x 6″D |
| 3 | 11 21/32" | 4 15/16″ | 5 25/32″ | 1x 8″D | 1x 8″D | 2x 8″D | 2x 8″D | 2x 8″D |
| 4 | 11 21/32" | 6 31/64″ | 7 21/64″ | 1x 8″D | 1x 8″D | 2x 8″D | 2x 8″D | 2x 8″D |

## PLSD-T Plenum With Top Connection



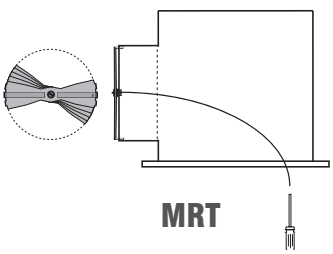

| Slots | H | B | N | D1 (L ≤ 20") | D1 (L ≤ 40") | D1 (L ≤ 48") | D1 (L ≤ 60") | D1 (L ≤ 78") |
|---|---|---|---|---|---|---|---|---|
| 1 | 8" | 1 27/32" | 6 7/8" | 1x 6"D | 1x 6"D | 1x 6"D | 1x 6"D | 2x 6"D |
| 2 | 8" | 3 25/64" | 6 7/8" | 1x 6"D | 1x 6"D | 1x 6"D | 2x 6"D | 2x 6"D |
| 3 | 10" | 4 15/16" | 8 7/8" | 1x 8"D | 1x 8"D | 2x 8"D | 2x 8"D | 2x 8"D |
| 4 | 10" | 6 31/64" | 8 7/8" | 1x 8"D | 1x 8"D | 2x 8"D | 2x 8"D | 2x 8"D |

## Integrated Air Volume Dampers



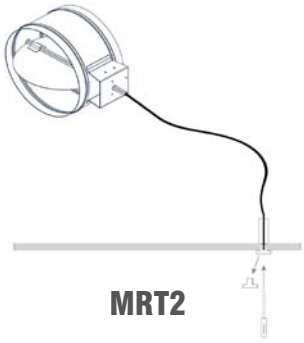
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



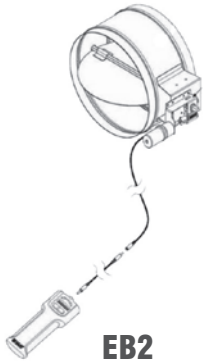
**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

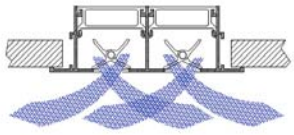
Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

# LSD Performance Data - 2 Way Alternate



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 Slot | CFM / Linear Foot | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
| | Pressure Loss (in.w.g.) | 0.004 | 0.016 | 0.036 | 0.064 | 0.098 | 0.141 | 0.192 | 0.25 |
| | NC | - | - | 17 | 26 | 34 | 40 | 45 | 49 |
| | Throw (ft) - Coanda Effect | 1-1-2 | 2-3-4 | 2-4-6 | 3-5-8 | 4-7-10 | 5-8-12 | 6-10-14 | 7-11-16 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 1-2-3 | 2-3-5 | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 |
| 2 Slots | CFM / Linear Foot | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| | Pressure Loss (in.w.g.) | 0.005 | 0.02 | 0.045 | 0.08 | 0.124 | 0.179 | 0.241 | 0.315 |
| | NC | - | - | 15 | 24 | 30 | 36 | 41 | 45 |
| | Throw (ft) - Coanda Effect | 1-1-2 | 2-3-4 | 3-4-7 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-16 | 7-12-18 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 1-2-3 | 2-3-5 | 3-4-7 | 3-6-8 | 4-7-10 | 5-8-12 | 5-9-13 |
| 3 Slots | CFM / Linear Foot | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 |
| | Pressure Loss (in.w.g.) | 0.006 | 0.024 | 0.054 | 0.095 | 0.148 | 0.212 | 0.288 | 0.375 |
| | NC | - | - | 17 | 27 | 35 | 41 | 47 | 52 |
| | Throw (ft) - Coanda Effect | 1-2-2 | 2-3-5 | 3-5-7 | 4-7-10 | 5-8-12 | 6-10-15 | 7-12-17 | 8-13-20 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 1-2-4 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-15 |
| 4 Slots | CFM / Linear Foot | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 |
| | Pressure Loss (in.w.g.) | 0.008 | 0.031 | 0.068 | 0.12 | 0.188 | 0.269 | 0.365 | 0.476 |
| | NC | - | - | 16 | 25 | 33 | 38 | 43 | 48 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-4-6 | 3-6-9 | 5-8-12 | 6-10-14 | 7-12-17 | 8-14-20 | 9-16-23 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 2-3-4 | 3-4-6 | 3-6-9 | 4-7-11 | 5-9-13 | 6-10-15 | 7-12-17 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

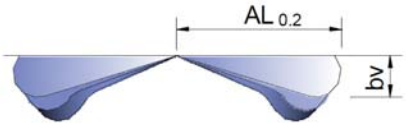
| Noise and Pressure Loss Correction Factors Based on Length and Damper Opening | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L = 20" | | | L = 40" | | | L = 48" | | | L > 60" | | |
| Damper Opening % | | 100% | 50% | 0% | 100% | 50% | 0% | 100% | 50% | 0% | 100% | 50% | 0% |
| 1 Slot | Pressure Loss | 0.95 | 2.35 | 3.15 | 1 | 1.4 | 2.2 | 1 | 1.4 | 2.2 | 1.1 | 2.5 | 3.3 |
| | NC | -6 | -3 | -3.7 | 0 | +0.8 | +0.4 | +1 | +1.7 | +1.2 | -2.1 | -0.4 | -1.9 |
| 2 Slots | Pressure Loss | 0.98 | 2.48 | 3.25 | 1 | 1.5 | 2.3 | 1 | 1.5 | 2.3 | 1.2 | 2.7 | 3.5 |
| | NC | -3.7 | -3.4 | -2.9 | 0 | +0.6 | +0.6 | +2.4 | +3.3 | +3.2 | -0.5 | +0.8 | +0.9 |
| 3 Slots | Pressure Loss | 0.96 | 2.26 | 3.36 | 1 | 1.3 | 2.4 | 1 | 1.3 | 2.4 | 1.3 | 2.4 | 3.5 |
| | NC | -6.9 | -6.3 | -5.9 | 0 | +0.9 | +0.5 | -3 | -2.9 | -3 | -1.8 | -1.5 | -1.6 |
| 4 Slots | Pressure Loss | 0.95 | 2.35 | 3.05 | 1 | 1.4 | 2.1 | 1 | 1.4 | 2.1 | 1.1 | 2.5 | 3.2 |
| | NC | -3.4 | -1.6 | -2.4 | 0 | +1.6 | +1.2 | -2 | -1.4 | -1.5 | -2 | -1.3 | -1.5 |

Multiply Pressure Loss values, add or substract NC values

| Throw Correction Factors Based on Length | | | | |
|---|---|---|---|---|
| | L = 20" | L = 40" | L = 48" | L > 60" |
| 1 Slot | 0.71 | 1 | 1.2 | 1.43 |
| 2 Slots | 0.73 | 1 | 1.27 | 1.34 |
| 3 Slots | 0.74 | 1 | 1.17 | 1.22 |
| 4 Slots | 0.75 | 1 | 1.14 | 1.19 |

Multiply throw values with correction factor

| Delta T Correction Factors | | |
|---|---|---|
| Δ T (F) | Kh | KI |
| 0 | 0.05 | 1 |
| -2 | 0.056 | 0.965 |
| -4 | 0.063 | 0.925 |
| -6 | 0.071 | 0.89 |
| -8 | 0.079 | 0.865 |
| -10 | 0.09 | 0.835 |
| -12 | 0.1 | 0.82 |
| -15 | 0.12 | 0.78 |
| -18 | 0.14 | 0.75 |




**bv= kh x Throw**

**Throw'(Δ T)= KI x Throw**

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Induction Ratio | | | | |
|---|---|---|---|---|
| Throw (ft) | 1 Slot | 2 Slots | 3 Slots | 4 Slots |
| **4** | 8 | 7 | 6 | 5 |
| **6** | 14 | 12 | 9 | 8 |
| **8** | 18 | 14 | 12 | 10 |
| **10** | 22 | 18 | 15 | 13 |
| **15** | 33 | 27 | 24 | 18 |
| **20** | 44 | 36 | 31 | 26 |
| **25** | 55 | 46 | 38 | 33 |
| **30** | 66 | 55 | 46 | 39 |

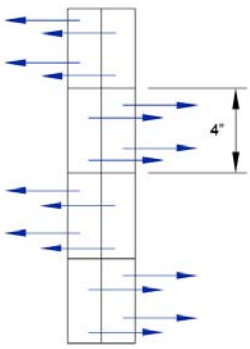
**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

| Temperature Difference Ratio | | | | |
|---|---|---|---|---|
| Throw (ft) | 1 Slot | 2 Slots | 3 Slots | 4 Slots |
| **4** | 0.082 | 0.115 | 0.14 | 0.18 |
| **6** | 0.065 | 0.088 | 0.12 | 0.135 |
| **8** | 0.057 | 0.079 | 0.097 | 0.12 |
| **10** | 0.051 | 0.07 | 0.09 | 1.05 |
| **15** | 0.043 | 0.058 | 0.75 | 0.09 |
| **20** | 0.038 | 0.05 | 0.065 | 0.078 |
| **25** | 0.034 | 0.046 | 0.057 | 0.07 |
| **30** | 0.031 | 0.043 | 0.054 | 0.065 |

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)



# LSD Performance Data - 2 Way



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 Slots | CFM / Linear Foot | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| | Pressure Loss (in.w.g.) | 0.005 | 0.02 | 0.045 | 0.08 | 0.124 | 0.179 | 0.241 | 0.315 |
| | NC | - | - | 15 | 24 | 30 | 36 | 41 | 45 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 3-4-6 | 4-6-9 | 5-8-13 | 6-11-16 | 8-13-19 | 9-15-22 | 10-17-26 |
| | Throw (ft) - No Ceiling Effect | 1-2-2 | 2-3-5 | 3-5-7 | 4-6-10 | 5-8-12 | 6-10-14 | 7-11-17 | 8-13-19 |
| 4 Slots | CFM / Linear Foot | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 |
| | Pressure Loss (in.w.g.) | 0.008 | 0.031 | 0.068 | 0.12 | 0.188 | 0.269 | 0.365 | 0.476 |
| | NC | - | - | 16 | 25 | 33 | 38 | 43 | 48 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 3-6-8 | 5-8-13 | 7-11-17 | 8-14-21 | 10-17-25 | 12-20-30 | 14-23-34 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 3-4-6 | 4-6-9 | 5-8-13 | 6-11-16 | 8-13-19 | 9-15-22 | 10-17-26 |

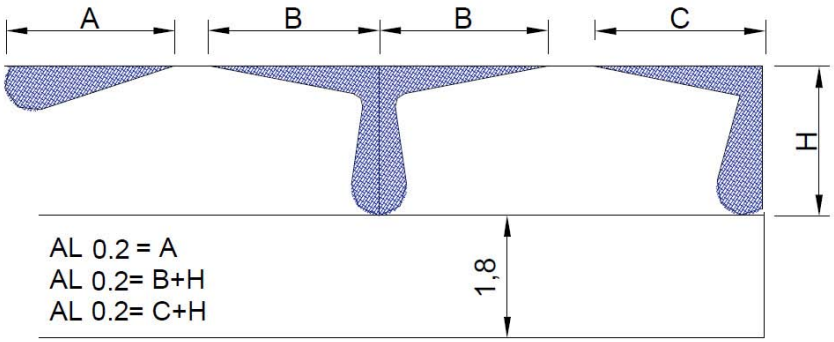
- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

| Noise and Pressure Loss Correction Factors Based on Length and Damper Opening | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L = 20" | | | L = 40" | | | L = 48" | | | L > 60" | | |
| Damper Opening % | | 100% | 50% | 0% | 100% | 50% | 0% | 100% | 50% | 0% | 100% | 50% | 0% |
| 2 Slots | Pressure Loss | 0.98 | 2.48 | 3.25 | 1 | 1.5 | 2.3 | 1 | 1.5 | 2.3 | 1.2 | 2.7 | 3.5 |
| | NC | -3.9 | -3.5 | -3 | 0 | +0.6 | +0.6 | +2.3 | +3.2 | +3.1 | -0.3 | +0.9 | +1.1 |
| 4 Slots | Pressure Loss | 0.95 | 2.35 | 3.05 | 1 | 1.4 | 2.1 | 1 | 1.4 | 2.1 | 1.1 | 2.5 | 3.2 |
| | NC | -3.6 | -1.5 | -2.5 | 0 | +1.5 | +1.1 | -1.5 | -1.3 | -1.4 | -1.8 | -1.2 | -1.3 |

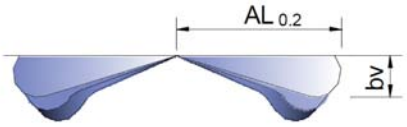
Multiply Pressure Loss values, add or substract NC values

| Throw Correction Factors Based on Length | | | | |
|---|---|---|---|---|
| | L = 20" | L = 40" | L = 48" | L > 60" |
| 2 Slots | 0.6 | 1 | 1.17 | 1.3 |
| 4 Slots | 0.767 | 1 | 1.2 | 1.17 |

Multiply throw values with correction factor



| Delta T Correction Factors | | |
|---|---|---|
| Δ T (F) | Kh | KI |
| 0 | 0.05 | 1 |
| -2 | 0.056 | 0.95 |
| -4 | 0.062 | 0.92 |
| -6 | 0.069 | 0.88 |
| -8 | 0.077 | 0.85 |
| -10 | 0.087 | 0.82 |
| -12 | 0.096 | 0.8 |
| -15 | 0.12 | 0.77 |
| -18 | 0.135 | 0.73 |




**bv= kh x Throw**

**Throw'(Δ T)= KI x Throw**

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Induction Ratio | | |
|---|---|---|
| Throw (ft) | 2 Slots | 4 Slots |
| **4** | 3 | 4 |
| **6** | 7 | 6 |
| **8** | 9 | 7 |
| **10** | 11 | 9 |
| **15** | 16 | 13 |
| **20** | 21 | 17 |
| **25** | 27 | 21 |
| **30** | 31 | 26 |

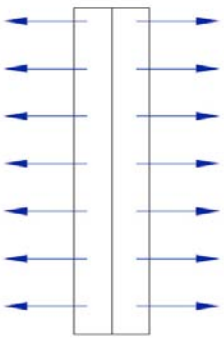
**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

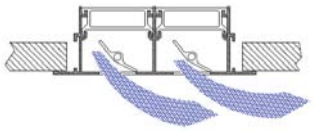
| Temperature Difference Ratio | | |
|---|---|---|
| Throw (ft) | 2 Slots | 4 Slots |
| **4** | 0.26 | 0.35 |
| **6** | 0.19 | 0.28 |
| **8** | 0.17 | 0.24 |
| **10** | 0.15 | 0.22 |
| **15** | 0.125 | 0.175 |
| **20** | 0.105 | 0.145 |
| **25** | 0.093 | 0.135 |
| **30** | 0.085 | 0.125 |

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)



# LSD Performance Data - 1 Way



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 Slot | CFM / Linear Foot | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
| | Pressure Loss (in.w.g.) | 0.004 | 0.016 | 0.036 | 0.064 | 0.098 | 0.141 | 0.192 | 0.25 |
| | NC | - | - | 17 | 26 | 34 | 40 | 45 | 49 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 3-5-8 | 5-8-12 | 7-11-17 | 8-14-21 | 10-17-25 | 12-19-29 | 13-22-33 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-4-6 | 4-6-9 | 5-8-12 | 6-10-15 | 7-12-19 | 9-15-22 | 10-17-25 |
| 2 Slots | CFM / Linear Foot | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| | Pressure Loss (in.w.g.) | 0.005 | 0.02 | 0.045 | 0.08 | 0.124 | 0.179 | 0.241 | 0.315 |
| | NC | - | - | 15 | 24 | 31 | 37 | 41 | 45 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 4-6-9 | 5-9-14 | 7-12-18 | 9-15-23 | 11-18-28 | 13-22-32 | 15-25-37 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 3-5-7 | 4-7-10 | 5-9-14 | 7-11-17 | 8-14-21 | 10-16-24 | 11-19-28 |
| 3 Slots | CFM / Linear Foot | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 |
| | Pressure Loss (in.w.g.) | 0.006 | 0.024 | 0.054 | 0.095 | 0.148 | 0.212 | 0.288 | 0.375 |
| | NC | - | - | 17 | 27 | 35 | 41 | 47 | 52 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 4-7-10 | 6-10-16 | 8-14-21 | 10-18-26 | 13-21-32 | 15-25-37 | 17-28-42 |
| | Throw (ft) - No Ceiling Effect | 2-3-4 | 3-5-8 | 5-8-12 | 6-10-16 | 8-13-20 | 10-16-24 | 11-19-28 | 13-21-32 |
| 4 Slots | CFM / Linear Foot | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 |
| | Pressure Loss (in.w.g.) | 0.008 | 0.031 | 0.068 | 0.12 | 0.188 | 0.269 | 0.365 | 0.476 |
| | NC | - | - | 17 | 26 | 33 | 39 | 44 | 48 |
| | Throw (ft) - Coanda Effect | 2-4-6 | 5-8-11 | 7-12-17 | 9-16-23 | 12-19-29 | 14-23-35 | 16-27-41 | 19-31-47 |
| | Throw (ft) - No Ceiling Effect | 2-3-4 | 3-6-9 | 5-9-13 | 7-12-17 | 9-15-22 | 11-18-26 | 12-21-31 | 14-24-35 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

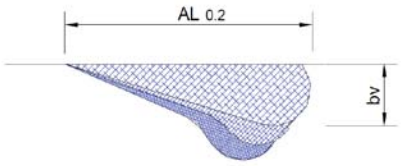
| Noise and Pressure Loss Correction Factors Based on Length and Damper Opening | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L = 20” | | | L = 40” | | | L = 48” | | | L > 60” | | |
| Damper Opening % | | 100% | 50% | 0% | 100% | 50% | 0% | 100% | 50% | 0% | 100% | 50% | 0% |
| 1 Slot | Pressure Loss | 0.95 | 2.35 | 3.15 | 1 | 1.4 | 2.2 | 1 | 1.4 | 2.2 | 1.1 | 2.5 | 3.3 |
| | NC | -6 | -3 | -3.6 | 0 | +0.8 | +0.4 | +1.2 | +1.9 | +1.4 | -2 | 0 | -1.6 |
| 2 Slots | Pressure Loss | 0.98 | 2.48 | 3.25 | 1 | 1.5 | 2.3 | 1 | 1.5 | 2.3 | 1.2 | 2.7 | 3.5 |
| | NC | -4 | -3.6 | -3.1 | 0 | +0.6 | +0.6 | +2.3 | +3.2 | +3.1 | 0 | +1 | +1.2 |
| 3 Slots | Pressure Loss | 0.96 | 2.26 | 3.36 | 1 | 1.3 | 2.4 | 1 | 1.3 | 2.4 | 1.3 | 2.4 | 3.5 |
| | NC | -7 | -6 | -6 | 0 | +0.9 | +0.5 | -2.7 | -2.6 | -2.7 | -1.4 | -1.1 | -1.1 |
| 4 Slots | Pressure Loss | 0.95 | 2.35 | 3.05 | 1 | 1.4 | 2.1 | 1 | 1.4 | 2.1 | 1.1 | 2.5 | 3.2 |
| | NC | -3.4 | -1.4 | -2.5 | 0 | +1.5 | +1.2 | -1.8 | -1.1 | -1.2 | -1.7 | -1 | -1.1 |

Multiply Pressure Loss values, add or substract NC values

| Throw Correction Factors Based on Length | | | | |
|---|---|---|---|---|
| | L = 20” | L = 40” | L = 48” | L > 60” |
| 1 Slot | 0.71 | 1 | 1.07 | 1.14 |
| 2 Slots | 0.73 | 1 | 1.09 | 1.15 |
| 3 Slots | 0.74 | 1 | 1.11 | 1.2 |
| 4 Slots | 0.75 | 1 | 1.25 | 1.25 |

Multiply throw values with correction factor

| Delta T Correction Factors | | |
|---|---|---|
| Δ T (F) | Kh | KI |
| 0 | 0.05 | 1 |
| -2 | 0.056 | 0.96 |
| -4 | 0.063 | 0.925 |
| -6 | 0.071 | 0.89 |
| -8 | 0.079 | 0.865 |
| -10 | 0.09 | 0.83 |
| -12 | 0.1 | 0.82 |
| -15 | 0.12 | 0.78 |
| -18 | 0.14 | 0.75 |




**bv= kh x Throw**

**Throw'(Δ T)= KI x Throw**

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Induction Ratio | | | | |
|---|---|---|---|---|
| Throw (ft) | 1 Slot | 2 Slots | 3 Slots | 4 Slots |
| **4** | 5 | 3 | 5 | 2 |
| **6** | 8 | 7 | 6 | 3 |
| **8** | 10 | 8 | 7 | 6 |
| **10** | 12 | 10 | 9 | 7 |
| **15** | 17 | 14 | 12 | 10 |
| **20** | 21 | 18 | 15 | 13 |
| **25** | 25 | 22 | 19 | 15 |
| **30** | 30 | 27 | 23 | 18 |

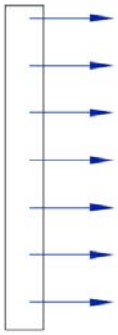
**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

| Temperature Difference Ratio | | | | |
|---|---|---|---|---|
| Throw (ft) | 1 Slot | 2 Slots | 3 Slots | 4 Slots |
| **4** | 0.18 | 0.26 | 0.32 | 0.37 |
| **6** | 0.145 | 0.19 | 0.25 | 0.28 |
| **8** | 0.125 | 0.17 | 0.22 | 0.24 |
| **10** | 0.115 | 0.15 | 0.19 | 0.22 |
| **15** | 0.09 | 0.125 | 0.155 | 0.175 |
| **20** | 0.078 | 0.105 | 0.14 | 0.145 |
| **25** | 0.069 | 0.094 | 0.125 | 0.135 |
| **30** | 0.062 | 0.085 | 0.11 | 0.125 |

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)



# LSD Performance Data - Vertical



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 Slot | CFM / Linear Foot | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
| | Pressure Loss (in.w.g.) | 0.004 | 0.016 | 0.036 | 0.064 | 0.098 | 0.141 | 0.192 | 0.25 |
| | NC | - | - | 17 | 26 | 34 | 40 | 45 | 49 |
| | Throw (ft) - Coanda Effect | 1-2-2 | 2-3-5 | 3-5-7 | 4-6-10 | 5-8-12 | 6-10-14 | 7-11-17 | 8-13-19 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 1-2-4 | 2-4-5 | 3-5-7 | 4-6-9 | 4-7-11 | 5-8-13 | 6-10-15 |
| 2 Slots | CFM / Linear Foot | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| | Pressure Loss (in.w.g.) | 0.005 | 0.02 | 0.045 | 0.08 | 0.124 | 0.179 | 0.241 | 0.315 |
| | NC | - | - | 15 | 24 | 31 | 37 | 41 | 45 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-4-5 | 3-5-8 | 4-7-11 | 5-9-13 | 6-11-16 | 8-13-19 | 9-14-22 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 2-3-4 | 2-4-6 | 3-5-8 | 4-7-10 | 5-8-12 | 6-9-14 | 6-11-16 |
| 3 Slots | CFM / Linear Foot | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 |
| | Pressure Loss (in.w.g.) | 0.006 | 0.024 | 0.054 | 0.095 | 0.148 | 0.212 | 0.288 | 0.375 |
| | NC | - | - | 17 | 27 | 35 | 41 | 47 | 52 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-4-6 | 4-6-9 | 5-8-12 | 6-10-15 | 7-12-18 | 8-14-21 | 10-16-24 |
| | Throw (ft) - No Ceiling Effect | 1-1-2 | 2-3-4 | 3-4-7 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-16 | 7-12-18 |
| 4 Slots | CFM / Linear Foot | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 |
| | Pressure Loss (in.w.g.) | 0.008 | 0.031 | 0.068 | 0.12 | 0.188 | 0.269 | 0.365 | 0.476 |
| | NC | - | - | 17 | 26 | 33 | 39 | 44 | 48 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 3-5-7 | 4-7-11 | 6-9-14 | 7-12-18 | 9-14-21 | 10-17-25 | 11-19-29 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-4-5 | 3-5-8 | 4-7-11 | 5-9-13 | 6-11-16 | 8-13-19 | 9-14-22 |

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

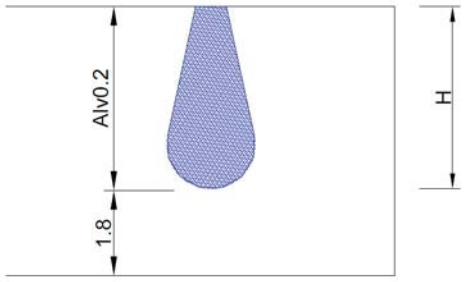
| Noise and Pressure Loss Correction Factors Based on Length and Damper Opening | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L = 20” | | | L = 40” | | | L = 48” | | | L > 60” | | |
| Damper Opening % | | 100% | 50% | 0% | 100% | 50% | 0% | 100% | 50% | 0% | 100% | 50% | 0% |
| 1 Slot | Pressure Loss | 0.95 | 2.35 | 3.15 | 1 | 1.4 | 2.2 | 1 | 1.4 | 2.2 | 1.1 | 2.5 | 3.3 |
| | NC | -6.1 | -3.1 | -3.6 | 0 | +0.8 | +0.4 | +0.9 | +1.6 | +1.1 | -2.1 | -0.5 | -1.9 |
| 2 Slots | Pressure Loss | 0.98 | 2.48 | 3.25 | 1 | 1.5 | 2.3 | 1 | 1.5 | 2.3 | 1.2 | 2.7 | 3.5 |
| | NC | -3.8 | -3.4 | -2.9 | 0 | +0.6 | +0.6 | +2.4 | +3.3 | +3.2 | -0.3 | +0.9 | +1.1 |
| 3 Slots | Pressure Loss | 0.96 | 2.26 | 3.36 | 1 | 1.3 | 2.4 | 1 | 1.3 | 2.4 | 1.3 | 2.4 | 3.5 |
| | NC | -7 | -6.3 | -6 | 0 | +0.9 | +0.5 | -2.8 | -2.8 | -2.9 | -1.5 | -1.2 | -1.3 |
| 4 Slots | Pressure Loss | 0.95 | 2.35 | 3.05 | 1 | 1.4 | 2.1 | 1 | 1.4 | 2.1 | 1.1 | 2.5 | 3.2 |
| | NC | -3.4 | -1.5 | -2.5 | 0 | +1.6 | +1.2 | -1.9 | -1.3 | -1.4 | -1.9 | -1.2 | -1.3 |

Multiply Pressure Loss values, add or substract NC values

| Throw Correction Factors Based on Length | | | | |
|---|---|---|---|---|
| | L = 20” | L = 40” | L = 48” | L > 60” |
| 1 Slot | 0.7 | 1 | 1.1 | 1.2 |
| 2 Slots | 0.72 | 1 | 1.15 | 1.25 |
| 3 Slots | 0.72 | 1 | 1.12 | 1.2 |
| 4 Slots | 0.74 | 1 | 1.25 | 1.25 |

Multiply throw values with correction factor

| Delta T Correction Factor | | | | |
|---|---|---|---|---|
| **Δ T (F)** | **Kl 1 Slot** | **Kl 2 Slots** | **Kl 3 Slots** | **Kl 4 Slots** |
| **0** | 1 | 1 | 1 | 1 |
| **+9** | 0.75 | 0.76 | 0.77 | 0.8 |
| **+18** | 0.64 | 0.65 | 0.66 | 0.64 |

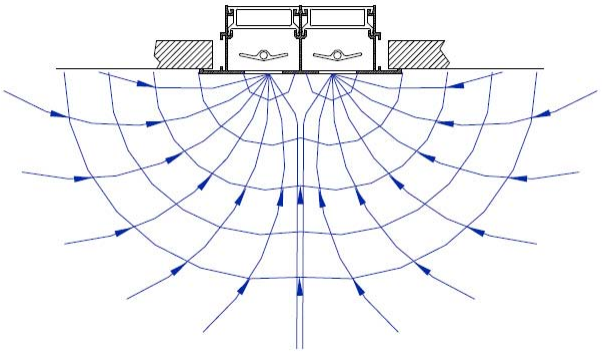



**Throw'(Δ T)= Kl x Throw**

Kl = Correction Factor for Vertical Diffusion
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm



# LSD Performance Data - Return Air



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 Slot | CFM / Linear Foot | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
| | Pressure Loss (in.w.g.) | 0.02 | 0.048 | 0.072 | 0.12 | 0.177 | 0.221 | 0.301 |
| | NC | - | 22 | 28 | 38 | > 40 | > 40 | > 40 |
| 2 Slots | CFM / Linear Foot | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| | Pressure Loss (in.w.g.) | 0.028 | 0.052 | 0.1 | 0.157 | 0.229 | 0.301 | 0.402 |
| | NC | - | 20 | 32 | 39 | > 40 | > 40 | > 40 |
| 3 Slots | CFM / Linear Foot | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| | Pressure Loss (in.w.g.) | 0.012 | 0.032 | 0.06 | 0.088 | 0.129 | 0.185 | 0.241 |
| | NC | - | - | 19 | 26 | 33 | 39 | > 40 |
| 4 Slots | CFM / Linear Foot | 30 | 45 | 60 | 75 | 90 | 105 | 120 |
| | Pressure Loss (in.w.g.) | 0.028 | 0.056 | 0.096 | 0.137 | 0.209 | 0.281 | 0.402 |
| | NC | - | 16 | 24 | 32 | 38 | > 40 | > 40 |

NC value based on 10 db room attenuation

| Noise and Pressure Loss Correction Factors Based on Length and Damper Opening | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L = 20” | | | L = 40” | | | L = 48” | | | L > 60” | | |
| **Damper Opening %** | | **100%** | **50%** | **0%** | **100%** | **50%** | **0%** | **100%** | **50%** | **0%** | **100%** | **50%** | **0%** |
| **1 Slot** | **Pressure Loss** | 0.88 | 2.28 | 3 | 1 | 1.4 | 2.2 | 1.3 | 2.7 | 3.5 | 1.5 | 2.9 | 3.7 |
| | **NC** | 0 | 3 | 5 | 0 | 4 | 7 | 0 | 3 | 5 | 0 | 3 | 7 |
| **2 Slots** | **Pressure Loss** | 0.85 | 2.35 | 3.15 | 1 | 1.5 | 2.3 | 1.4 | 2.9 | 3.7 | 1.66 | 3.16 | 3.96 |
| | **NC** | 0 | 3 | 5 | 0 | 4 | 7 | 0 | 4 | 7 | 0 | 3 | 8 |
| **3 Slots** | **Pressure Loss** | 0.8 | 2.1 | 3.2 | 1 | 1.3 | 2.4 | 1.2 | 2.5 | 3.6 | 1.4 | 2.7 | 3.8 |
| | **NC** | 0 | 4 | 5 | 0 | 5 | 8 | 0 | 5 | 8 | 0 | 4 | 8 |
| **4 Slots** | **Pressure Loss** | 0.7 | 2.1 | 2.8 | 1 | 1.4 | 2.1 | 1.3 | 2.7 | 3.4 | 1.5 | 2.9 | 3.6 |
| | **NC** | 0 | 4 | 5 | 0 | 4 | 8 | 0 | 5 | 8 | 0 | 4 | 8 |

Multiply Pressure Loss values, add or substract NC values

## How to Specify LSD

Supply and mounting of High Induction Linear Slot Diffuser with 4" long adjustable curved blades model LSD. Constructed from extruded aluminum with PVC blades, powder coated in white M9016. Shall be supplied in 2 Way Alternate airflow pattern standard configuration for higher induction rate. Shall be supplied and installed with PLSD high performance plenum box featuring PL attachment system for easy and secure installation. By EffectiV HVAC / MADEL.

## How to Order LSD Series

| LSD | -AR | -PL | -AB | 2 | 48 | /M9016 | + PLSD | -AL | -R | -EQ | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | End Borders | Mounting System | Sectored Vanes Color | Number of Slots | Length | Finish | Plenum | Insulation | Damper | | | |
| | | | | | | | | | | | EQ | Air Equalizing Grid |
| | | | | | | | | | | | R | Perforated Damper + Air Equalizer |
| | | | | | | | | | | | MRT | Manual Cable Thru Face |
| | | | | | | | | | | | MRT2 | Manual Cable Thru Drywall |
| | | | | | | | | | | | EB | Remote Controled, Thru Face |
| | | | | | | | | | | | EB2 | Remote Controled, Thru Drywall |
| | | | | | | | | | | | AL | 1/2" Accoustical Liner |
| | | | | | | | | | | | R6 | 2" R6 Thermal Insulation |
| | | | | | | | | | | | PLSD | PLSD Plenum, Side Connection |
| | | | | | | | | | | | PLSD-T | PLSD Plenum, Top Connection |
| | | | | | | | | | | | /M9016 | Powder Coated White RAL9016 |
| | | | | | | | | | | | /AA | Anodized in Matt Silver, Black Vanes |
| | | | | | | | | | | | /RAL | Other RAL: please specify |
| | | | | | | | | | | | 48 | Lenght in inches, Max 78" |
| | | | | | | | | | | | 1 | 1 Slot |
| | | | | | | | | | | | 2 | 2 Slots |
| | | | | | | | | | | | 3 | 3 Slots |
| | | | | | | | | | | | 4 | 4 Slots |
| | | | | | | | | | | | AB | White Sectored Vanes |
| | | | | | | | | | | | AN | Black Sectored Vanes |
| | | | | | | | | | | | PL | Concealed Spring Clips (req. PLSD) |
| | | | | | | | | | | | PM | Concealed U Clip and Long Screws |
| | | | | | | | | | | | T | Visible Screws |
| | | | | | | | | | | | AR | Two End Borders |
| | | | | | | | | | | | ARI | Left End Border Only |
| | | | | | | | | | | | ARD | Right End Border Only |
| | | | | | | | | | | | INT | Interior (No End Borders) |



# NEX

## Concave Elements Architectural Swirl Diffusers

COMFORT THROUGH **RELIABILITY**

EFFECTIV™

Feb 6 2022

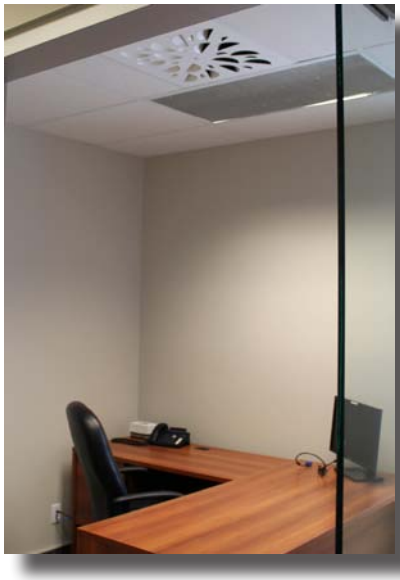
# NEX SERIES
## Architectural Swirl Diffusers



**NEX-S & NEX-C**
**by MADEL®**

**PATENTED**

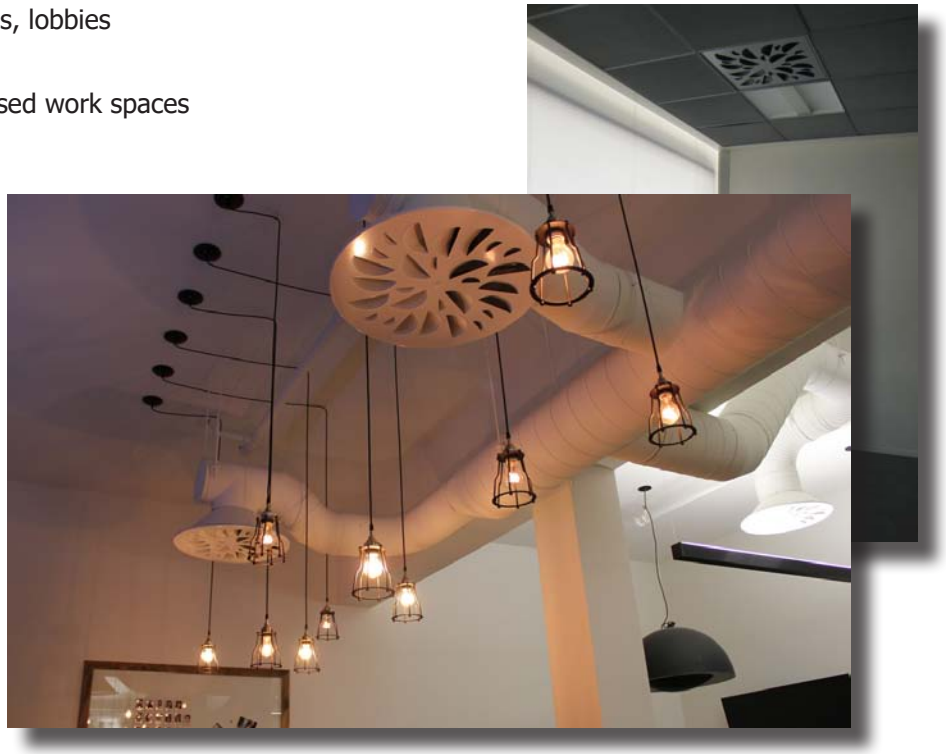
- Fixed and reliable high induction swirl pattern
- Architecturally appealing - choice of concave elements color
- Multiple jets of various size to better handle velocity variations
- High tolerance to air entering the diffuser at an angle
- High air flow at relatively low sound power
- High tolerance to temperature and humidity variations
- High induction causes rapid reduction of air velocity and temperature difference
- Square and round shapes available
- Lay-in, duct mounted or drywall mounted, suitable for all ceilings
- Heavy-gauge steel or aluminmum face construction with ABS elements
- Matching high-performance PERFAIR plenums, choice of top or side connection
- PERFAIR have built-in anti-seismic attachment tabs and air equalizer/volume damper





## Some Applications

- Ideal when combination of comfort, high cfm, low noise and appealing look is required
- Ideal when reliable performance is required despite variable or uncertain conditions
- Restaurants, bars, hotels, stores, lobbies
- Offices, including ones with closed work spaces
- Art galleries
- Childcare
- Schools and classrooms
- Meeting rooms
- Clean rooms
- Multi-purpose rooms



NEX Architectural Swirl Diffusers by EffectiV HVAC™ and MADEL® are designed to be applied in air conditioning, ventilation and heating systems. The design of unique concave elements of diffusion in radial arrangement supplies the air in a swirl pattern while leveraging the coanda effect. The resulting airflow is more evenly spread and its high induction ratio helps reduce stratification.

NEX Concave Elements, combined with a PERFAIR high-performance plenum mixing box, emit a uniform airflow throughout the passage section despite variations in supplied air temperature and velocity, as well as non-ideal duct installation.

The NEX series diffusers admit a flow variation of 60% while keeping the air stream stable. For optimal conditions, NEX diffusers may be used in ceilings 8.5 up to 13 feet (2.6 up to 4 meters) high, with a temperature differential up to 22ºF (12ºC).

The air pattern reliability, high level of induction rate and reduced air stratification allow for designs with a much higher level of comfort and provide opportunities for significant energy savings.

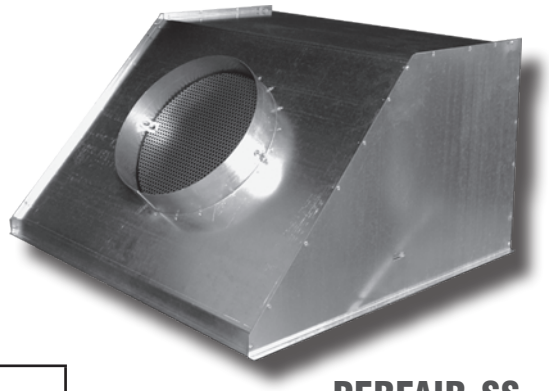
The face and plenum box are ordered separately and attached together with a screw through the face which is fixed in the plenum crossbar.

NEX Concave Elements are made of ABS tested in accordance to UL 94 HB *Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances - Horizontal Burning Test*

## Plenum Selection

NEX swirl diffusers are available with a wide selection of PERFAIR plenums to suit any type of application. PERFAIR-SS with side connection is the most popular plenum for Square Diffusers and only requires 14” of ceiling space.

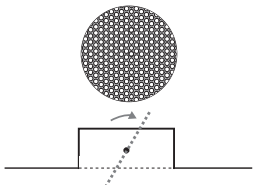
All PERFAIR plenums come with antiseismic tabs and perforated air volume damper / air equalizer.



**PERFAIR-SS**

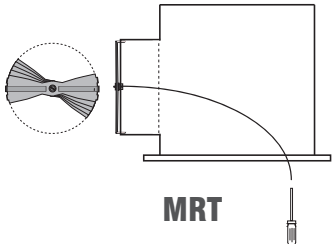
| Plenum Model | Face Type | Connection | Recommended For |
|---|---|---|---|
| PERFAIR-CS | Round | Side | False or closed ceiling |
| PERFAIR-CT | Round | Top | Open ceiling with visible duct coming from top |
| PERFAIR-SS | Square | Side, Angle | False or closed ceiling |
| PERFAIR-SSS | Square | Side | Open ceiling with visible duct coming from side |
| PERFAIR-ST | Square | Top | Open ceiling with visible duct coming from top |
| PERFAIR-XS | Square | Side, Oval | Very limited ceiling space (6” min) |
| PERFAIR-XSS | Square | Side, Rect. | Very limited ceiling space (5” min) |

## Integrated Air Volume Dampers



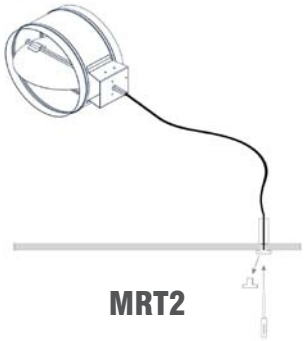
**R**

Perforated damper + air equalizer (Standard)



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



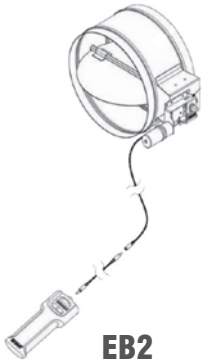
**MRT2**

Manually operated damper, cable through wall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

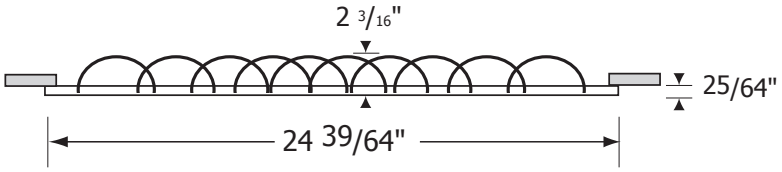
Battery operated electro-balance damper with remote control, cable through wall with termination fixture

# NEX-C Round Architectural Swirl Diffuser

| Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 16'' (400mm) | 0.22 | 45 | 285 |
| 25'' (625mm) | 0.47 | 200 | 500 |



NEX-C




# NEX-C 16 + PERFAIR-CS or PERFAIR-CT Performance Data

16" Diameter Face (Imperial) 400 mm Diameter Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | 0.062 |
| 6 | CFM | | 59 | 79 | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | 0.01 | 0.02 | 0.02 | 0.03 | 0.05 | 0.1 | 0.1 |
| | NC | | <15 | <15 | 17 | 22 | 26 | 29 | 35 |
| | Throw (ft) - Coanda Effect | | 1-2-3 | 2-3-4 | 2-4-6 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 |
| | Throw (ft) - No Ceiling Effect | | 1-2-3 | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 2-4-6 | 3-6-8 |
| 8 | CFM | 70 | 105 | 140 | 175 | 209 | 244 | 279 | |
| | Pressure Loss (in.w.g.) | 0.01 | 0.03 | 0.05 | 0.1 | 0.1 | 0.1 | 0.2 | |
| | NC | <15 | 19 | 26 | 32 | 37 | 41 | 44 | |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-4-6 | 3-5-8 | 4-7-10 | 5-8-12 | 6-9-14 | 6-10-16 | |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-4 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-8-12 | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

# NEX-C 25 + PERFAIR-CS or PERFAIR-CT Performance Data

24 5/8" Diameter Face (Imperial) 625mm Diameter Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 | 0.09 | 0.122 | 0.16 |
| 6 | CFM | 79 | 98 | 118 | 137 | 157 | 196 | 236 | 275 | 314 |
| | Pressure Loss (in.w.g.) | | - | - | - | - | 0.01 | 0.01 | 0.01 | 0.01 |
| | NC | | < 15 | < 15 | < 15 | < 15 | < 15 | 17 | 20 | 22 |
| | Throw (ft) - Coanda Effect | | 1-2-4 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-8-12 |
| | Throw (ft) - No Ceiling Effect | | 1-2-3 | 1-2-3 | 2-3-4 | 2-3-4 | 2-4-6 | 3-4-7 | 3-5-8 | 4-6-9 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 | 559 |
| | Pressure Loss (in.w.g.) | - | - | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.04 |
| | NC | < 15 | < 15 | < 15 | 17 | 20 | 24 | 28 | 31 | 34 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-16 | 7-12-18 | 8-14-21 |
| | Throw (ft) - No Ceiling Effect | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-7-10 | 4-8-12 | 6-9-14 | 6-10-16 |
| 10 | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | | |
| | Pressure Loss (in.w.g.) | 0.01 | 0.01 | 0.014 | 0.018 | 0.024 | 0.036 | 0.052 | | |
| | NC | 15 | 20 | 23 | 26 | 29 | 33 | 37 | | |
| | Throw (ft) - Coanda Effect | 3-5-8 | 4-7-10 | 5-8-12 | 6-10-14 | 7-11-16 | 8-14-21 | 10-16-25 | | |
| | Throw (ft) - No Ceiling Effect | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-10-15 | 7-12-19 | | |
| 12 | CFM | 314 | 393 | 471 | 550 | 628 | | | | |
| | Pressure Loss (in.w.g.) | 0.01 | 0.017 | 0.03 | 0.04 | 0.05 | | | | |
| | NC | 22 | 27 | 30 | 33 | 36 | | | | |
| | Throw (ft) - Coanda Effect | 5-8-12 | 6-10-15 | 7-12-18 | 8-14-21 | 9-15-23 | | | | |
| | Throw (ft) - No Ceiling Effect | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-16 | 7-11-17 | | | | |

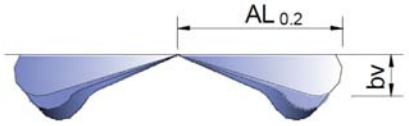
**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 16''D (400mm) | Pressure Loss | x1 | x1.2 | x2.4 |
| | NC | +1.6 | +1.9 | +1.1 |
| 25''D (625mm) | Pressure Loss | x1 | x1.5 | x4.8 |
| | NC | +2 | +2.75 | +1.5 |

# NEX-C + PERFAIR-CS or PERFAIR-CT Performance Data (continued)

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | **Kh** | **KI** |
| **0** | .037 | 1 |
| **-2** | .041 | .945 |
| **-4** | .046 | .905 |
| **-6** | .052 | .87 |
| **-8** | .056 | .835 |
| **-10** | .065 | .82 |
| **-12** | .071 | .79 |
| **-15** | .084 | .78 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios (16") | | | Ratios (25") | |
|---|---|---|---|---|
| **Throw (ft)** | **i** | **Delta T Ratio** | **i** | **Delta T Ratio** |
| **4** | 8 | 0.052 | 5 | 0.12 |
| **6** | 14 | 0.032 | 9 | 0.068 |
| **8** | 18 | 0.026 | 13 | 0.051 |
| **10** | 24 | 0.02 | 16 | 0.04 |
| **15** | 38 | 0.01 | 26 | 0.027 |
| **20** | 38 | - | 38 | 0.02 |
| **25** | 71 | - | 47 | 0.016 |
| **30** | - | - | 60 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

## How to Specify NEX-C

Supply and mounting of round high induction swirl diffuser with radial concave elements NEX-C, dimension 25 inches or 625 mm. Constructed from galvanized steel face panel powder coated in white M9016, with ABS elements. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

## How to Specify NEX-ALU-C

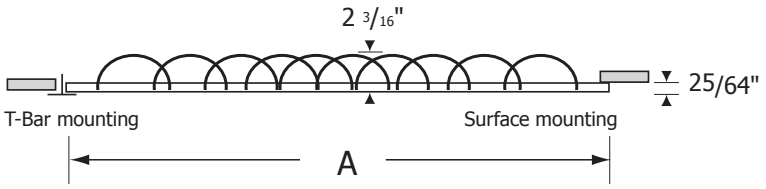
Supply and mounting of round high induction swirl diffuser with radial concave elements NEX-C, dimension 25 inches or 625 mm. Constructed from heavy gauge aluminum face panel powder coated in white M9016, with ABS elements. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

# NEX-S Square Diffuser, Radial Vanes

| Dim A | Free Area (sqf) | CFM Min | CFM Max |
|---|---|---|---|
| 12”x12’’ (299mm) | 0.22 | 100 | 250 |
| 24”x24’’ (605mm) | 0.47 | 200 | 500 |



NEX-S




## NEX-S + PERFAIR or BOXSTAR Performance Data

12” x 12” Face (Imperial) 299mm x 299mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 | 0.09 | 0.122 | 0.16 |
| 5 | CFM | 55 | 68 | 82 | 95 | 109 | 136 | 164 | 191 | 218 |
| | Pressure Loss (in.w.g.) | 0.008 | 0.012 | 0.017 | 0.023 | 0.03 | 0.046 | 0.065 | 0.087 | 0.113 |
| | NC | < 15 | < 15 | < 15 | < 15 | < 15 | 15 | 20 | 23 | 26 |
| | Throw (ft) - coanda | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-5 | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 |
| 6 | CFM | 79 | 98 | 118 | 137 | 157 | 196 | 236 | 275 | 314 |
| | Pressure Loss (in.w.g.) | 0.02 | 0.015 | 0.03 | 0.05 | 0.06 | 0.09 | 0.13 | 0.17 | 0.21 |
| | NC | < 15 | < 15 | < 15 | 15 | 20 | 25 | 30 | 33 | 41 |
| | Throw (ft) - coanda | 2-3-4 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-15 | 7-11-17 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | | | |
| | Pressure Loss (in.w.g.) | 0.05 | 0.07 | 0.1 | 0.14 | 0.18 | 0.24 | | | |
| | NC | 17 | 22 | 27 | 31 | 34 | 42 | | | |
| | Throw (ft) - coanda | 3-5-8 | 4-6-10 | 5-8-12 | 5-9-14 | 6-10-16 | 8-12-19 | | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.
- No ceiling effect: multiply values by 0.7

# NEX-S + PERFAIR or BOXSTAR Performance Data (continued)

24" x 24" Face (Imperial) 605mm x 605mm Face (Metric)

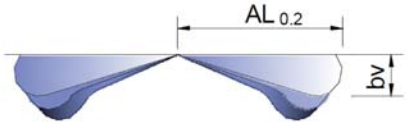
| Neck Size (inches) | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 | 0.09 | 0.122 | 0.16 |
| 6 | CFM | | 98 | 118 | 137 | 157 | 196 | 236 | 275 | 314 |
| | Pressure Loss (in.w.g.) | | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.06 | 0.07 |
| | NC | | < 15 | < 15 | < 15 | < 15 | 15 | 19 | 22 | 25 |
| | Throw (ft) - coanda | | 1-2-4 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-8-12 |
| 8 | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 | 559 |
| | Pressure Loss (in.w.g.) | 0.02 | 0.02 | 0.03 | 0.04 | 0.06 | 0.09 | 0.12 | 0.17 | 0.21 |
| | NC | < 15 | < 15 | 16 | 19 | 22 | 27 | 31 | 35 | 38 |
| | Throw (ft) - coanda | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-16 | 7-12-18 | 8-14-21 |
| 10 | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 | |
| | Pressure Loss (in.w.g.) | 0.036 | 0.055 | 0.077 | 0.104 | 0.133 | 0.205 | 0.29 | 0.389 | |
| | NC | 17 | 22 | 26 | 29 | 32 | 37 | 40 | 44 | |
| | Throw (ft) - coanda | 3-5-8 | 4-7-10 | 5-8-12 | 6-10-14 | 7-11-16 | 8-14-21 | 10-16-25 | 12-19-29 | |
| 12 | CFM | 314 | 393 | 471 | 550 | 628 | | | | |
| | Pressure Loss (in.w.g.) | 0.07 | 0.11 | 0.15 | 0.21 | 0.27 | | | | |
| | NC | 25 | 30 | 34 | 37 | 40 | | | | |
| | Throw (ft) - coanda | 5-8-12 | 6-10-15 | 7-12-18 | 8-14-21 | 9-15-23 | | | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.
- No ceiling effect: multiply values by 0.7

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 12"x12'' (299mm) | Pressure Loss | x1 | x1.2 | x2.4 |
| | NC | +1.6 | +1.9 | +1.1 |
| 24"x24'' (605mm) | Pressure Loss | x1 | x1.4 | x4 |
| | NC | +2 | +2.74 | +1.5 |

| **Delta T Correction Factors** | | | | |
|---|---|---|---|---|
| | **12"x 12" (299mm)** | | **24"x 24" (605mm)** | |
| **Δ T (F)** | **Kh** | **KI** | **Kh** | **KI** |
| **0** | .037 | 1 | .037 | 1 |
| **-2** | .041 | .945 | .041 | .945 |
| **-4** | .046 | .905 | .046 | .905 |
| **-6** | .052 | .87 | .052 | .87 |
| **-8** | .056 | .835 | .056 | .82 |
| **-10** | .065 | .82 | .065 | .82 |
| **-12** | .071 | .79 | .071 | .79 |
| **-15** | .084 | .78 | .084 | .78 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

# NEX-S + PERFAIR or BOXSTAR Performance Data (continued)

| Ratios | | | | | |
|---|---|---|---|---|---|
| Distance (ft) | i (12") | i (24") | Delta T Ratio (12") | Delta T Ratio (24") | **induced room air = supplied cfm * i**<br><br>induced room air = cfm mixed for given throw |
| **4** | 7 | 5 | 0.053 | 0.12 | |
| **6** | 14 | 9 | 0.033 | 0.068 | |
| **8** | 18 | 13 | 0.025 | 0.051 | **Delta T (Throw) = Delta T (Supply) * Delta T Ratio**<br><br>Delta T (Supply) = T (Room) - T (Supply)<br>Delta T (Throw) = T (Room) - T (Throw) |
| **10** | 22 | 16 | 0.019 | 0.04 | |
| **15** | 39 | 26 | - | 0.027 | |
| **20** | 55 | 38 | - | 0.02 | |
| **25** | 72 | 47 | - | 0.016 | |
| **30** | 90 | 60 | - | - | |

## How to Specify NEX-S

Supply and mounting of square high induction swirl diffuser with concave elements model NEX-S. Constructed from galvanized steel face panel powder coated in white M9016, with ABS concave elements. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

## How to Specify NEX-ALU-S

Supply and mounting of square high induction swirl diffuser with concave elements model NEX-S. Constructed from heavy gauge aluminum face panel powder coated in white M9016, with ABS concave elements. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.



## How to Order NEX Series

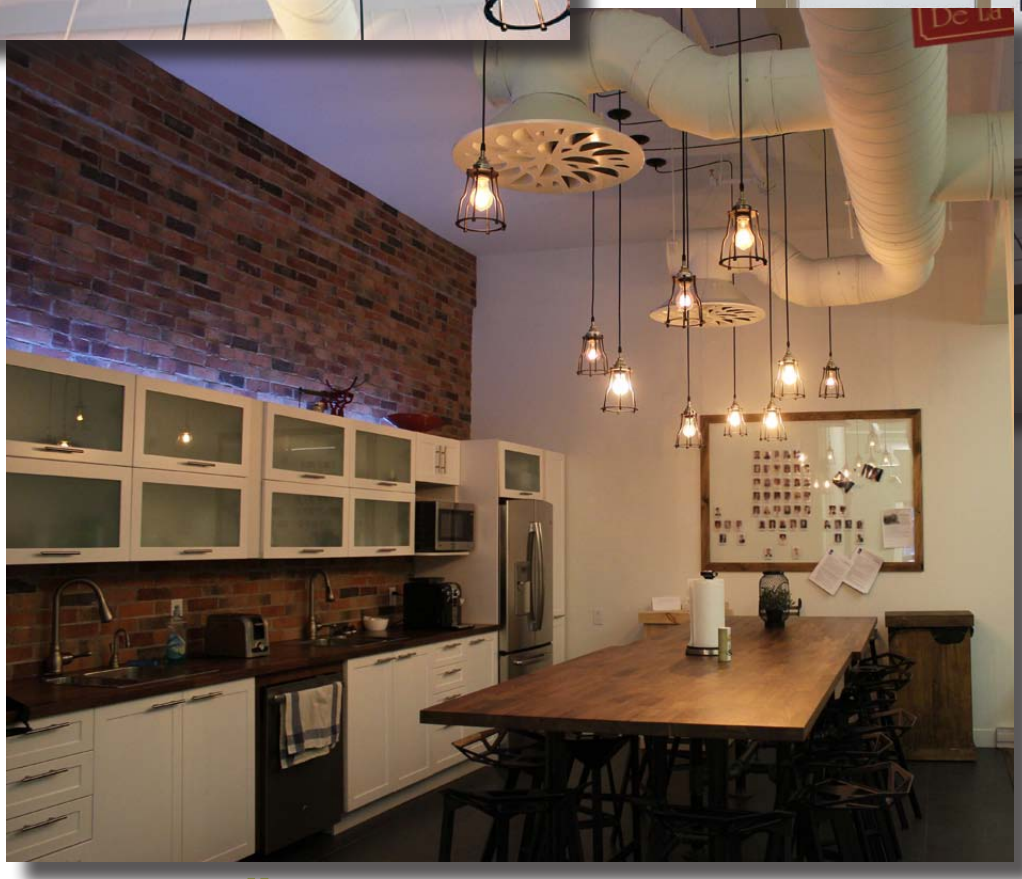
| NEX- | S | 24 | | + PERFAIR-ST | 24 | 10 |
|---|---|---|---|---|---|---|

| | | |
|---|---|---|
| **Neck Diameter** | | 6” 8”, 10” or 12” D |
| **Match Face Dim** | | Match Product Face |
| **Plenum** | **PERFAIR-CS** | Round, Side Entry |
| | **PERFAIR-CT** | Round, Top Entry |
| | **PERFAIR-SS** | Square, Side Entry |
| | **PERFAIR-ST** | Square, Top Entry |
| **Concave Elements Color** | **Std** | White by default |
| | **/EN** | Night |
| | **/EV** | Pistachio Green |
| | **/EL** | Lavender Blue |
| | **/ER** | Red |
| **Face Dimension** | **12** | 12”x12” Square Face |
| | **16** | 16” Diameter Face |
| | **24** | 24”x24” Square Face |
| | **25** | 25” Diameter Face |
| **Model** | **C** | Seel, Round |
| | **S** | Steel, Square |
| | **ALU-C** | Aluminum, Round |
| | **ALU-S** | Aluminum, Square |



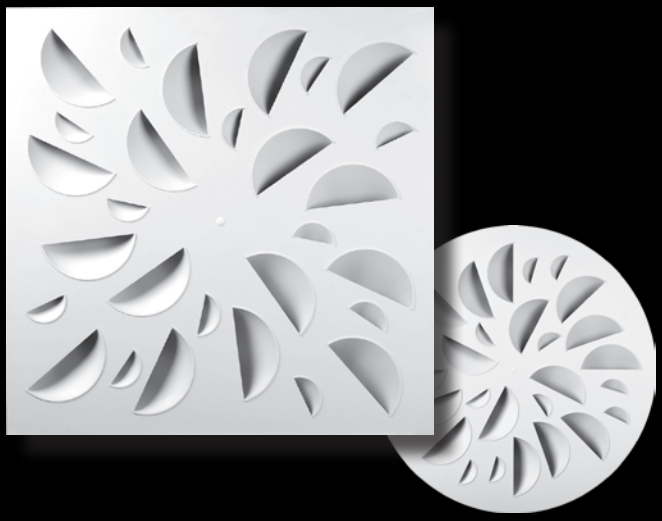






# NEX

## Concave Elements Swirl Diffusers



**A picture is worth a thousand words, yet this revolutionary diffuser is more than just about the look. Its high induction swirl pattern, created by multiple jets, mixes supply air with room air more efficiently, ultimately providing a higher level of comfort in the room. Another great step in the new era of air distribution.**

## NEX STEP... PICK YOUR CONCAVE ELEMENTS COLOR



Pistachio Green



Lavender Blue



Red



Night

**Available in square and circular shapes, NEX diffusers are suitable for suspended ceilings, closed ceilings and open ceilings. NEX can easily replace standard diffusers in existing buildings for instant look and comfort improvement.**



*Innovative Solutions by* EFFECTIV™



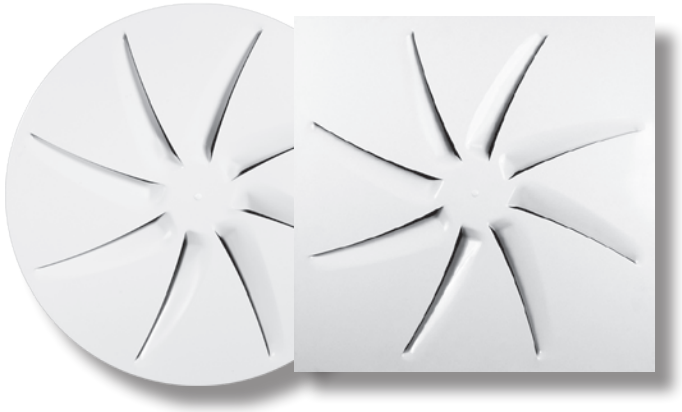
# OTO

## Curved Slot Architectural Swirl Diffusers

EFFECTIV™

Nov 15 2020

# OTO SERIES
## Curved Slot Swirl Diffusers



**OTO-C & OTO-S**
**by MADEL®**

**PATENTED**

- Fixed and reliable high induction swirl pattern
- High velocity swirl jets provide efficient mixing of supplied air with room air
- High tolerance to air entering the diffuser at an angle
- Architecturally appealing curves and design
- Great for lower cfm or high comfort applications
- Square and round shapes available
- Lay-in, duct mounted or drywall mounted, suitable for all ceilings
- Single piece, heavy-gauge stamped steel face construction
- Matching high-performance PERFAIR plenums, choice of top or side connection
- PERFAIR have built-in anti-seismic attachment tabs and air equalizer/volume damper

OTO Series curved slot swirl diffusers by EffectiV HVAC™ and MADEL® are designed to be used in air conditioning, ventilation and heating systems at a temperature differential up to 22ºF (12ºC). They can be mounted in false ceilings, on drywall, or suspended from the ceiling, from 8.5 feet to 13 feet (2.6 up to 4 meters) high. OTO diffusers allow a flow variation of 60% while keeping the air stream stable.

The particular design of OTO diffusers creates a uniform airflow along the length of each aperture.
The radial configuration of the eight curved slots produces a rotational blade jet pattern. The resulting high velocity swirl diffusion combined with a Coanda effect results in efficient mixing of supplied air with room air, a high induction ratio and reduced air stratification.

As a result of the collaboration with Lievore, Altherr & Molina, OTO's original design allows for manufacturing from a single continuous sheet, without any edges highlighting an assembled construction. This results in very smooth airflow characteristics while creating new design possibilities and reducing the visual impact within the architectural surroundings.

## Some Applications

- Ideal for medium to low cfm applications where a high level of comfort is required
- Ideal when reliable performance is required despite installation constraints
- Closed office space, reception desk, waiting rooms, meeting rooms
- High end residential applications
- Restaurant dining rooms
- Childcare
- Schools and classrooms
- Call centers
- Dental and medical clinics
- Multi-purpose rooms

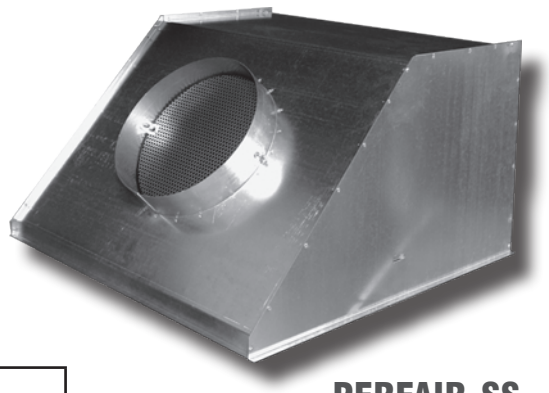




## Plenum Selection

OTO swirl diffusers are available with a wide selection of PERFAIR plenums to suit any type of application. PERFAIR-SS with side connection is the most popular plenum for Square Diffusers and only requires 14" of ceiling space.

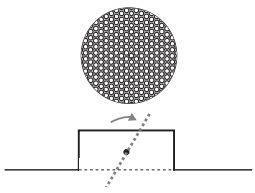
All PERFAIR plenums come with antiseismic tabs and perforated air volume damper / air equalizer.



**PERFAIR-SS**

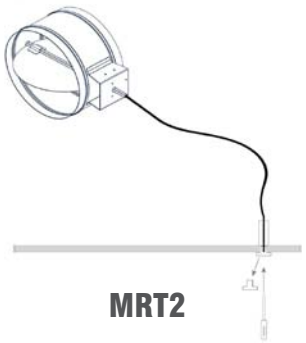
| Plenum Model | Face Type | Connection | Recommended For |
|---|---|---|---|
| PERFAIR-CS | Round | Side | False or closed ceiling |
| PERFAIR-CT | Round | Top | Open ceiling with visible duct coming from top |
| PERFAIR-SS | Square | Side, Angle | False or closed ceiling |
| PERFAIR-SSS | Square | Side | Open ceiling with visible duct coming from side |
| PERFAIR-ST | Square | Top | Open ceiling with visible duct coming from top |
| PERFAIR-XS | Square | Side, Oval | Very limited ceiling space (6" min) |
| PERFAIR-XSS | Square | Side, Rect. | Very limited ceiling space (5" min) |

## Integrated Air Volume Dampers



**R**

Perforated damper + air equalizer (Standard)



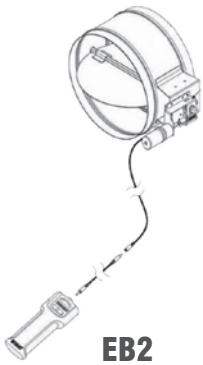
**MRT2**

Manually operated damper, cable through wall with termination fixture



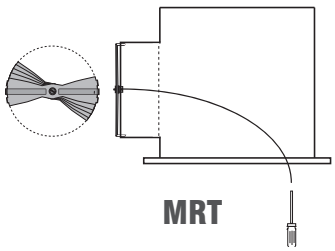
**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through wall with termination fixture

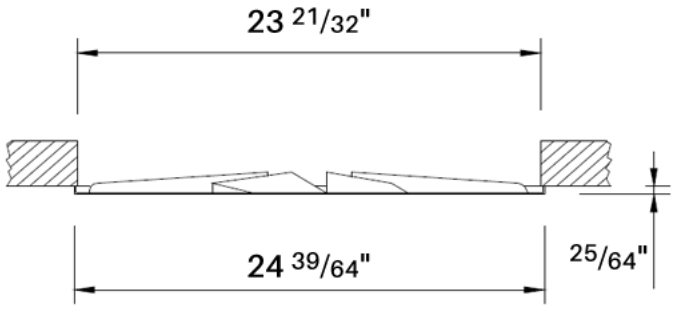


**MRT**

Manually operated damper, cable inside the plenum, adjustment through face

# OTO-C Curved Slot Round Swirl Diffuser

| Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 25'' (625mm) | 0.0427 | 210 | 341 |






OTO-C

# OTO-C + PERFAIR Performance Data

24 5/8" Diameter Face (Imperial) 625mm Diameter Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | | 79 | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | | - | 0.01 | 0.02 | 0.03 | 0.03 | 0.05 |
| | NC | | | < 15 | < 15 | < 15 | < 15 | < 15 | 18 |
| | Throw (ft) - Coanda Effect | | | 2-3-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-6 | 3-5-8 |
| | Throw (ft) - No Ceiling Effect | | | 1-2-3 | 1-2-3 | 1-2-7 | 2-3-4 | 2-3-5 | 2-4-6 |
| 8 | CFM | | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | | 0.02 | 0.03 | 0.04 | 0.06 | 0.08 | 0.1 | 0.16 |
| | NC | | < 15 | < 15 | 15 | 19 | 24 | 27 | 33 |
| | Throw (ft) - Coanda Effect | | 2-3-4 | 2-4-6 | 3-5-7 | 3-6-8 | 4-6-10 | 4-7-11 | 6-9-14 |
| | Throw (ft) - No Ceiling Effect | | 1-2-3 | 2-3-4 | 2-4-5 | 3-4-6 | 3-5-7 | 3-6-8 | 4-7-10 |
| 10 | CFM | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 |
| | Pressure Loss (in.w.g.) | 0.017 | 0.038 | 0.065 | 0.099 | 0.139 | 0.186 | 0.239 | 0.364 |
| | NC | < 15 | < 15 | 21 | 27 | 31 | 36 | 39 | 45 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 3-4-7 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-15 | 7-12-17 | 9-14-22 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-5 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-11 | 5-9-13 | 6-11-16 |

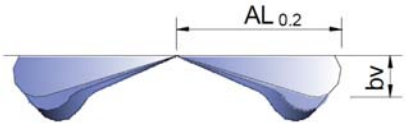
**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

# OTO-C + PERFAIR Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 25''D (625mm) | Pressure Loss | x1 | x1.2 | x3.1 |
| | NC | +0.8 | +2.7 | -0.6 |

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | **Kh** | **KI** |
| **0** | 0.04 | 1 |
| **-2** | 0.045 | 0.945 |
| **-4** | 0.05 | 0.91 |
| **-6** | 0.055 | 0.87 |
| **-8** | 0.06 | 0.84 |
| **-10** | 0.068 | 0.82 |
| **-12** | 0.076 | 0.805 |
| **-15** | 0.089 | 0.78 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | |
|---|---|---|
| **Throw (ft)** | **i** | **Delta T Ratio** |
| **4** | 7 | 0.12 |
| **6** | 12 | 0.057 |
| **8** | 14 | 0.04 |
| **10** | 18 | 0.029 |
| **15** | 28 | 0.017 |
| **20** | 38 | - |
| **25** | 47 | - |
| **30** | 58 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

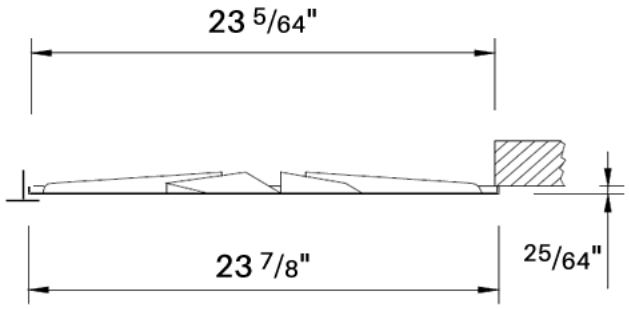
Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

# How to Specify OTO-C

Supply and mounting of round high induction OTO-C swirl diffuser, with stamped curved slots in radial pattern, dimension 25 inches or 625 mm. Constructed from galvanized steel face panel powder coated in white M9016. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

# OTO-S Curved Slot Square Swirl Diffuser

| Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 24''x 24'' (605mm) | 0.0427 | 210 | 341 |






OTO-S

# OTO-S + PERFAIR Performance Data

24" x 24" Face (Imperial) 605mm x 605mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | | 79 | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | | - | 0.01 | 0.02 | 0.03 | 0.03 | 0.05 |
| | NC | | | < 15 | < 15 | < 15 | < 15 | < 15 | 20 |
| | Throw (ft) - Coanda Effect | | | 2-3-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-6 | 3-5-8 |
| | Throw (ft) - No Ceiling Effect | | | 1-2-3 | 1-2-3 | 1-2-7 | 2-3-4 | 2-3-5 | 2-4-6 |
| 8 | CFM | | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | | 0.02 | 0.03 | 0.04 | 0.06 | 0.08 | 0.1 | 0.16 |
| | NC | | < 15 | < 15 | 17 | 22 | 26 | 30 | 36 |
| | Throw (ft) - Coanda Effect | | 2-3-4 | 2-4-6 | 3-5-7 | 3-6-8 | 4-6-10 | 4-7-11 | 6-9-14 |
| | Throw (ft) - No Ceiling Effect | | 1-2-3 | 2-3-4 | 2-4-5 | 3-4-6 | 3-5-7 | 3-6-8 | 4-7-10 |
| 10 | CFM | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 |
| | Pressure Loss (in.w.g.) | 0.017 | 0.038 | 0.065 | 0.099 | 0.139 | 0.186 | 0.239 | 0.364 |
| | NC | < 15 | 16 | 23 | 29 | 34 | 38 | 41 | 47 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 3-4-7 | 4-6-9 | 4-7-11 | 5-9-13 | 6-10-15 | 7-12-17 | 9-14-22 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-5 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-11 | 5-9-13 | 6-11-16 |

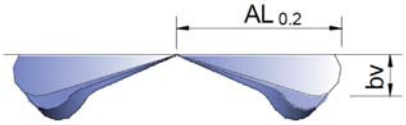
**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

# OTO-S + PERFAIR Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 24''x 24'' (605mm) | Pressure Loss | x1 | x1.2 | x3.1 |
| | NC | +0.8 | +2.7 | -0.6 |

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | **Kh** | **KI** |
| **0** | 0.04 | 1 |
| **-2** | 0.045 | 0.945 |
| **-4** | 0.05 | 0.91 |
| **-6** | 0.055 | 0.87 |
| **-8** | 0.06 | 0.84 |
| **-10** | 0.068 | 0.82 |
| **-12** | 0.076 | 0.805 |
| **-15** | 0.089 | 0.78 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | |
|---|---|---|
| **Throw (ft)** | **i** | **Delta T Ratio** |
| **4** | 7 | 0.12 |
| **6** | 12 | 0.057 |
| **8** | 14 | 0.04 |
| **10** | 18 | 0.029 |
| **15** | 28 | 0.017 |
| **20** | 38 | - |
| **25** | 47 | - |
| **30** | 58 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

## How to Specify OTO-S

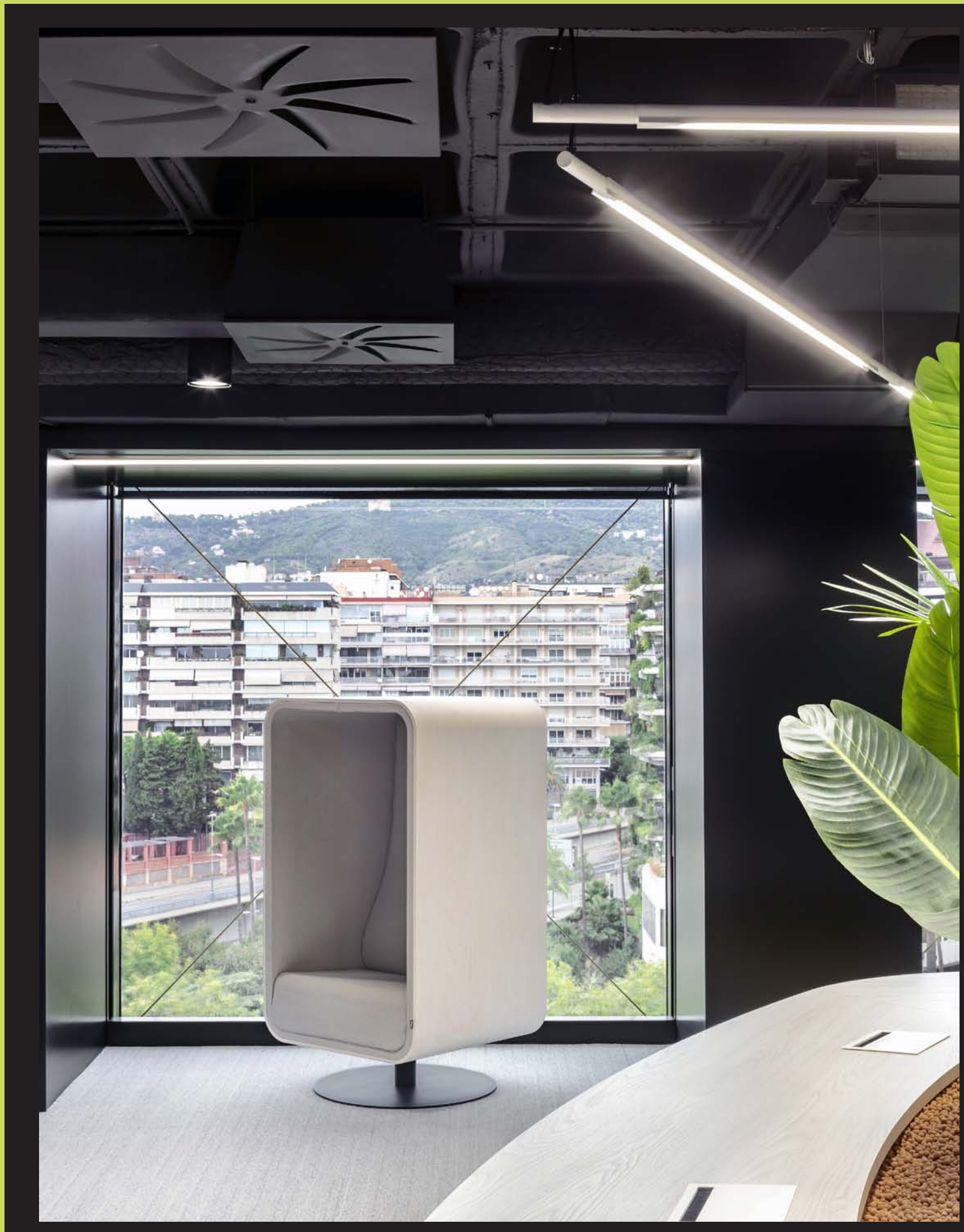
Supply and mounting of high induction square swirl diffuser OTO-S, with stamped curved slots in radial pattern, dimension 24x24 inches or 605x605 mm. Constructed from galvanized steel face panel powder coated in white M9016. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

## How to Order OTO Series

| OTO | -S | 24 | + PERFAIR-ST | 24 | 10 |
|---|---|---|---|---|---|

| | | |
|---|---|---|
| **Neck Diameter** | | 6” 8”, 10” or 12” D |
| **Match Face Dim** | | Match Product Face |
| **Plenum** | **PERFAIR-CS** | Round, Side Entry |
| | **PERFAIR-CT** | Round, Top Entry |
| | **PERFAIR-SS** | Square, Side Entry |
| | **PERFAIR-ST** | Square, Top Entry |
| **Face Dimension** | **24** | 24”x24” Square Face |
| | **25** | 25” Diameter Face |
| **Model** | **C** | Round |
| | **S** | Square |







# PLAY

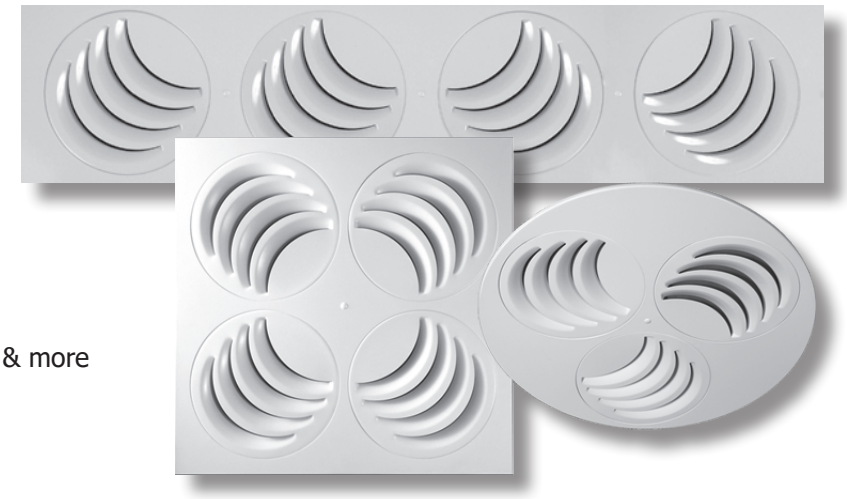
## 360-Degree Adjustable Diffusers

COMFORT THROUGH **FLEXIBILITY**

EFFECTIV™

Nov 15 2020

# PLAY SERIES
## Adjustable Sectors Diffusers



**PLAY-R, PLAY-S & PLAY-C**
**by MADEL®**

**PATENTED**

- Full 360 degrees horizontal adjustment
- Easy to adjust from the face, without tools
- Can act as swirl, 1 Way, 2 Way, 3 Way, 4 Way & more
- Architecturally appealing
- Provides new solutions for revolutionary designs
- Good tolerance to airflow entering the diffuser at an angle
- High induction causes rapid reduction of speeds and temperature variations
- Square, round and rectangular shapes available
- Lay-in, duct mounted or drywall mounted, suitable for all ceilings
- Heavy-gauge, powder coated steel face
- Matching high-performance PERFAIR plenums, choice of top or side connection
- PERFAIR have built-in anti-seismic attachment tabs and air equalizer/volume damper

| Model | Recommended cfm | |
|---|---|---|
| | Min | Max |
| PLAY-C 25 | 160 | 315 |
| PLAY-R 48 1 2 | 200 | 400 |
| PLAY-S 24 | 200 | 400 |



PLAY Adjustable Sectors Diffusers by EffectiV HVAC™ and MADEL® are designed to be used in air conditioning, ventilation and heating systems at a temperature differential up to 22ºF (12º C). They can be mounted in false ceilings, on drywall, or suspended from the ceiling, from 8.5 feet to 13 feet (2.6 up to 4 meters) high.

The PLAY diffusers respond to a large variety of functional and architectural requirements and provide new solutions not previously available, thanks to their manually-adjustable sectors of diffusion.

The adjustment of each sector is made easy by means of partial stoppers which indicate the different positions. According to the direction of the sectors, PLAY diffusers can act as a swirl or directional (1, 2, 3 or 4-way) diffuser.

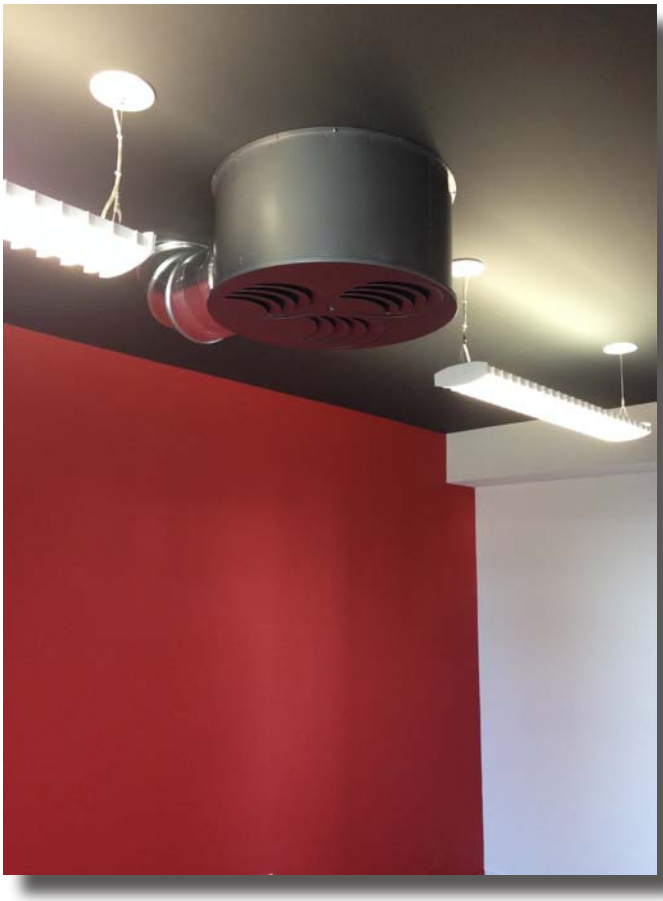
PLAY diffusers, combined with PERFAIR high performance plenum mixing boxes, emit a uniform airflow throughout the passage section despite variations in supplied air temperature and velocity, as well as non-ideal duct installation.

In any one of their configurations, PLAY diffusers use the coanda effect which creates uniform airflow in all effective areas. The high induction ratio helps reduce stratification. PLAY diffusers allow a flow variation of 60%, keeping the air stream stable.

PLAY diffusers' unique 100% horizontal adjustability, high induction ratio and reduced air stratification allow for designs with a much higher level of comfort and provide opportunity for significant energy savings.

Face and plenum box are ordered separately and attached together with a screw through face which is fixed in plenum crossbar.





## Some Applications

- Ideal for applications where conditions and layout may change over time
- Ideal when combination of comfort, high cfm, low noise and appealing look is required
- PLAY-R is perfect for hallways and large rooms with perimeter supply
- Best diffuser for large office spaces with multiple cubicles
- Restaurants, bars, hotels, stores, lobbies
- Art galleries
- Childcare
- Schools and classrooms
- Meeting rooms
- Multi-purpose rooms

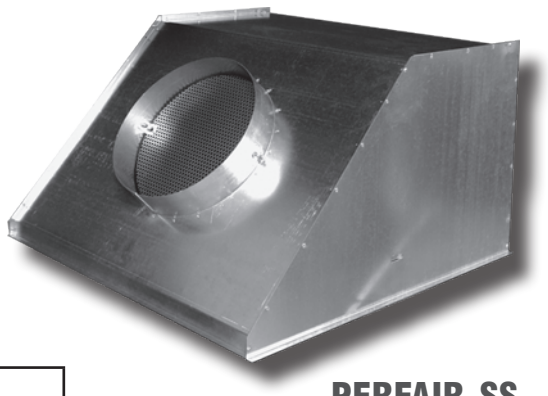




## Plenum Selection

PLAY adjustable diffusers are available with a wide selection of PERFAIR plenums to suit any type of application. PERFAIR-SS with side connection is the most popular plenum for Square Diffusers and only requires 14" of ceiling space.

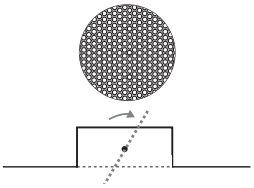
All PERFAIR plenums come with antiseismic tabs and perforated air volume damper / air equalizer.



PERFAIR-SS

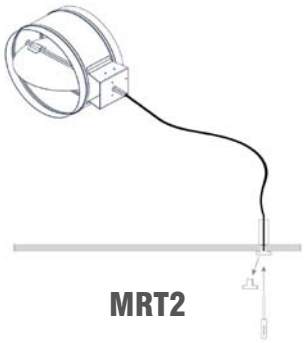
| Plenum Model | Face Type | Connection | Recommended For |
|---|---|---|---|
| PERFAIR-CS | Round | Side | False or closed ceiling |
| PERFAIR-CT | Round | Top | Open ceiling with visible duct coming from top |
| PERFAIR-RS | Rectangular | Side | Connection coming from side |
| PERFAIR-RT | Rectangular | Top | Connection coming from top |
| PERFAIR-SS | Square | Side, Angle | False or closed ceiling |
| PERFAIR-SSS | Square | Side | Open ceiling with visible duct coming from side |
| PERFAIR-ST | Square | Top | Open ceiling with visible duct coming from top |
| PERFAIR-XS | Square | Side, Oval | Very limited ceiling space (6" min) |
| PERFAIR-XSS | Square | Side, Rect. | Very limited ceiling space (5" min) |

## Integrated Air Volume Dampers



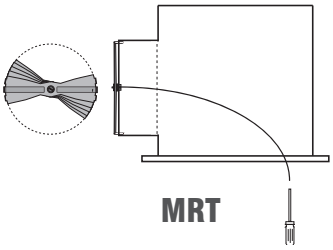
**R**

Perforated damper + air equalizer (Standard)



**MRT2**

Manually operated damper, cable through wall with termination fixture



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

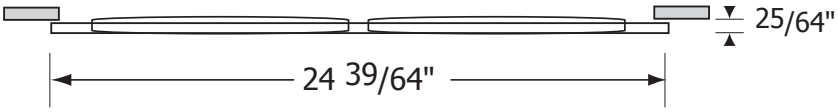
Battery operated electro-balance damper with remote control, cable through wall with termination fixture

# PLAY-C Adjustable Sectors Round Diffuser

| Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 25'' (625mm) | 0.323 | 160 | 315 |



PLAY-C




# PLAY-C + PERFAIR or PLXOC Performance Data

24 5/8" Diameter Face (Imperial) 625mm Diameter Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | | | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | | | 0.02 | 0.029 | 0.038 | 0.049 | 0.073 |
| | NC | | | | < 15 | < 15 | < 15 | 15 | 22 |
| | Throw (ft) - Coanda Effect | | | | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 |
| | Throw (ft) - No Ceiling Effect | | | | 1-2-3 | 2-3-4 | 2-3-4 | 2-3-5 | 2-4-6 |
| 8 | CFM | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | 0.011 | 0.023 | 0.039 | 0.06 | 0.083 | 0.11 | 0.141 | 0.215 |
| | NC | < 15 | < 15 | < 15 | 19 | 24 | 28 | 32 | 38 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-3-5 | 2-4-6 | 3-5-8 | 4-6-9 | 4-7-10 | 5-8-11 | 6-9-14 |
| | Throw (ft) - No Ceiling Effect | 1-2-2 | 1-2-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 3-6-9 | 4-7-11 |
| 10 | CFM | 109 | 164 | 218 | 273 | 327 | 382 | | |
| | Pressure Loss (in.w.g.) | 0.024 | 0.053 | 0.09 | 0.136 | 0.19 | 0.255 | | |
| | NC | < 15 | 17 | 24 | 31 | 36 | 41 | | |
| | Throw (ft) - Coanda Effect | 2-3-5 | 3-5-7 | 4-6-9 | 4-8-11 | 5-9-13 | 6-10-15 | | |
| | Throw (ft) - No Ceiling Effect | 1-2-4 | 2-4-5 | 3-5-7 | 3-6-8 | 4-7-10 | 5-8-11 | | |

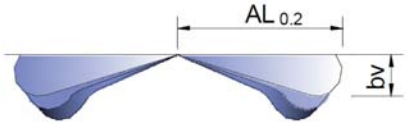
**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

# PLAY-C + PERFAIR or PLXOC Performance Data (continued)

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 25''D (625mm) | Pressure Loss | x 1 | x 1 | x 1.4 |
| | NC | +0.8 | +0.7 | +1.2 |

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | **Kh** | **KI** |
| **0** | .039 | 1 |
| **-2** | .042 | .965 |
| **-4** | .046 | .93 |
| **-6** | .05 | .91 |
| **-8** | .055 | .86 |
| **-10** | .065 | .84 |
| **-12** | .074 | .82 |
| **-15** | .099 | .78 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | |
|---|---|---|
| **Throw (ft)** | **i** | **Delta T Ratio** |
| **4** | 6 | 0.08 |
| **6** | 9 | 0.05 |
| **8** | 13 | 0.037 |
| **10** | 16 | 0.029 |
| **15** | 25 | 0.018 |
| **20** | 34 | - |
| **25** | 43 | - |
| **30** | 52 | - |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

## How to Specify PLAY-C

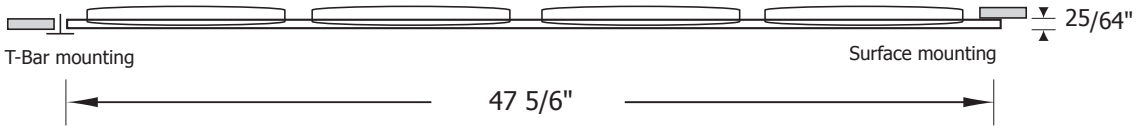
Supply and mounting of round diffuser with three individually adjustable sectors PLAY-C, dimension 25 inches or 625 mm. Airflow adjustment of each sector shall be strictly horizontal and 360 degrees. Constructed from galvanized steel face panel powder coated in white M9016. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

# PLAY-R Adjustable Sectors Rectangular Diffuser

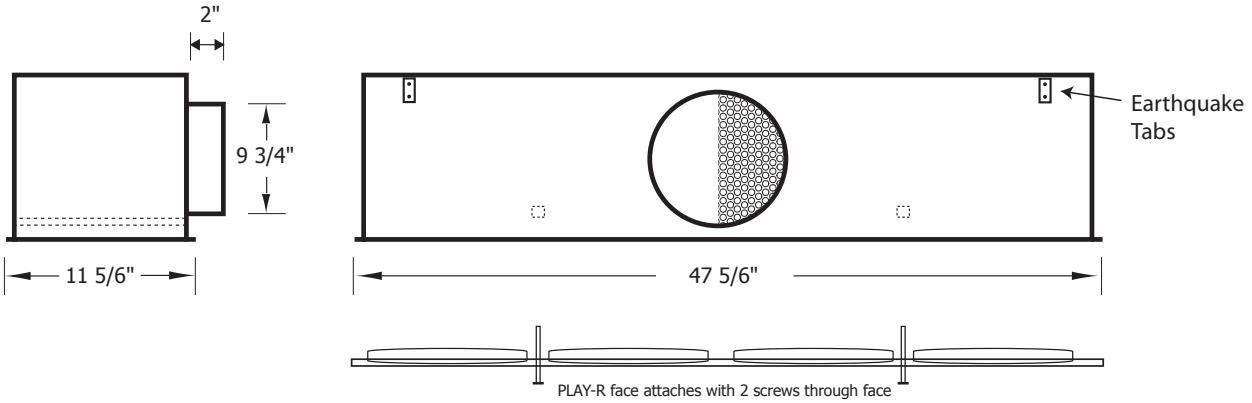
| Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 25'' (625mm) | 0.431 | 200 | 400 |



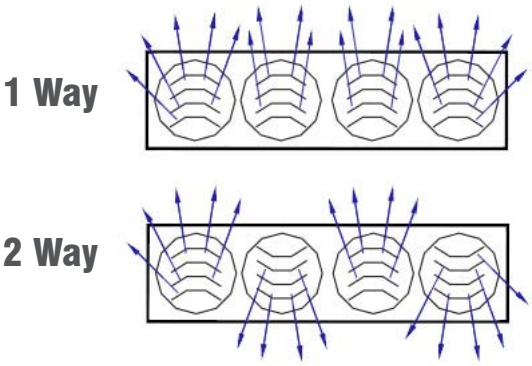
PLAY-R




# PLAY-R Installation in Plenum




# PLAY-R + PERFAIR or PLXOR Performance Data



# PLAY-R + PERFAIR or PLXOR Performance Data (continued)

48" x 12" Face (Imperial) 1215 mm x 299 mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | | 0.01 | 0.016 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | | | 79 | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | | | 0.011 | 0.012 | 0.019 | 0.026 | 0.033 | 0.043 |
| | NC | | | | < 15 | < 15 | < 15 | < 15 | < 15 | 15 |
| | Throw (ft) | 2 Way | | | 1-3-5 | 2-4-6 | 3-4-6 | 3-4-6 | 3-4-7 | 4-5-7 |
| | | 1 Way | | | 4-7-12 | 5-7-12 | 6-9-15 | 6-10-16 | 7-12-19 | 8-14-21 |
| 8 | CFM | | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | | 0.01 | 0.013 | 0.027 | 0.039 | 0.048 | 0.065 | 0.081 | 0.128 |
| | NC | | < 15 | < 15 | < 15 | < 15 | 16 | 20 | 24 | 30 |
| | Throw (ft) | 2 Way | 1-3-5 | 2-4-6 | 3-4-6 | 3-4-7 | 4-5-7 | 5-7-11 | 5-8-12 | 7-11-16 |
| | | 1 Way | 4-6-11 | 5-8-13 | 6-10-16 | 8-13-21 | 8-14-21 | 10-16-24 | 10-17-25 | |
| 10 | CFM | | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 |
| | Pressure Loss (in.w.g.) | | 0.014 | 0.032 | 0.05 | 0.08 | 0.11 | 0.14 | 0.18 | 0.24 |
| | NC | | < 15 | < 15 | 17 | 23 | 28 | 32 | 36 | 42 |
| | Throw (ft) | 2 Way | 2-4-6 | 3-3-5 | 4-6-9 | 5-8-12 | 6-10-15 | 7-11-17 | 7-12-19 | 9-14-22 |
| | | 1 Way | 5-8-13 | 7-12-19 | 9-15-23 | 10-17-25 | 13-22-33 | | | |
| 12 | CFM | | 157 | 236 | 314 | 393 | 471 | 550 | | |
| | Pressure Loss (in.w.g.) | | 0.026 | 0.059 | 0.087 | 0.144 | 0.192 | 0.245 | | |
| | NC | | < 15 | 20 | 26 | 34 | 38 | 43 | | |
| | Throw (ft) | 2 Way | 3-4-6 | 4-7-10 | 6-9-14 | 7-11-18 | 8-13-21 | 9-14-23 | | |
| | | 1 Way | 6-10-16 | 9-16-24 | 12-20-29 | | | | | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| **Damper Correction Factor** | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 48"x12" | Pressure Loss | x 1 | x 1.5 | x 2.3 |
| | NC | +0.7 | +1.7 | +2.4 |

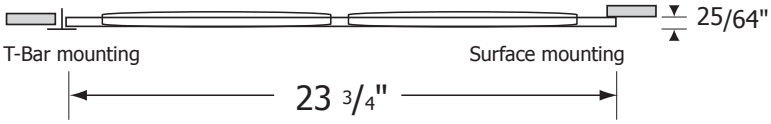
## How to Specify PLAY-R

Supply and mounting of rectangular diffuser PLAY-R with four individually adjustable sectors, dimension 48 inches x 12 inches (1215 mm x 299 mm). Airflow adjustment of each sector shall be strictly horizontal and 360 degrees. Constructed from galvanized steel face panel powder coated in white M9016. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

# PLAY-S Adjustable Sectors Square Diffuser



PLAY-S
(4-Way)






1-Way



2-Way



3-Way



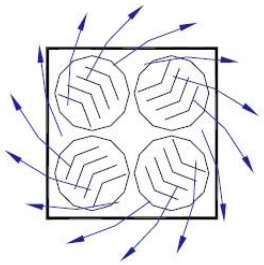
Swirl

## Solve Existing Problems, Prevent Future Ones

- Easily replace standard diffusers in existing buildings to fix current issues
- Prevent AC wars in large office spaces
- Stop creating new problems while trying to solve existing ones
- Also great for new buildings with architectural and physical challenges
- Equip your new building with the PLAY to cost efficiently deal with future problems
- Just PLAY with it! Happy customers and employees are good for your business!

# PLAY-S (Swirl) + PERFAIR or BOXSTAR Performance Data

| Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 24"x24" (605mm) | 0.43 | 200 | 400 |



Swirl

24" x 24" Face, Swirl Effect — 605 mm x 605 mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | | | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | | | 0.01 | 0.014 | 0.019 | 0.024 | 0.037 |
| | NC | | | | < 15 | < 15 | < 15 | < 15 | 16 |
| | Throw (ft) - Coanda Effect | | | | 2-2-4 | 2-3-4 | 2-3-5 | 2-4-6 | 3-5-7 |
| | Throw (ft) - No Ceiling | | | | 1-2-3 | 1-2-3 | 2-3-4 | 2-3-4 | 2-4-5 |
| 8 | CFM | | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | | 0.011 | 0.02 | 0.03 | 0.041 | 0.055 | 0.071 | 0.107 |
| | NC | | < 15 | < 15 | < 15 | 18 | 22 | 25 | 31 |
| | Throw (ft) - Coanda Effect | | 2-3-4 | 2-3-5 | 3-4-6 | 3-5-7 | 3-6-9 | 4-6-10 | 5-8-12 |
| | Throw (ft) - No Ceiling | | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-6 | 3-5-7 | 4-6-9 |
| 10 | CFM | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 |
| | Pressure Loss (in.w.g.) | 0.012 | 0.026 | 0.045 | 0.068 | 0.095 | 0.127 | 0.163 | 0.247 |
| | NC | < 15 | < 15 | 19 | 25 | 30 | 34 | 37 | 43 |
| | Throw (ft) - Coanda Effect | 2-3-4 | 2-4-6 | 3-5-8 | 4-6-10 | 4-8-11 | 5-9-13 | 6-10-15 | 9-16-24 |
| | Throw (ft) - No Ceiling | 1-2-3 | 2-3-4 | 2-4-6 | 3-5-7 | 3-6-8 | 4-6-10 | 4-7-11 | 7-12-18 |
| 12 | CFM | 157 | 236 | 314 | 393 | 471 | 550 | | |
| | Pressure Loss (in.w.g.) | 0.024 | 0.052 | 0.088 | 0.134 | 0.188 | 0.251 | | |
| | NC | < 15 | 21 | 29 | 35 | 39 | 44 | | |
| | Throw (ft) - Coanda Effect | 2-4-6 | 3-6-8 | 4-7-11 | 5-9-13 | 6-10-16 | 7-12-18 | | |
| | Throw (ft) - No Ceiling | 2-3-4 | 3-4-6 | 3-5-8 | 4-7-10 | 5-8-12 | 5-9-14 | | |

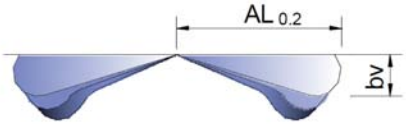
**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively.

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 24''x24'' | Pressure Loss | x 1 | x1.5 | x 2.3 |
| | NC | +0.8 | +1.7 | +1.7 |

# PLAY-S (Swirl) + PERFAIR or BOXSTAR Performance Data (continued)

| Delta T Correction Factors | | |
|---|---|---|
| **Δ T (F)** | **Kh** | **KI** |
| **0** | .039 | 1 |
| **-2** | .042 | .965 |
| **-4** | .046 | .93 |
| **-6** | .05 | .91 |
| **-8** | .055 | .86 |
| **-10** | .065 | .84 |
| **-12** | .074 | .82 |
| **-15** | .099 | .78 |




bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

| Ratios | | |
|---|---|---|
| **Throw (ft)** | **i** | **Delta T Ratio** |
| **4** | 7 | 0.092 |
| **6** | 12 | 0.059 |
| **8** | 14 | 0.043 |
| **10** | 18 | 0.034 |
| **15** | 28 | 0.023 |
| **20** | 40 | 0.017 |
| **25** | 49 | - |
| **30** | 61 | - |

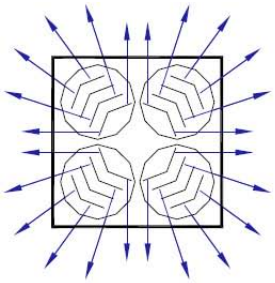
**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

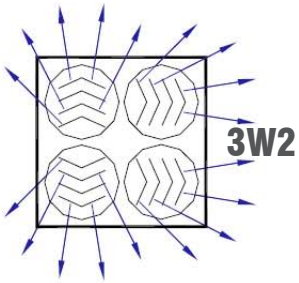
**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

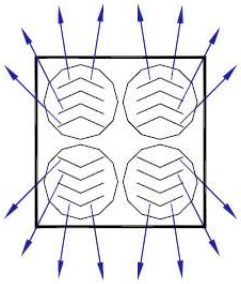
# PLAY-S (Directional) + PERFAIR or BOXSTAR Performance Data



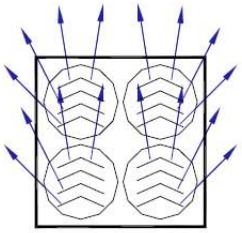
4 Way




3 Way



2 Way



1 Way

24" x 24" Face, Directional Throw

605 mm x 605 mm Face (Metric)

| Neck Size (inches) | Neck (fpm) Velocity | | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | | 0.002 | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.041 | .062 |
| 6 | CFM | | | | 79 | 98 | 118 | 137 | 157 | 196 |
| | Pressure Loss (in.w.g.) | | | | 0.003 | 0.01 | 0.014 | 0.019 | 0.024 | 0.037 |
| | NC | | | | < 15 | < 15 | < 15 | < 15 | < 15 | 16 |
| | Throw (ft) | 4W, 3W | | | 2-3-4 | 2-4-5 | 2-4-6 | 3-5-7 | 3-6-8 | 3-6-9 |
| | | 3W2, 2W | | | 3-6-10 | 4-7-11 | 4-8-12 | 5-9-14 | 6-11-16 | 7-13-19 |
| | | 1W | | | 5-9-13 | 6-10-13 | 6-11-16 | 7-12-18 | 8-14-21 | 10-17-25 |
| 8 | CFM | | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 349 |
| | Pressure Loss (in.w.g.) | | 0.007 | 0.011 | 0.02 | 0.03 | 0.041 | 0.055 | 0.071 | 0.107 |
| | NC | | < 15 | < 15 | < 15 | < 15 | 18 | 22 | 25 | 31 |
| | Throw (ft) | 4W, 3W | 2-3-4 | 2-4-5 | 3-5-7 | 3-6-9 | 4-7-10 | 5-8-12 | 5-8-13 | 7-11-16 |
| | | 3W2, 2W | 3-6-10 | 4-7-11 | 5-9-14 | 7-12-18 | 8-14-21 | 9-16-24 | 10-17-26 | 13-22-34 |
| | | 1W | 5-9-12 | 6-10-14 | 7-12-18 | 9-16-24 | 11-18-27 | 12-20-30 | 13-22-33 | 17-28-42 |
| 10 | CFM | | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 |
| | Pressure Loss (in.w.g.) | | 0.012 | 0.026 | 0.045 | 0.068 | 0.095 | 0.127 | 0.163 | 0.247 |
| | NC | | < 15 | < 15 | 17 | 23 | 28 | 32 | 36 | 42 |
| | Throw (ft) | 4W, 3W | 2-4-5 | 3-5-8 | 4-7-10 | 5-8-13 | 6-10-15 | 7-11-17 | 8-13-19 | 9-16-24 |
| | | 3W2, 2W | 4-7-11 | 6-11-16 | 8-14-21 | 10-17-26 | 12-20-32 | 14-23-35 | 16-26-39 | 19-32-48 |
| | | 1W | 6-10-14 | 8-14-21 | 11-18-27 | 13-22-33 | 16-26-39 | 18-30-45 | 20-34-51 | 25-42-63 |
| 12 | CFM | | 157 | 236 | 314 | 393 | 471 | 550 | | |
| | Pressure Loss (in.w.g.) | | 0.024 | 0.052 | 0.088 | 0.134 | 0.188 | 0.251 | | |
| | NC | | < 15 | 21 | 28 | 34 | 39 | 43 | | |
| | Throw (ft) | 4W, 3W | 4-6-9 | 5-8-12 | 6-9-14 | 7-12-18 | 9-15-22 | 9-16-24 | | |
| | | 3W2, 2W | 7-13-19 | 9-16-24 | 11-19-29 | 15-24-37 | 18-29-44 | 19-32-48 | | |
| | | 1W | 10-16-24 | 12-20-30 | 15-24-36 | 19-32-48 | 23-38-57 | 25-42-63 | | |

**Performance Notes**

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively
- Throw Values are with Coanda Effect. If no ceiling, multiply values by 0.75

| Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|
| 24”x24” (605x605mm) | 0.43 | 150 | 400 |

| Damper Correction Factor | | 100% Open | 50% Open | 10% Open |
|---|---|---|---|---|
| 24”x24” (605x605mm) | Pressure Loss | x 1 | x 1.5 | x 2.3 |
| | NC | +0.8 | +1.7 | +1.7 |

## How to Specify PLAY-S

Supply and mounting of square diffuser PLAY-S with four individually adjustable sectors, dimension 24 inches x 24 inches (605 mm x 605 mm). Airflow adjustment of each sector shall be strictly horizontal and 360 degrees. Constructed from galvanized steel face panel powder coated in white M9016. Shall be supplied and installed with PERFAIR high performance plenum box featuring integrated air equalizer and volume damper, security tabs, crossbar and long screw for easy face attachment. By EffectiV HVAC / MADEL.

## How to Order PLAY Series

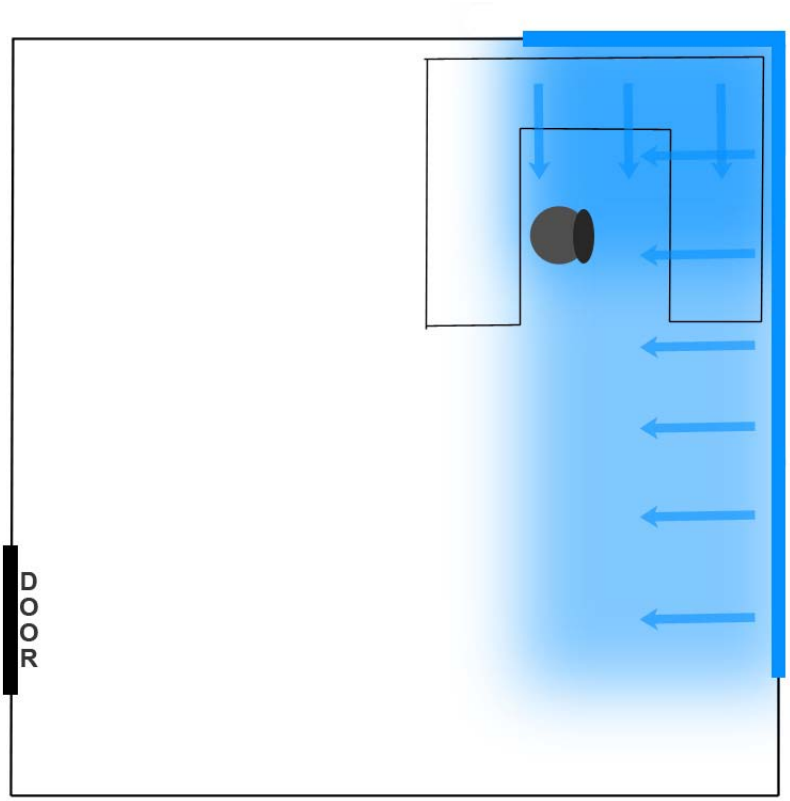
**PLAY- S 24 + PERFAIR-ST 24 10**

| | | |
|---|---|---|
| **Neck Diameter** | | 6” 8”, 10” or 12” D |
| **Face Dimension** | | Match Product Face |
| **Plenum** | **PERFAIR-CS** | Round, Side Connection |
| | **PERFAIR-CT** | Round, Top Connection |
| | **PERFAIR-SS** | Square, Side Connection |
| | **PERFAIR-ST** | Square, Top Connection |
| | **PERFAIR-RS** | Rectangular, Side Connection |
| | **PERFAIR-RT** | Rectangular, Top Connection |
| **Face Dimension** | **24** | 24”x24” Square Face |
| | **25** | 25” Diameter Face |
| | **36 12** | 36”x12” Rectangular Face |
| | **48 12** | 48”x12” Rectangular Face |
| **Model** | **C** | Round |
| | **R** | Rectangular |
| | **S** | Square |

# Simple Energy Saving Example - Small Office With Large Window

This is a simple example of how the PLAY Adjustable Diffuser can help save energy while improving the level of comfort. This example is for a closed office but could also apply to any other commercial space with large windows and other random sources of heat and cold.

In this example, the small closed office has a large corner window – also covering most of one of the walls. In the winter, the large window becomes a considerable source of heat loss and the area around the window feels really cold. The exact opposite happens in hot summer days. In both cases, the result is serious discomfort for the employee.




This is not fiction; as a matter of fact, it is a real example of an existing building. As we often see in small closed offices, this one had a single standard ceiling diffuser installed in the center of the room. Many solutions were tried to improve the level of comfort; one being the use of zoning and volume control to supply more conditioned air to the room in order to compensate for heat gain or loss. The obvious problem with this solution is that it consumes a lot more energy. Moreover, some of the over-heated or over-cooled air is sent directly throughout the door into an already well-conditioned space. Last but not least, we might end up with a relatively comfortable zone on the right side of the room, but at the expense of the left side of the room now being too cold or too hot.

## The Solution

In order to efficiently solve that problem, what we really need is to supply more conditioned air concentrated towards the window. Yet we want to supply some conditioned air towards the rest of the room in order to avoid critical stratification and to keep room temperature as even and stable as possible. Ideally, we would rather avoid sending air directly throughout that door. Introducing the PLAY Adjustable Diffuser! The two pictures below show two different views of that office with the PLAY diffuser installed. One picture is taken from the door towards the window and the other one from the window towards the door.

**View from door**




**View from window**

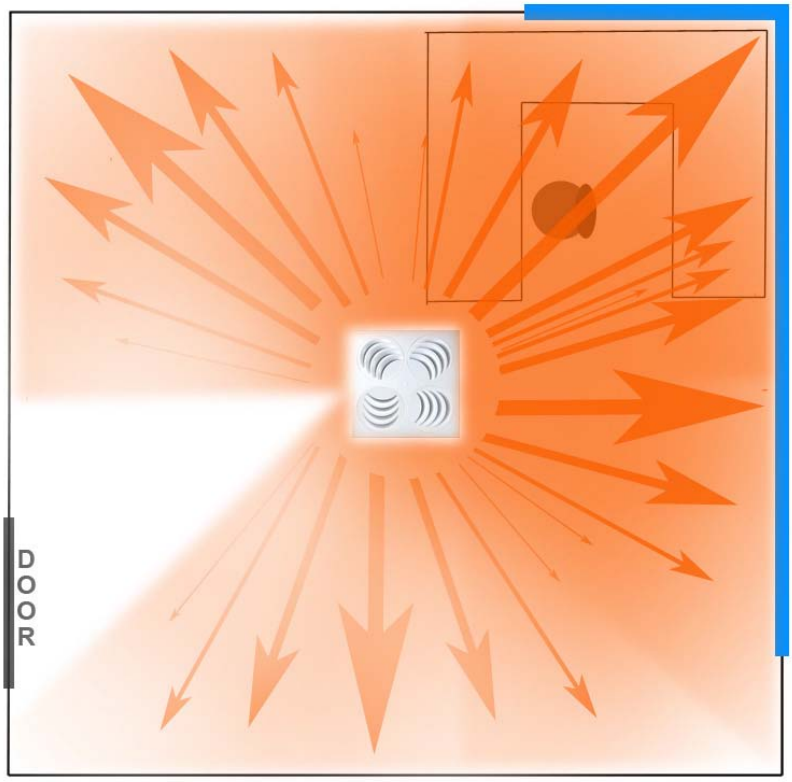


## Simple Energy Saving Example - Small Office With Large Window

As you can see, the 4 sectors have been numbered to explain the configuration:

- Sector 1 is directed towards the windowed corner of the room.
- Sector 2 covers the rest of the windowed wall.
- Sector 3 covers the left corner, away from the door.
- Sector 4 covers the back wall, also away from the door.

### View from above




**In this example, we have reached the highest possible level of comfort in the most energy efficient way.**

The PLAY is the only diffuser which is currently able to achieve this. A one-way, two-way or three-way diffuser would not have supplied air in the room efficiently as the PLAY; furthermore, they would have created stratification zones. Creating an air curtain with linear diffusers in front of the window is also great solution; however, it involves extra ducting and installation, resulting in much higher costs.

The PLAY adjustable diffuser is the easiest, most cost-effective way to achieve optimal results in such applications.

# PLAY

## Adjustable Sectors Diffusers



**The ultimate toys for architects and engineers, PLAY diffusers combine innovative looks with versatile performance, providing both attractive designs and increased comfort levels. PLAY diffusers are the only diffusers on the market today which allow for the full and simple horizontal adjustment of airflow, from the face and with no need for tools.**

## PLAY WITH IT! Full adjustability allows for multiple air patterns



4 Way



3 Way



2 Way



1 Way



Swirl





**Available in square, rectangular or circular shapes, PLAY diffusers are suitable for suspended ceiling, drywall and open ceiling applications.**

*Innovative Solutions by* EFFECTIV™



# RXO

## Stamped Swirl Diffusers

EFFECTIV™

# RXO SERIES
## Stamped Swirl Diffusers

- Fixed swirl diffusion pattern
- Available in square or round
- Heavy-gauge steel construction
- Matching High Performance PERFAIR Plenums
- T-bar lay-in or surface mount
- Ideal for cooling applications
- Available in imperial and metric standard dimensions



**RXO-S**



**RXO-C**

RXO swirl diffusers are designed to be used in air conditioning, ventilation and heating applications. They can be mounted in false ceilings or suspended from the ceiling. The radial stamped blades design forces a swirl air diffusion pattern leveraging the coanda effect. RXO swirl diffusers provide a high level of induction rate, helping reducing room air stratification.

RXO series diffusers admit a flow variation of 60% keeping the air stream stable. These diffusers can be used in premises with ceilings 8.5 up to 13 feet (2.6 up to 4 meters) high and with a temperature differential up to 22ºF (12ºC).

## Model Dimensions and Quick Selection

RXO-S Square Diffusers

| Model | Imperial Dim | Metric Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|---|---|
| **RXO-S 16** | 16” x 16” | 400 x 400 mm | 0.178 | 88 | 241 |
| **RXO-S 20** | 20” x 20” | 500 x 500 mm | 0.362 | 176 | 353 |
| **RXO-S 24** | 24” x 24” | 605 x 605 mm | 0..538 | 294 | 476 |
| **RXO-S400 24** | 24” x 24” | 605 x 605 mm | 0.178 | 88 | 241 |
| **RXO-S500 24** | 24” x 24” | 605 x 605 mm | 0.362 | 176 | 353 |

RXO-C Round Diffusers

| Model | Imperial Dim | Metric Dim | Free Area (sqf) | Min cfm | Max cfm |
|---|---|---|---|---|---|
| **RXO-C 16** | 16” D | 400 mm Dia | 0.178 | 88 | 241 |
| **RXO-C 20** | 20” D | 500 mm Dia | 0.362 | 176 | 353 |
| **RXO-C 25** | 25” D | 625 mm Dia | 0..538 | 294 | 476 |

## Some Applications

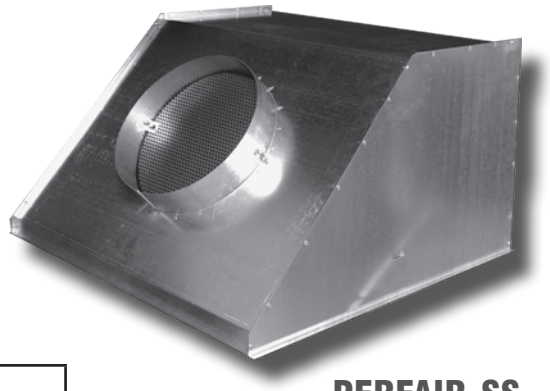
- Office Spaces and Meeting Rooms
- Schools
- Restaurants, Bars, Hotels, Stores
- VAV Applications
- Comfort-critical applications



## Plenum Selection

RXO swirl diffusers are available with a wide selection of PERFAIR plenums to suit any type of application. PERFAIR-SS with side connection is the most popular plenum for Square Diffusers and only requires 14" of ceiling space.

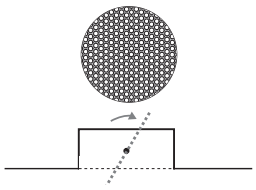
All PERFAIR plenums come with antiseismic tabs and perforated air volume damper / air equalizer.



**PERFAIR-SS**

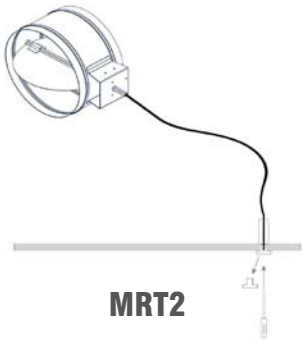
| Plenum Model | Face Type | Connection | Recommended For |
|---|---|---|---|
| PERFAIR-CS | Round | Side | False or closed ceiling |
| PERFAIR-CT | Round | Top | Open ceiling with visible duct coming from top |
| PERFAIR-SS | Square | Side, Angle | False or closed ceiling |
| PERFAIR-SSS | Square | Side | Open ceiling with visible duct coming from side |
| PERFAIR-ST | Square | Top | Open ceiling with visible duct coming from top |
| PERFAIR-XS | Square | Side, Oval | Very limited ceiling space (6" min) |
| PERFAIR-XSS | Square | Side, Rect. | Very limited ceiling space (5" min) |

## Integrated Air Volume Dampers



**R**

Perforated damper + air equalizer (Standard)



**MRT2**

Manually operated damper, cable through wall with termination fixture



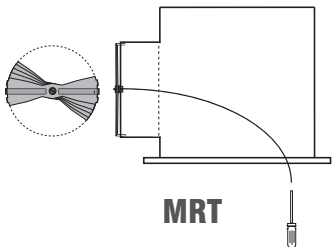
**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through wall with termination fixture



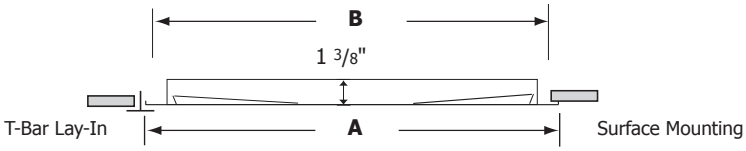
**MRT**

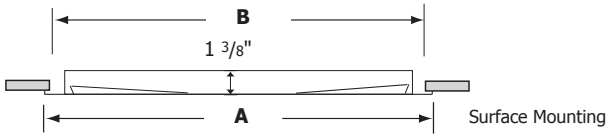
Manually operated damper, cable inside the plenum, adjustment through face

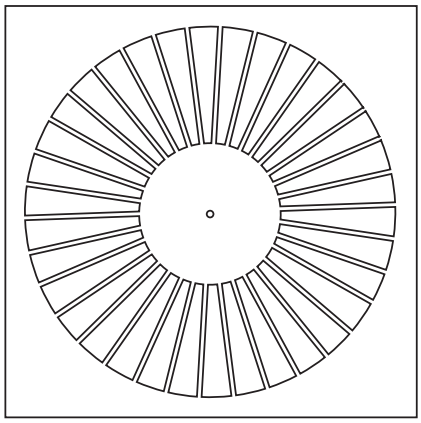
## Dimensions

| | Listed Size (Imperial) | Listed Size (Metric) | A (Imperial) | A (Metric) |
|---|---|---|---|---|
| RXO-S | 16 | 400 | 15 34/64” | 395 |
| | 20 | 500 | 19 31/64” | 495 |
| | 24 | 605 | 23 5/8” | 600 |

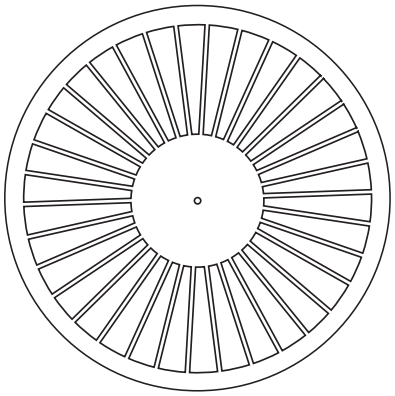
| | Listed Size (Imperial) | Listed Size (Metric) | A (Imperial) | A (Metric) |
|---|---|---|---|---|
| RXO-C | 16 | 400 | 15 3/4" | 400 |
| | 20 | 500 | 19 11/16" | 500 |
| | 25 | 600 | 24 39/64" | 625 |



RXO-S



RXO-C

## Performance Data - RXO-S 16 and RXO-S400 24 + PERFAIR

| | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 |
|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .002 | .006 | .010 | .016 | .022 | .031 |
| Neck Size 8” (200mm) | CFM | 70 | 105 | 140 | 175 | 209 | 244 |
| | Pressure Loss (in.w.g.) | .013 | .028 | .048 | .075 | .105 | .133 |
| | NC | < 15 | < 15 | 21 | 26 | 31 | 36 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-3-5 | 3-4-7 | 4-6-9 | 4-7-11 | 5-8-13 |
| | Throw (ft) - No Ceiling Effect | 1-2-2 | 1-2-4 | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 |

**Performance Notes**

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

## Performance Data - RXO-S 20 and RXO-S500 24 + PERFAIR

| | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 |
| Neck Size 8" (200mm) | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 |
| | Pressure Loss (in.w.g.) | .024 | .037 | .053 | .071 | .092 | .138 | .203 |
| | NC | 11 | 16 | 20 | 25 | 28 | 34 | 39 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-9-13 | 7-11-16 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-12 |

**Performance Notes**

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

## Performance Data - RXO-S 24 (24" x 24" or 605mm x 605mm) + PERFAIR

| | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 |
| Neck Size 10" (250mm) | CFM | 218 | 273 | 327 | 382 | 436 | 545 | 654 |
| | Pressure Loss (in.w.g.) | .015 | .024 | .034 | .046 | .059 | .091 | .106 |
| | NC | 12 | 18 | 23 | 28 | 32 | 38 | 42 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 3-4-6 | 3-5-8 | 4-6-9 | 4-7-11 | 6-9-14 | 6-10-16 |
| | Throw (ft) - No Ceiling Effect | 1-2-4 | 2-3-5 | 2-4-6 | 3-5-7 | 3-5-8 | 4-7-11 | 5-8-12 |

**Performance Notes**

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

## Performance Data - RXO-C 16 (16" dia. or 400 mm dia.) + PERFAIR

| | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 |
|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .002 | .006 | .010 | .016 | .022 | .031 |
| Neck Size 8" (200mm) | CFM | 70 | 105 | 140 | 175 | 209 | 244 |
| | Pressure Loss (in.w.g.) | .013 | .028 | .048 | .075 | .105 | .133 |
| | NC | < 15 | < 15 | 21 | 26 | 31 | 36 |
| | Throw (ft) - Coanda Effect | 1-2-3 | 2-3-5 | 3-4-7 | 4-6-9 | 4-7-11 | 5-8-13 |
| | Throw (ft) - No Ceiling Effect | 1-2-2 | 1-2-4 | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 |

**Performance Notes**

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

## Performance Data - RXO-C 20 (20” dia. or 500 mm dia.) + PERFAIR

| | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 | .090 |
| Neck Size 8” (200mm) | CFM | 140 | 175 | 209 | 244 | 279 | 349 | 419 |
| | Pressure Loss (in.w.g.) | .024 | .037 | .053 | .071 | .092 | .142 | .203 |
| | NC | < 15 | 15 | 20 | 24 | 27 | 34 | 38 |
| | Throw (ft) - Coanda Effect | 2-3-5 | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-9-13 | 7-11-16 |
| | Throw (ft) - No Ceiling Effect | 1-2-3 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-12 |

**Performance Notes**

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

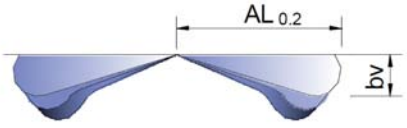
## Performance Data - RXO-C 25 (25” dia. or 625 mm dia.) + PERFAIR

| | Neck (fpm) Velocity | 400 | 500 | 600 | 700 | 800 | 1000 |
|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | .010 | .016 | .022 | .031 | .041 | .062 |
| Neck Size 10” (250mm) | CFM | 218 | 273 | 327 | 382 | 436 | 545 |
| | Pressure Loss (in.w.g.) | .015 | .024 | .034 | .046 | .059 | .091 |
| | NC | < 15 | 17 | 23 | 27 | 31 | 38 |
| | Throw (ft) - Coanda Effect | 2-4-6 | 3-5-7 | 4-6-9 | 4-7-10 | 5-8-12 | 6-10-15 |
| | Throw (ft) - No Ceiling Effect | 2-3-4 | 2-4-5 | 3-4-7 | 3-5-8 | 4-6-9 | 5-7-11 |

**Performance Notes**

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

| Delta T Correction Factors | | |
|---|---|---|
| Δ T (F) | Kh | KI |
| 0 | 0.04 | 1 |
| -2 | 0.045 | 0.945 |
| -4 | 0.051 | 0.905 |
| -6 | 0.055 | 0.87 |
| -8 | 0.06 | 0.84 |
| -10 | 0.067 | 0.82 |
| -12 | 0.077 | 0.785 |
| -15 | 0.088 | 0.78 |




**bv= kh x Throw**

**Throw’(Δ T)= KI x Throw**

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

# RXO Performance Data (continued)

| Induction Ratio | | | | |
|---|---|---|---|---|
| Throw (ft) | i 16” /400 | i 20” /500 | i 24” /605 | i 25” /625 |
| 4 | 12 | 7 | 5 | 5 |
| 6 | 18 | 12 | 9 | 9 |
| 8 | 24 | 15 | 12 | 12 |
| 10 | 29 | 18 | 15 | 15 |
| 15 | 45 | 28 | 24 | 24 |
| 20 | 60 | 38 | 31 | 31 |
| 25 | 76 | 47 | 38 | 38 |
| 30 | 90 | 57 | 47 | 47 |

**induced room air = supplied cfm * i**

induced room air = cfm mixed for given throw

| Temperature Difference Ratio | | | | |
|---|---|---|---|---|
| Throw (ft) | Delta T Ratio 16” /400 | Delta T Ratio 20” /500 | Delta T Ratio 24” /605 | Delta T Ratio 25” /625 |
| 4 | 0.15 | | | |
| 6 | 0.075 | 0.092 | 0.115 | 0.115 |
| 8 | 0.05 | 0.065 | 0.08 | 0.08 |
| 10 | 0.038 | 0.047 | 0.06 | 0.06 |
| 15 | 0.022 | 0.027 | 0.034 | 0.034 |
| 20 | | 0.018 | 0.024 | 0.024 |
| 25 | | | 0.017 | 0.017 |

**Delta T (Throw) = Delta T (Supply) * Delta T Ratio**

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

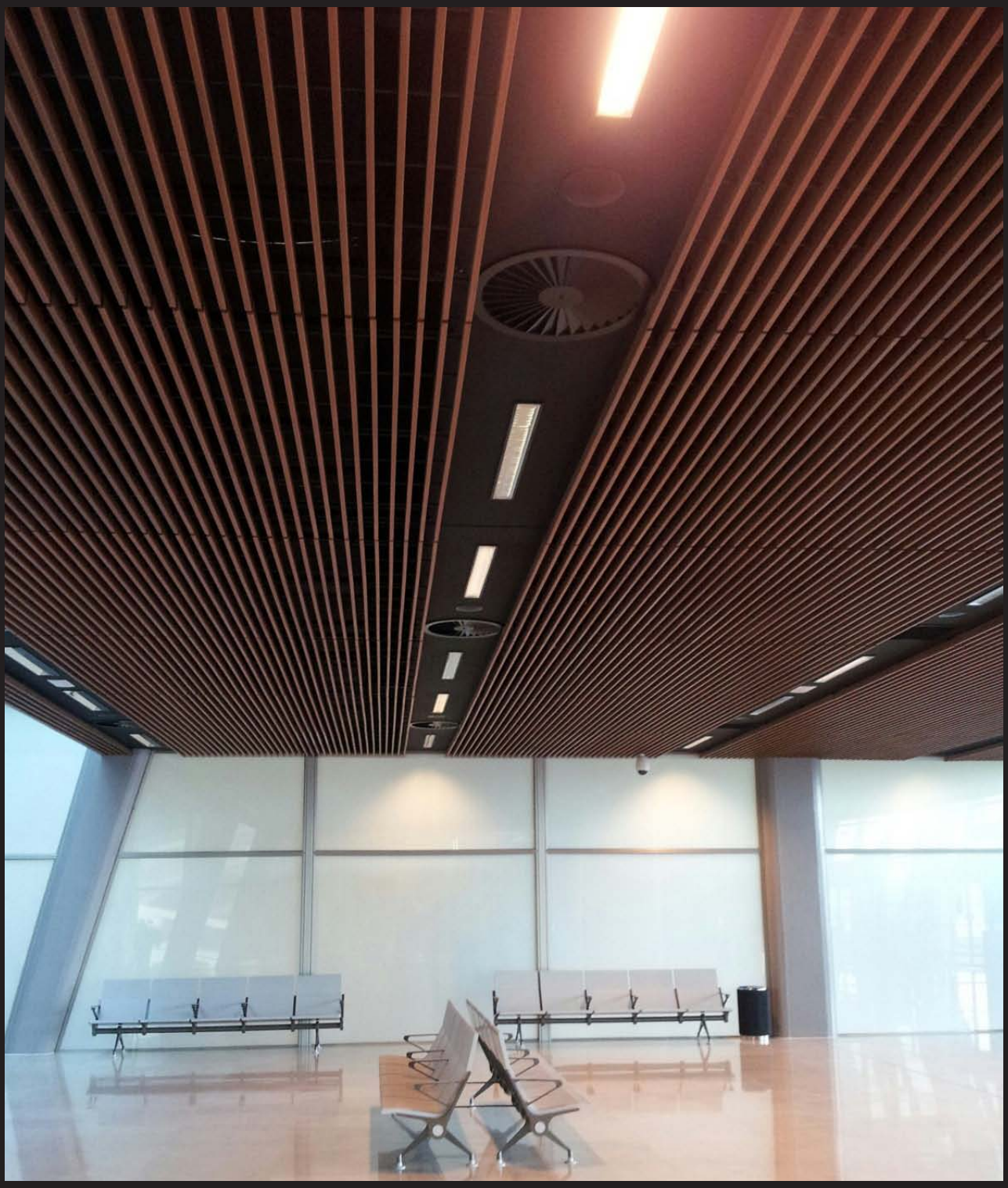
# How to Specify RXO

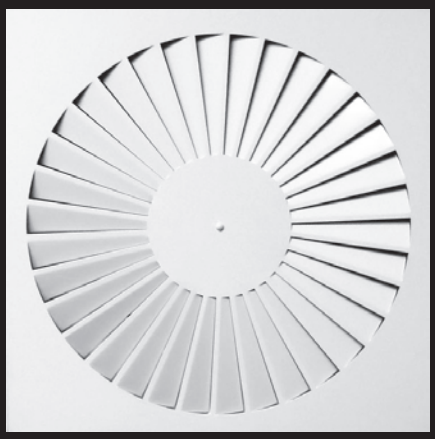
Supply and mounting of fixed air pattern swirl diffuser RXO, constructed from galvanized steel and powder coated in white M9016. To be supplied with matching PERFAIR high performance plenum. By EffectiV HVAC / MADEL.

# How to Order RXO Series

| RXO- | S | 24 | + PERFAIR-ST | 24 | 10 |
|---|---|---|---|---|---|

| | | |
|---|---|---|
| **Neck Diameter** | | 6” 8”, 10” or 12” D |
| **Face Dimension** | | Match Product Face |
| **Plenum** | **PERFAIR-CS** | Round, Side Connection |
| | **PERFAIR-CT** | Round, Top Connection |
| | **PERFAIR-SCT** | Cynlindrical for Sq. Face, Top Conn. |
| | **PERFAIR-SS** | Square, Side Connection |
| | **PERFAIR-ST** | Square, Top Connection |
| **Face Dimension** | **16** | 16” Diameter Face |
| | **20** | 20”x20” or 20” Dia. Face |
| | **24** | 24”x24” Square Face |
| | **25** | 25” Diameter Face |
| | **400** | 400 mm Diameter Face |
| | **500** | 500x500 mm or 500 mm Dia. Face |
| | **605** | 605x605 mm Square Face |
| | **625** | 625 mm Diameter Face |
| **Model** | **C** | Round |
| | **S** | Square |





# TWIST

## Compact Stamped Swirl Diffusers

EFFECTIV™

Nov 15 2020

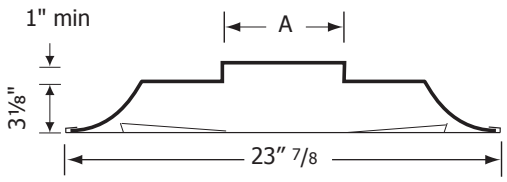
# TWIST SERIES
## Compact Stamped Swirl Diffusers



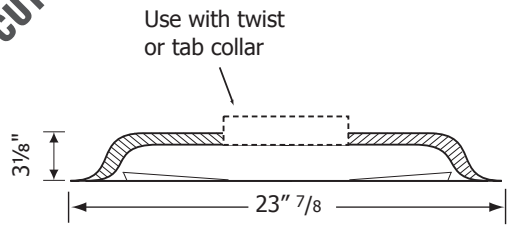
TWIST

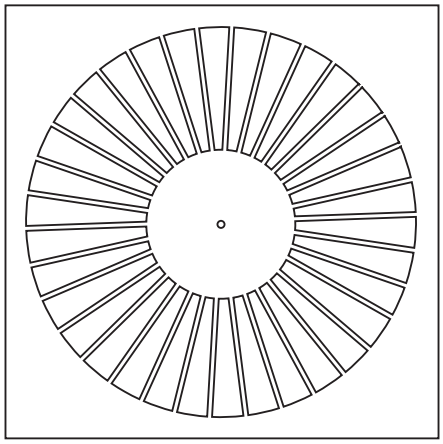
- Fixed swirl diffusion pattern
- Fixed integrated backpan with die-drawn collar
- Heavy-gauge steel or aluminum construction
- Available with insulation and drawn collar (TWIST-IR6)
- TWIST-CUT has pre-scored R6 insulated back to cut your own neck (one size fits all)
- Ideal for t-bar lay-in
- Ideal for heating and cooling applications
- R6 fiberglass insulation complies with A.S.T.M. E84 flame and smoke test

TWIST




TWIST-CUT



TWIST series diffusers by EffectiV HVAC™ supply air in a fixed 360° radial swirl pattern, mixing the air more evenly and efficiently than standard diffusers. The TWIST diffuser comes with its own integrated backpan and is very compact. It can be viewed as an economical alternative to the RXO-S diffuser.

TWIST diffusers are ideal for VAV applications and applications which require rapid temperature and velocity equalization of the mixed air mass above the zone of occupancy.

TWIST-CUT diffusers are supplied with pre-scored R6 molded fiberglass plenum for a one-size-fits-all approach.

## TWIST Performance Data

| Neck Size (inches) | Neck (fpm) Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Velocity Pressure (H2O) | | | .010 | .016 | .022 | .031 | .041 | .062 | .090 | .122 |
| 6 | CFM | 34 | 59 | 79 | 98 | 118 | 137 | 157 | 196 | 236 | 275 |
| | Pressure Loss (in.w.g.) | 0.004 | 0.011 | 0.02 | 0.04 | 0.06 | 0.07 | 0.10 | 0.13 | 0.21 | 0.31 |
| | NC | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | 20 | < 25 | < 35 | < 40 |
| | Throw (ft) | 1-1-3 | 1-2-4 | 2-3-5 | 2-3-6 | 3-4-6 | 3-5-7 | 3-4-7 | 4-6-8 | 4-7-10 | 5-7-10 |
| 8 | CFM | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 349 | 419 | 489 |
| | Pressure Loss (in.w.g.) | 0.008 | 0.016 | 0.03 | 0.05 | 0.07 | 0.09 | 0.12 | 0.18 | 0.26 | 0.33 |
| | NC | < 20 | < 20 | < 20 | < 20 | < 20 | < 30 | < 35 | < 40 | > 40 | > 40 |
| | Throw (ft) | 1-2-3 | 2-3-4 | 3-3-5 | 3-3-7 | 3-4-7 | 3-5-10 | 4-5-9 | 5-7-11 | 7-7-14 | 8-9-12 |
| 10 | CFM | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 | 654 | 764 |
| | Pressure Loss (in.w.g.) | 0.01 | 0.02 | 0.04 | 0.07 | 0.11 | 0.15 | 0.19 | 0.30 | 0.43 | 0.50 |
| | NC | < 20 | < 20 | < 20 | < 25 | < 30 | 35 | < 40 | > 40 | > 40 | > 40 |
| | Throw (ft) | 1-2-4 | 2-3-6 | 3-4-8 | 4-5-10 | 4-6-10 | 5-8-12 | 6-8-12 | 8-9-13 | 8-10-14 | 9-11-16 |
| 12 | CFM | 157 | 239 | 314 | 393 | 471 | 550 | 628 | 785 | 942 | |
| | Pressure Loss (in.w.g.) | 0.024 | 0.05 | 0.10 | 0.14 | 0.22 | 0.27 | 0.36 | 0.56 | 0.78 | |
| | NC | < 20 | 21 | 25 | < 35 | 35 | 40 | 45 | > 45 | > 45 | |
| | Throw (ft) | 2-3-5 | 3-4-8 | 4-6-10 | 5-6-11 | 5-8-14 | 6-9-14 | 7-9-16 | 10-12-16 | 11-12-19 | |

**Performance Notes**

- NC Value based on 10 db room attenuation.
- Throw Values are based on isothermal air and terminal velocities of **150 fpm, 100 fpm and 50 fpm** respectively.

## Accessories



**OBD**

Opposed Blade Damper



**RSBD**

Radial Sliding Blade Damper

## How to Specify TWIST

Supply and mounting of steel stamped swirl diffuser model TWIST with integral plenum and drawn collar, square dimension 24”x24”. Constructed from heavy gauge galvanized steel, powder coated in white RAL9016. By EffectiV HVAC.

## How to Specify TWIST-CUT

Supply and mounting of steel stamped swirl diffuser model TWIST with integral plenum and R6-rated molded fiberglass back pre-scored for 6” to 12” collars, square dimension 24”x24”. Constructed from heavy gauge galvanized steel, powder coated in white RAL9016. By EffectiV HVAC.

## How to Specify TWIST-ALU

Supply and mounting of aluminum stamped swirl diffuser model TWIST with integral plenum and drawn collar, square dimension 24”x24”. Constructed from heavy gauge aluminum, powder coated in white RAL9016. By EffectiV HVAC.

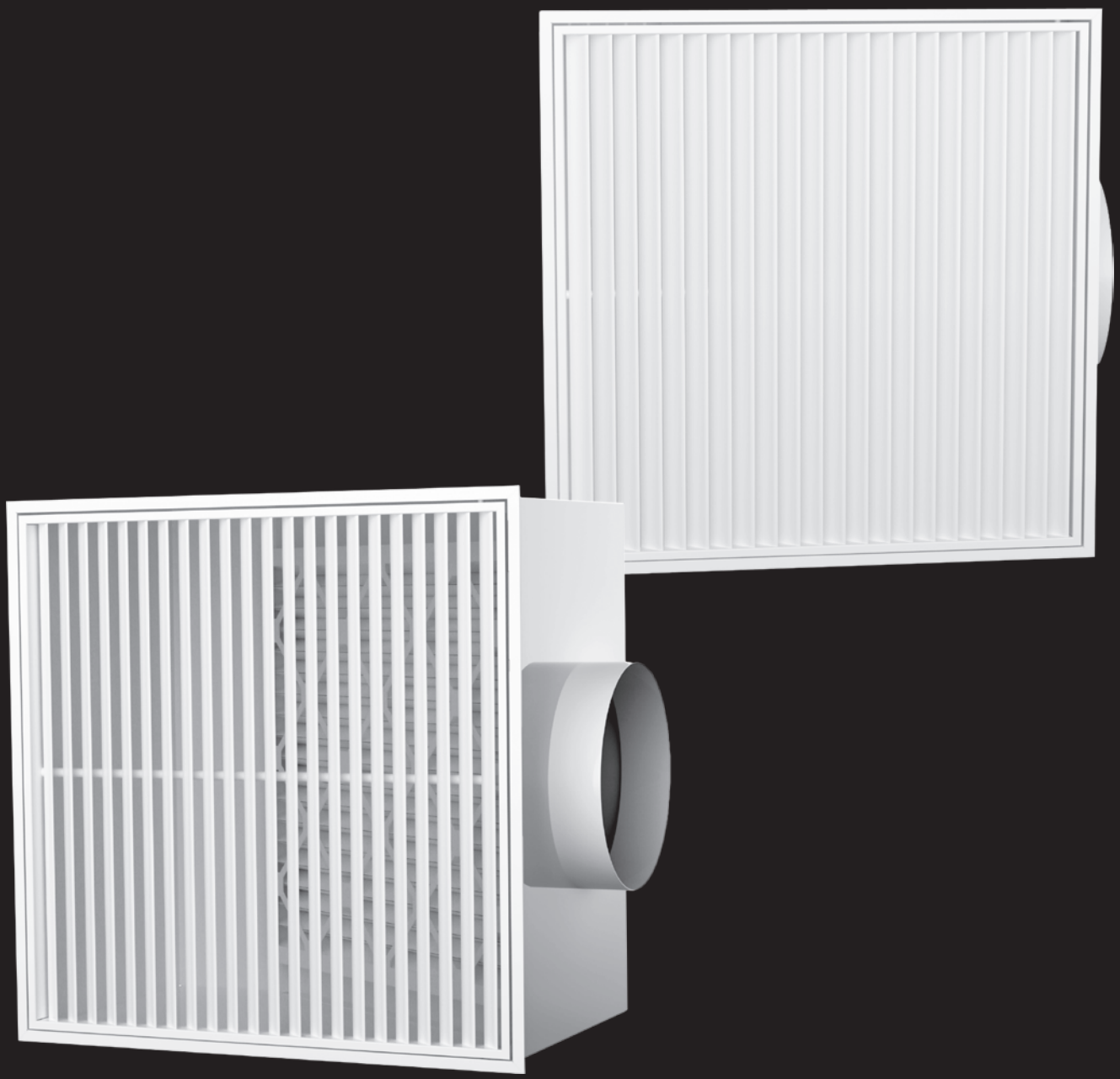
## How to Specify TWIST-ALU-CUT

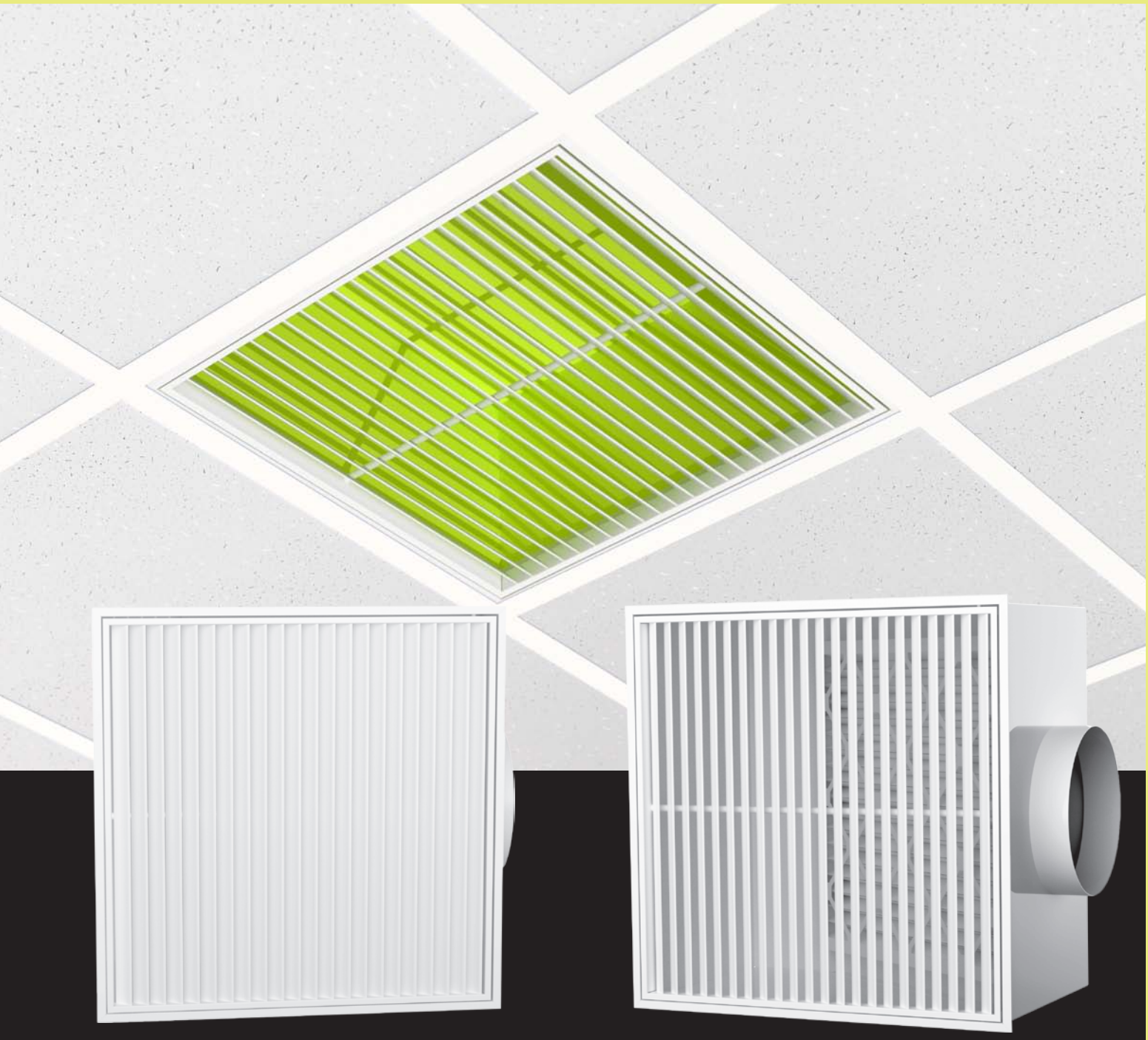
Supply and mounting of aluminum stamped swirl diffuser model TWIST with integral plenum and R6-rated molded fiberglass back pre-scored for 6” to 12” collars, square dimension 24”x24”. Constructed from heavy gauge aluminum, powder coated in white RAL9016. By EffectiV HVAC.

## How to Order TWIST Series

| TWIST | -IR6 | -OBD | 24 | 08 | | |
|---|---|---|---|---|---|---|
| | | | | Neck Diameter | 06 | 6”D |
| | | | | | 08 | 8”D |
| | | | | | 10 | 10”D |
| | | | | | 12 | 12”D |
| | | | Face Dimension | | 24 | 24” x 24” |
| | | Damper | | | OBD | Opposed Blade Damper |
| | | | | | RSBD | Radial Sliding Blade Damper |
| | Insulation | | | | IR6 | R6 molded fiberglass |
| Model | | | | | TWIST | Steel, drawn dollar |
| | | | | | TWIST-CUT | Steel, R6 Molded Fiberglass Back |
| | | | | | TWIST-ALU | Aluminum, drawn dollar |
| | | | | | TWIST-ALUCUT | Alu, R6 Molded Fiberglass Back |

# AIR RETURNS





# YIN / FLYIN

## Architectural Ceiling Returns

EFFECTIV™

July 12 2021

# YIN/FLYIN SERIES
## Architectural Ceiling Returns

- Duct connection is completely invisible
- FLYIN includes a very discreet filter, invisible from most angles
- Available with inside color matching face, or with a different RAL color
- Easy to use and secure removable hinged face with magnetic locks
- Available with R6 thermal insulation
- Works with all types of ceilings
- Heavy-gauge steel and aluminum construction



**YIN**

| Imperial Dim | Metric Dim | Free Area (sqf) | Max cfm |
|---|---|---|---|
| 24” x 24” | 610 x 610 mm | 2.357 | 1800 |

YIN and FLYIN Architectural Ceiling Returns combine discretion and efficiency in order to answer the needs of both architects and engineers.

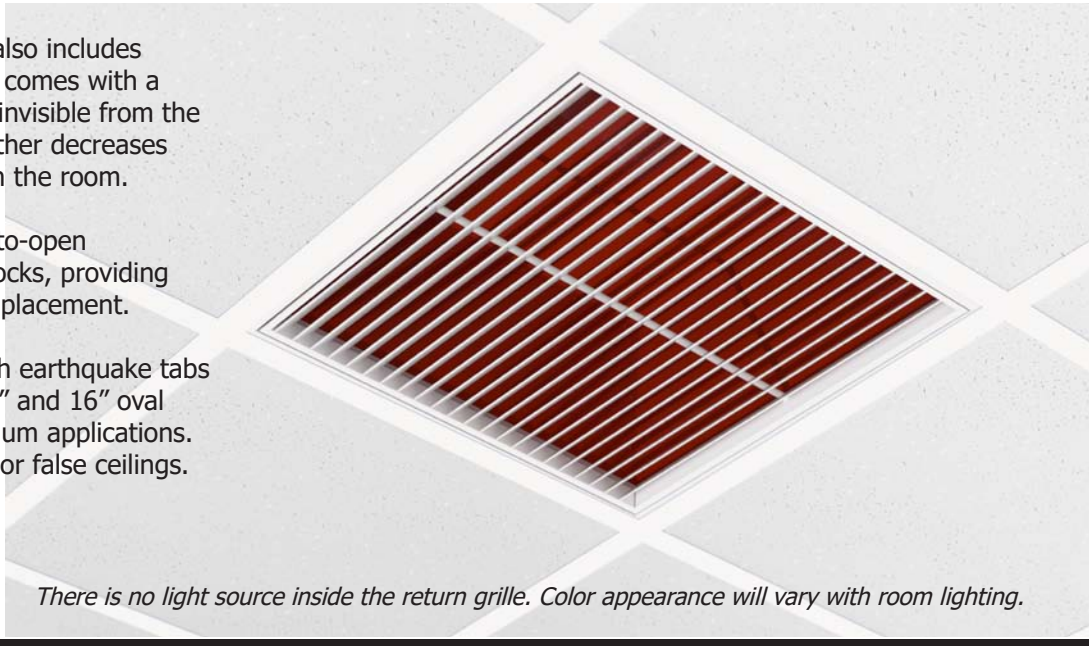
In order to exhaust the air effectively and quietly, ceiling returns must be designed with the largest unobstructed opening possible. This, however, comes with the unappealing result of seeing the rigid metal or flexible duct connection behind the face.

The YIN and FLYIN Architectural Ceiling Returns solve the appearance problem without compromising on efficiency. Powder coated with either the same or different color for the face and on the inside, both architectural returns use a 45-degree angled blades return grille face. This angled blade feature allows visibility to the painted wall opposite to the duct connection. The result is a discreet look hiding the duct from every visible angle and a return grille that blends in with its environment. YIN and FLYIN Architectural Returns can either blend discreetly with the ceiling when using the standard white-on-white finish, or add depth to the ceiling with a white face and an interior color matching a dominant color in the room.

FLYIN Architectural Filter Return Grille also includes a support for 20” x 20” x 2” filters, and comes with a MERV-9 filter. Although not completely invisible from the face, the filter is set in a way which further decreases the angles from where it can be seen in the room.

Both products have a secure and easy-to-open removable hinged face with magnetic locks, providing easy access for cleaning and/or filter replacement.

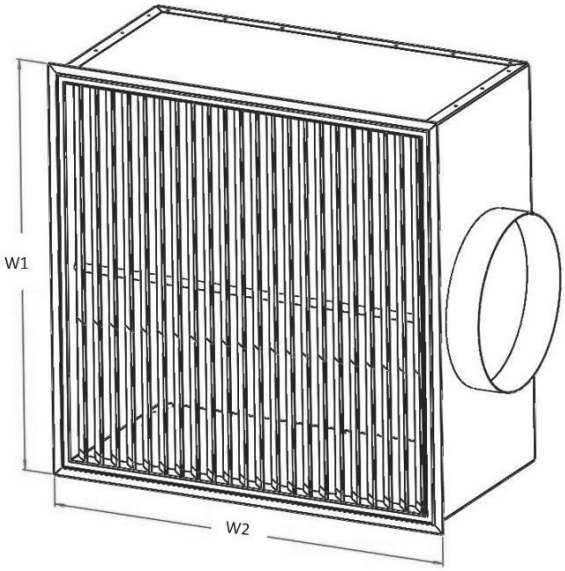
YIN and FLYIN both come standard with earthquake tabs and are available with 10” round, or 12” and 16” oval collars, or without collar for ceiling plenum applications. They are compatible with open, closed or false ceilings.

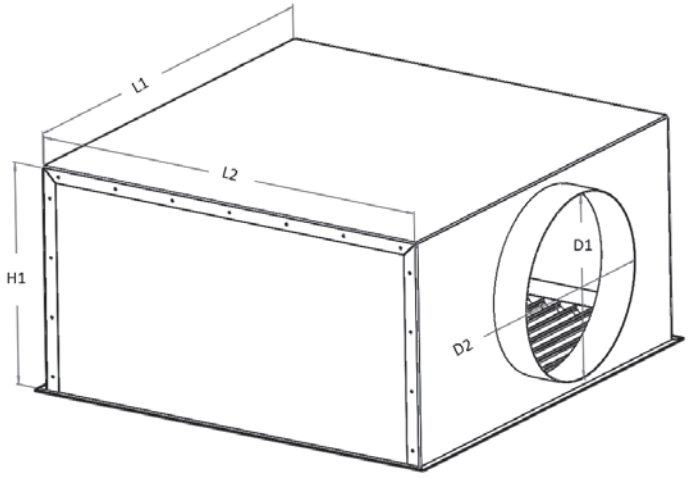


*There is no light source inside the return grille. Color appearance will vary with room lighting.*

## Dimensions - Ducted Returns

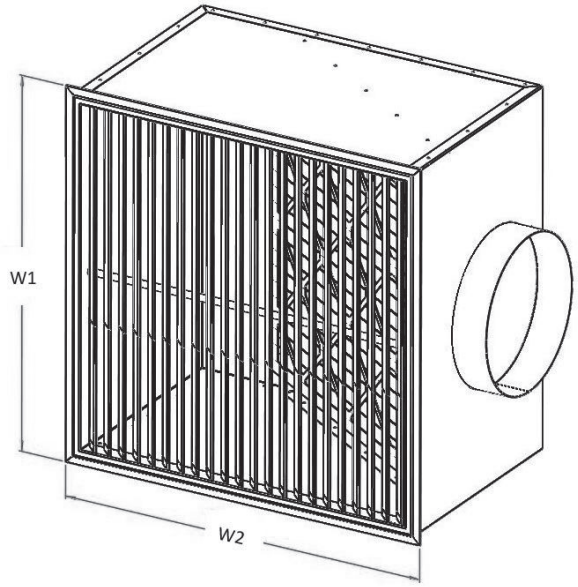
### YIN

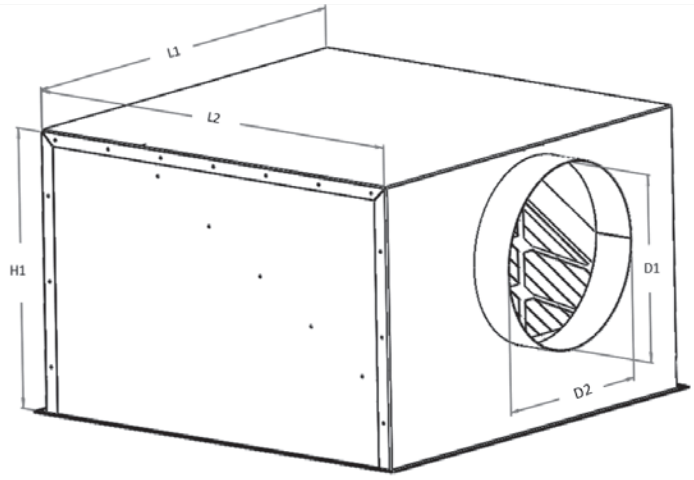



| Model | W1 | W2 | L1 | L2 | H1 | D1 | D2 |
|---|---|---|---|---|---|---|---|
| YIN 2410 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 11″ 7/8 | 9″ 7/8 | 9″ 7/8 |
| YIN 2412 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 11″ 7/8 | 7″ 7/8 | 15″ 7/8 |
| YIN 2416 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 11″ 7/8 | 9″ 7/8 | 21″ 7/8 |

### FLYIN

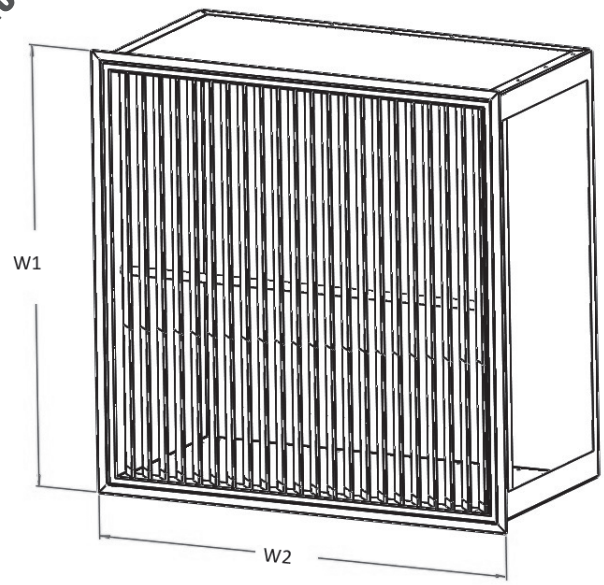


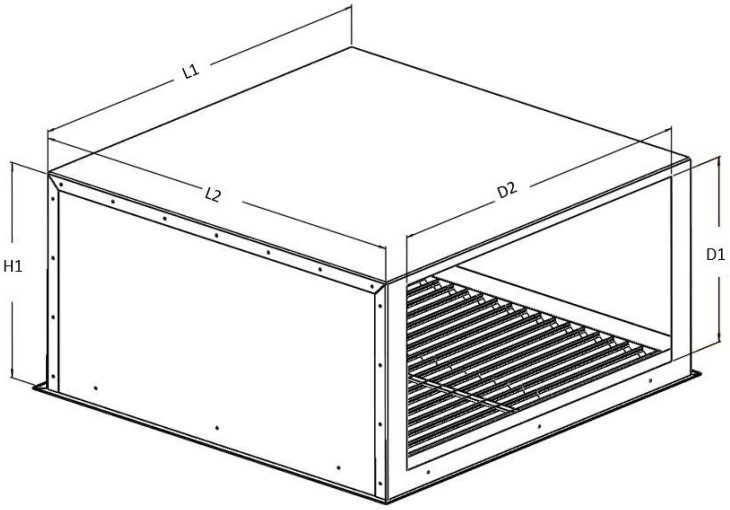




| Model | W1 | W2 | L1 | L2 | H1 | D1 | D2 |
|---|---|---|---|---|---|---|---|
| FLYIN 2410 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 14″ 7/8 | 9″ 7/8 | 9″ 7/8 |
| FLYIN 2412 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 14″ 7/8 | 7″ 7/8 | 15″ 7/8 |
| FLYIN 2416 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 14″ 7/8 | 9″ 7/8 | 21″ 7/8 |

# Dimensions - Non Ducted Returns for Ceiling Plenum

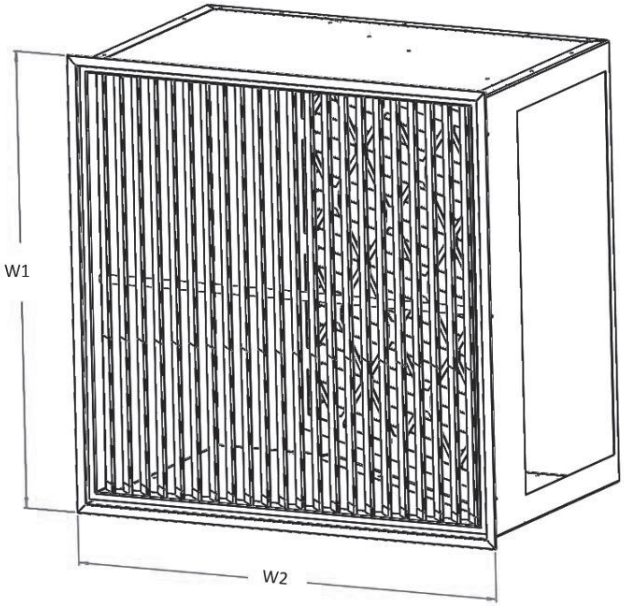
YIN 2400

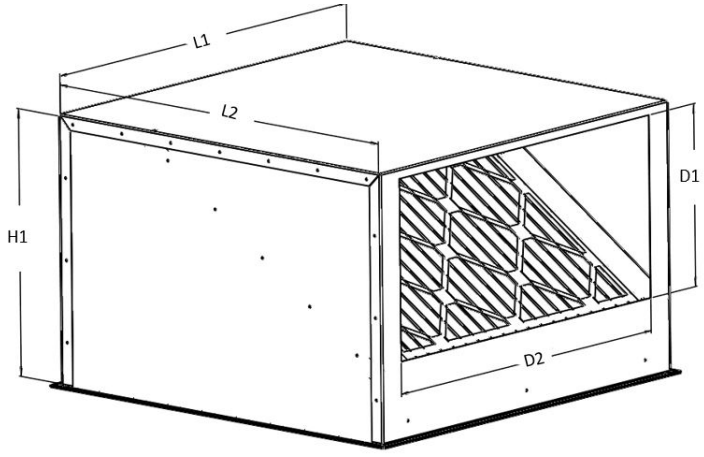



| Model | W1 | W2 | L1 | L2 | H1 | D1 | D2 |
|---|---|---|---|---|---|---|---|
| YIN 2400 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 11″ 7/8 | 10″ | 20″ |

FLYIN 2400




| Model | W1 | W2 | L1 | L2 | H1 | D1 | D2 |
|---|---|---|---|---|---|---|---|
| FLYIN 2400 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 14″ 7/8 | 10″ | 20″ |

## YIN Performance Data

| CFM | 300 | 400 | 500 | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 |
|---|---|---|---|---|---|---|---|---|---|---|
| NC | < 15 | < 15 | < 15 | < 15 | < 15 | < 15 | < 15 | < 20 | < 20 | < 25 |
| Pressure Loss (in.w.g.) | 0.002 | 0.003 | 0.004 | 0.006 | 0.01 | 0.015 | 0.021 | 0.03 | 0.037 | 0.045 |

**Performance Notes**

- NC Value based on 10 db room attenuation.

## FLYIN Performance Data

For FLYIN use the same performance data as YIN and add filter pressure drop.

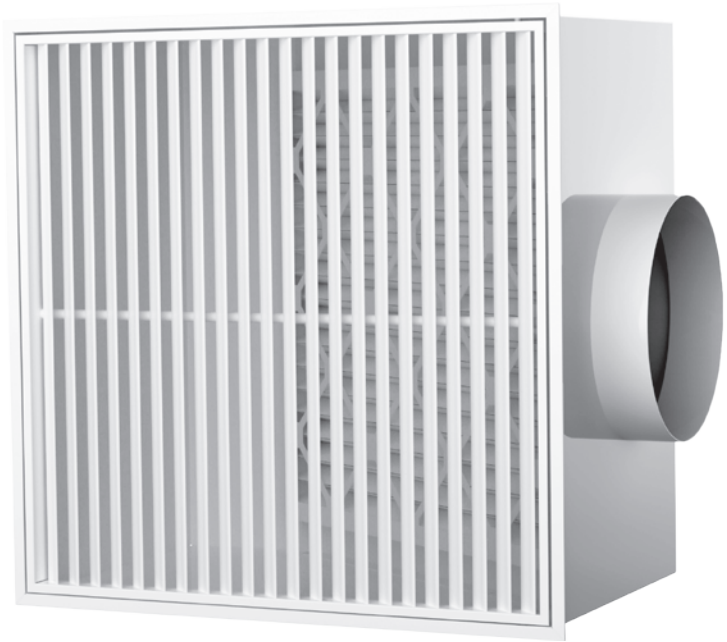
Below is the initial pressure drop table for EffectiV HVAC's standard MERV-9 filter, also used in UV Diffusers. Filters from other manufacturers will have different performance, please use your filter manufacturer's performance data.

| CFM | 492 | 984 | 1476 | 1968 |
|---|---|---|---|---|
| Initial Pressure Loss (in.w.g.) | 0.021 | 0.063 | 0.125 | 0.208 |

The Pressure Drop vs. Dust Fed table below indicates EffectiV HVAC's MERV-9 filter capacity to perform while retaining dust.

| Dust Fed (g) | 0 | 135.3 | 178.3 | 204.5 | 217.2 |
|---|---|---|---|---|---|
| Pressure Loss (in.w.g.) @ 1968 cfm | 0.208 | 0.531 | 0.854 | 1.177 | 1.500 |

Final Resistance at 1968 cfm = 1.5 **in.w.g.**



FLYIN

## How to Specify YIN

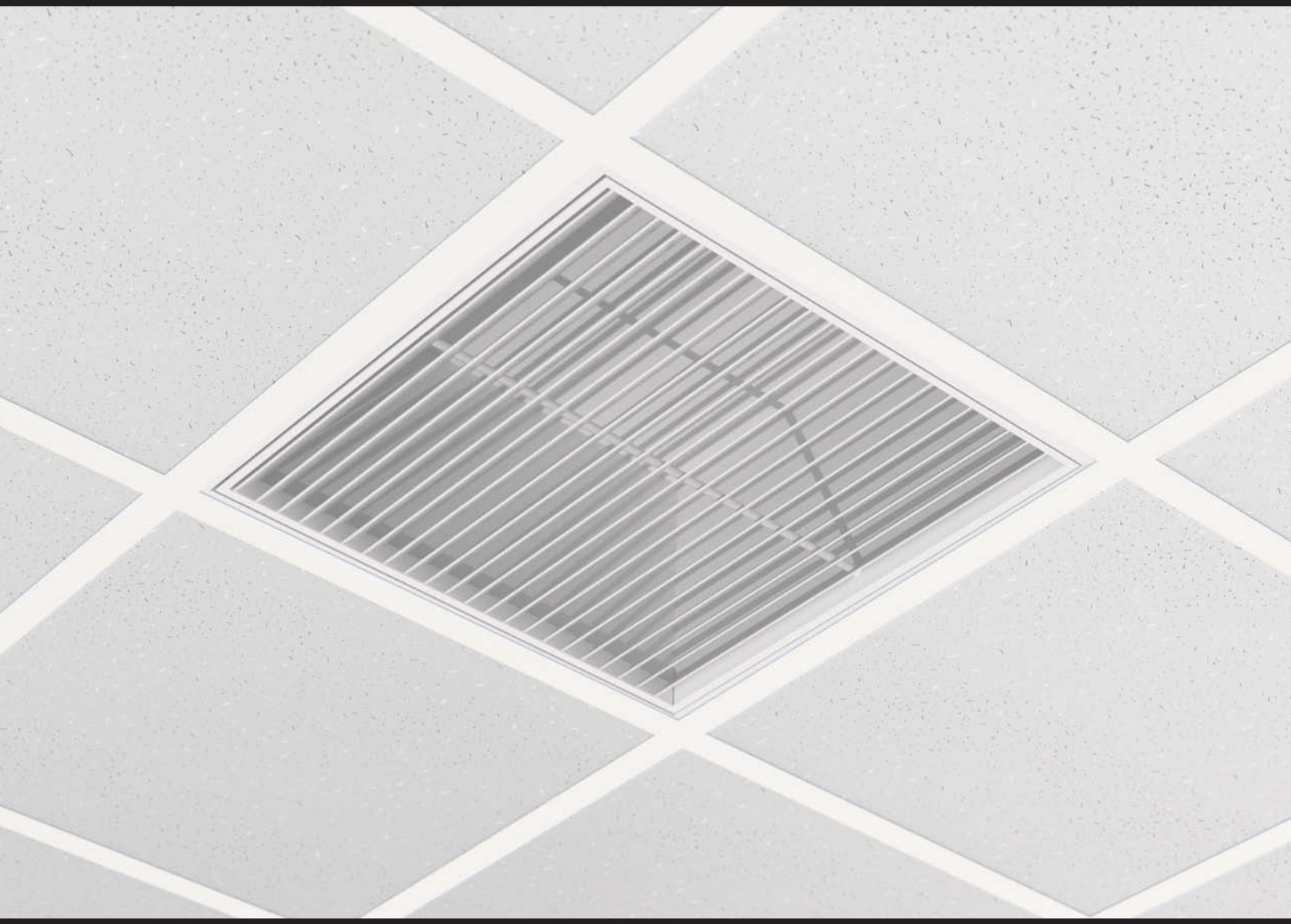
Supply and mounting of YIN Architectural Ceiling Return. Dimension 24x24 inches. Constructed from galvanized steel plenum and aluminum 45-degree blades return grille face. The hinged face is removable and secured by magnetic locks. The side duct connection is completely hidden and invisible from the face. Powder coated with the same or different color on the inside and on the outside. Plenum must have earthquake tabs to secure the product to the building structure. By EffectiV HVAC Inc.

## How to Specify FLYIN

Supply and mounting of FLYIN Architectural Ceiling Filter Return. Dimension 24x24 inches. Constructed from galvanized steel plenum and aluminum 45-degree blades return grille face. The hinged face is removable and secured by magnetic locks. The side duct connection is completely hidden and invisible from the face. The 2" filter is secured by 4 spring clips and positioned in a way to minimize its visibility from the face. Powder coated with the same or different color on the inside and on the outside. Plenum must have earthquake tabs to secure the product to the building structure. Shall be supplied 2" MERV-9 filter. By EffectiV HVAC Inc.

## How to Order YIN/FLYIN Series

| FLYIN | -IR6 | -IW | 2410 | /M9016 | | |
|---|---|---|---|---|---|---|
| | | | | **Face Color** | **M9016** | Face in standard white M9016 |
| | | | | | **RAL** | Face in custom RAL color |
| | | | **Dimension** | | **2400** | 20" x 10" rectangular opening, no collar |
| | | | | | **2410** | 10" round collar |
| | | | | | **2412** | 12" oval collar |
| | | | | | **2416** | 16" oval collar |
| | | **Interior Color** | | | **IW** | Interior in standard white M9016 |
| | | | | | **IRxxxx** | Interior in custom RAL color |
| | **Insulation** | | | | **IR6** | R6 Thermal Insulation |
| **Model** | | | | | **YIN** | Return |
| | | | | | **FLYIN** | Filter Return |



EFFECTIV
HVAC
™

SUBMITTAL DRAWINGS

# DIFFUSERS & RETURNS

EFFECTIV™

## AX6-MA Series

### Manually Adjustable Blades Round Swirl Diffusers



**AX6-MA**

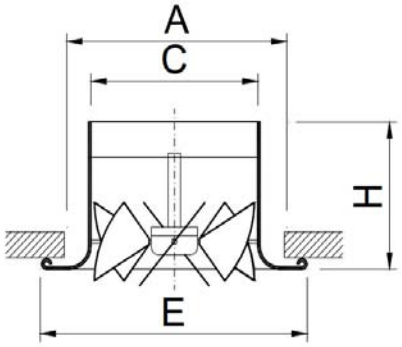
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum with steel blades.

**Air Pattern |** 360° diffusion with horizontal swirl to downward flow, manual synchronous adjustment of the blades.

**Ceiling Types |** Open and Closed.

| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | **Model** | **Duct** | **A** | **C** | **E** | **H** |
| | **AX6-MA 10** | 10 | 11 13/16 | 9 3/4 | 14 11/64 | 7 61/64 |
| | **AX6-MA 12** | 12.5 | 15 3/4 | 12 21/64 | 18 17/64 | 8 55/64 |
| | **AX6-MA 16** | 16 | 19 11/16 | 15 25/32 | 20 3/64 | 9 27/32 |
| | **AX6-MA 20** | 20 | 24 13/32 | 19 9/16 | 27 11/64 | 12 3/64 |
| | **AX6-MA 25** | 25 | 30 45/64 | 24 11/16 | 34 1/4 | 13 25/32 |

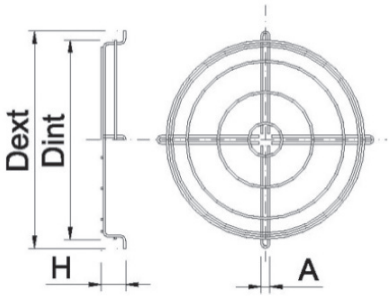



All dimensions in inches (in)

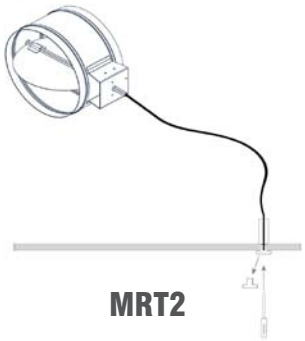
| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | **Model** | **Dext** | **Dint** | **A** | **H** |
| | **CH6 10** | 13 25/32 | 11 13/16 | 35/64 | 1 37/64 |
| | **CH6 12** | 17 23/32 | 15 3/4 | 35/64 | 1 37/64 |
| | **CH6 16** | 21 21/32 | 19 11/16 | 43/64 | 1 31/32 |
| | **CH6 20** | 25 25/32 | 23 5/8 | 43/64 | 3 5/32 |
| | **CH6 25** | 33 55/64 | 31 7/64 | 25/32 | 3 35/64 |

All dimensions in inches

**CH6 Security Grille**

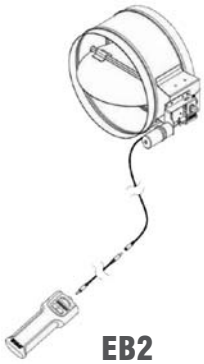


## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for AX6 diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

# AX6-MA Series

## Manually Adjustable Blades Round Swirl Diffusers



**AX6-MA**
by MADEL®

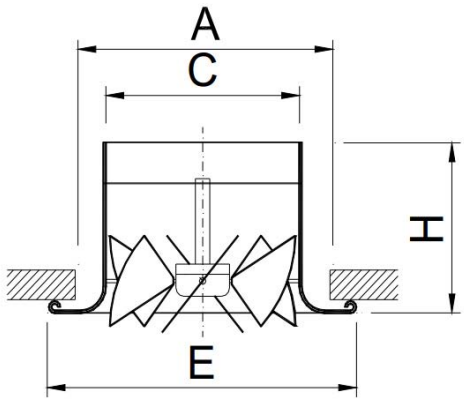
**Material |** Powder coated heavy gauge spun aluminum with steel blades.

**Air Pattern |** 360° diffusion with horizontal swirl to downward flow, manual synchronous adjustment of the blades.

**Ceiling Types |** Open and Closed.

| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H |
| | AX6-MA 250 | 250 | 300 | 248 | 360 | 202 |
| | AX6-MA 315 | 315 | 400 | 313 | 464 | 225 |
| | AX6-MA 400 | 400 | 500 | 401 | 560 | 250 |
| | AX6-MA 500 | 500 | 620 | 497 | 690 | 306 |
| | AX6-MA 630 | 630 | 780 | 627 | 870 | 350 |

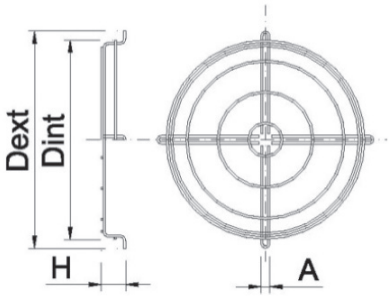
All dimensions in millimeters (mm)



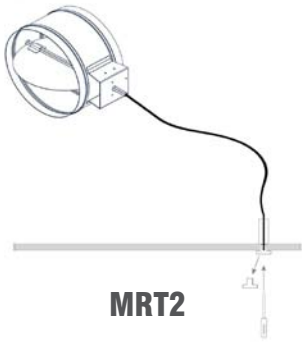

| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Dext | Dint | A | H |
| | CH6 250 | 350 | 300 | 40 | 14 |
| | CH6 315 | 450 | 400 | 40 | 14 |
| | CH6 400 | 550 | 500 | 50 | 17 |
| | CH6 500 | 655 | 600 | 80 | 17 |
| | CH6 630 | 860 | 790 | 90 | 20 |

All dimensions in millimeters (mm)

**CH6 Security Grille**



## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for AX6 diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## AX6-MA-MOD Series

### Manually Adjustable Blades Round Swirl Diffusers

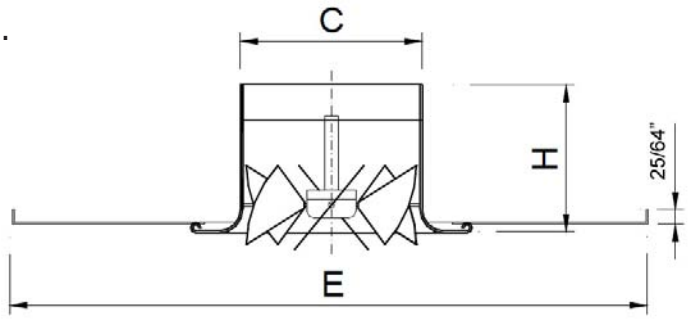


**AX6-MA-MOD**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum with steel blades.

**Air Pattern |** 360° diffusion with horizontal swirl to downward flow, manual synchronous adjustment of the blades.

**Ceiling Types |** Open and Closed.



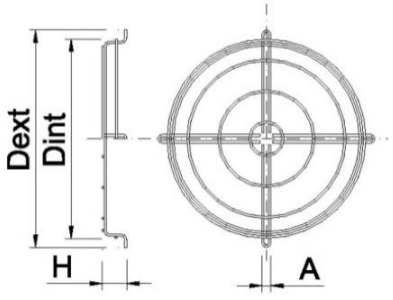

| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H |
| | **AX6-MA 10** | 10 | 11 13/16 | 9 3/4 | 14 11/64 | 7 61/64 |
| | **AX6-MA 12** | 12.5 | 15 3/4 | 12 21/64 | 18 17/64 | 8 55/64 |
| | **AX6-MA 16** | 16 | 19 11/16 | 15 25/32 | 20 3/64 | 9 27/32 |
| | **AX6-MA 20** | 20 | 24 13/32 | 19 9/16 | 27 11/64 | 12 3/64 |
| | **AX6-MA 25** | 25 | 30 45/64 | 24 11/16 | 34 1/4 | 13 25/32 |

All dimensions in inches (in)

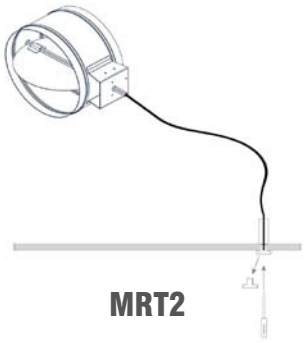
| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Dext | Dint | A | H |
| | **CH6 10** | 13 25/32 | 11 13/16 | 35/64 | 1 37/64 |
| | **CH6 12** | 17 23/32 | 15 3/4 | 35/64 | 1 37/64 |
| | **CH6 16** | 21 21/32 | 19 11/16 | 43/64 | 1 31/32 |
| | **CH6 20** | 25 25/32 | 23 5/8 | 43/64 | 3 5/32 |
| | **CH6 25** | 33 55/64 | 31 7/64 | 25/32 | 3 35/64 |

All dimensions in inches

**CH6 Security Grille**



## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for AX6 diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

## AX6-MA-MOD Series

### Manually Adjustable Blades Round Swirl Diffusers

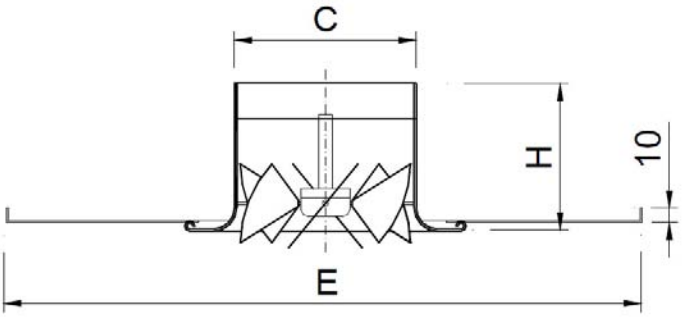


**AX6-MA-MOD**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum with steel blades.

**Air Pattern |** 360° diffusion with horizontal swirl to downward flow, manual synchronous adjustment of the blades.

**Ceiling Types |** Open and Closed.



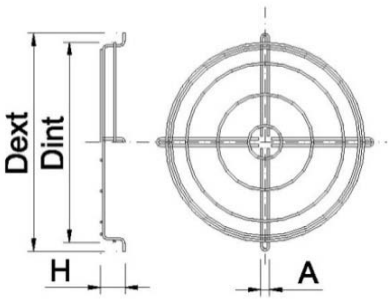

| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H |
| | **AX6-MA 250** | 250 | 300 | 248 | 360 | 202 |
| | **AX6-MA 315** | 315 | 400 | 313 | 464 | 225 |
| | **AX6-MA 400** | 400 | 500 | 401 | 560 | 250 |
| | **AX6-MA 500** | 500 | 620 | 497 | 690 | 306 |
| | **AX6-MA 630** | 630 | 780 | 627 | 870 | 350 |

All dimensions in millimeters (mm)

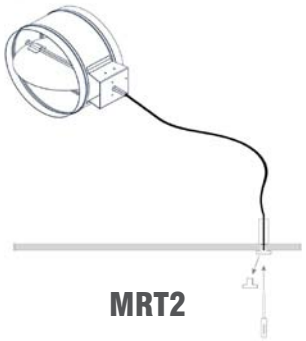
| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Dext | Dint | A | H |
| | **CH6 250** | 350 | 300 | 40 | 14 |
| | **CH6 315** | 450 | 400 | 40 | 14 |
| | **CH6 400** | 550 | 500 | 50 | 17 |
| | **CH6 500** | 655 | 600 | 80 | 17 |
| | **CH6 630** | 860 | 790 | 90 | 20 |

All dimensions in millimeters (mm)

### CH6 Security Grille



## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for AX6 diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

## AX6-ACTIF Series
### Thermodynamic Aluminum Round Swirl Diffuser

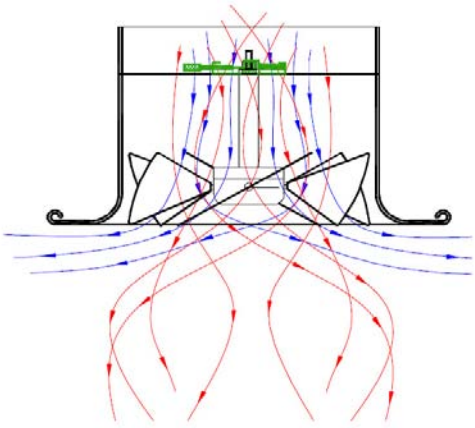


**AX6-ACTIF**
by MADEL®
ACTIF

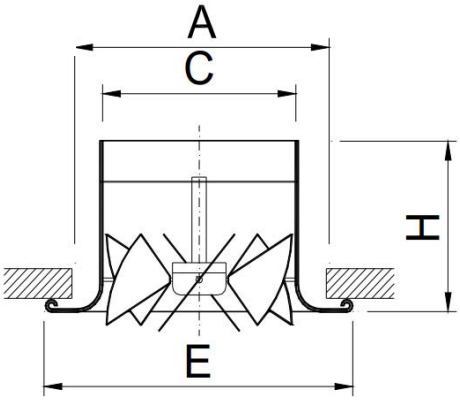
**Material |** Powder coated heavy gauge spun aluminum with steel blades.

**Air Pattern |** 360° diffusion with horitonztal swirl to downward flow adjustment, autonomously adjusted by means of a thermodynamic piston.

**Ceiling Types |** Open and Closed.



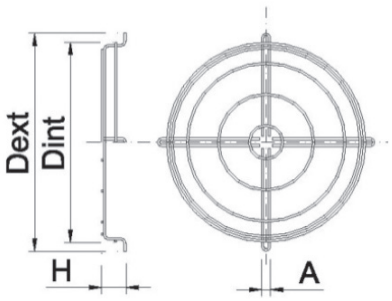
| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H |
| | AX6-ACTIF 10 | 10 | 11 13/16 | 9 3/4 | 14 11/64 | 7 61/64 |
| | AX6-ACTIF 12 | 12.5 | 15 3/4 | 12 21/64 | 18 17/64 | 8 55/64 |
| | AX6-ACTIF 16 | 16 | 19 11/16 | 15 25/32 | 20 3/64 | 9 27/32 |
| | AX6-ACTIF 20 | 20 | 24 13/32 | 19 9/16 | 27 11/64 | 12 3/64 |
| | AX6-ACTIF 25 | 25 | 30 45/64 | 24 11/16 | 34 1/4 | 13 25/32 |




All dimensions in inches

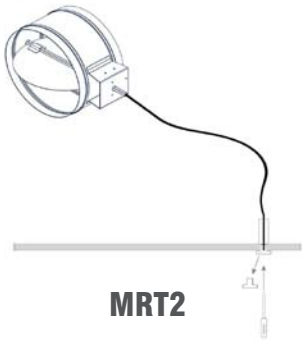
### CH6 Security Grille

| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Dext | Dint | A | H |
| | CH6 10 | 13 25/32 | 11 13/16 | 35/64 | 1 37/64 |
| | CH6 12 | 17 23/32 | 15 3/4 | 35/64 | 1 37/64 |
| | CH6 16 | 21 21/32 | 19 11/16 | 43/64 | 1 31/32 |
| | CH6 20 | 25 25/32 | 23 5/8 | 43/64 | 3 5/32 |
| | CH6 25 | 33 55/64 | 31 7/64 | 25/32 | 3 35/64 |




All dimensions in inches

## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for AX6 diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

## AX6-ACTIF Series

### Thermodynamic Aluminum Round Swirl Diffuser



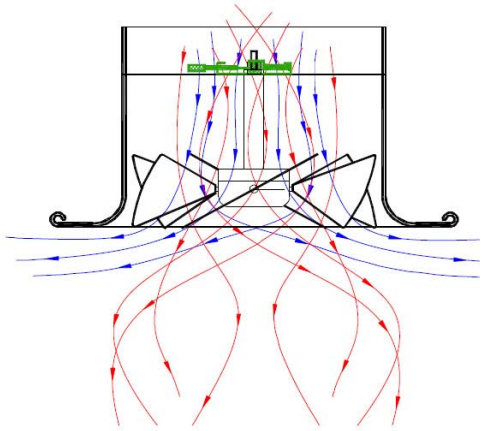
AX6-ACTIF
by MADEL®

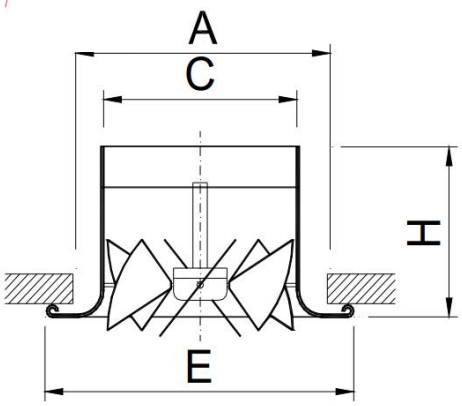
ACTIF

**Material |** Powder coated heavy gauge spun aluminum with steel blades.

**Air Pattern |** 360° diffusion with horitonztal swirl to downward flow adjustment, autonomously adjusted by means of a thermodynamic piston.

**Ceiling Types |** Open and Closed.





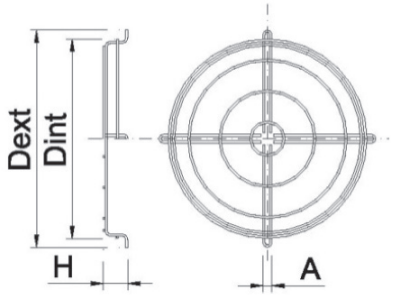

| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H |
| | **AX6-ACTIF 250** | 250 | 300 | 248 | 360 | 202 |
| | **AX6-ACTIF 315** | 315 | 400 | 313 | 464 | 225 |
| | **AX6-ACTIF 400** | 400 | 500 | 401 | 560 | 250 |
| | **AX6-ACTIF 500** | 500 | 620 | 497 | 690 | 306 |
| | **AX6-ACTIF 630** | 630 | 780 | 627 | 870 | 350 |

All dimensions in millimeters (mm)

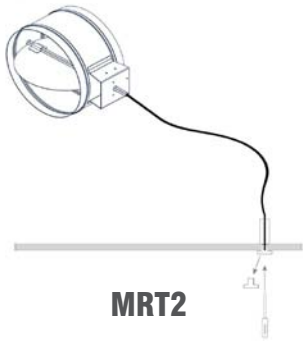
| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Dext | Dint | A | H |
| | **CH6 250** | 350 | 300 | 40 | 14 |
| | **CH6 315** | 450 | 400 | 40 | 14 |
| | **CH6 400** | 550 | 500 | 50 | 17 |
| | **CH6 500** | 655 | 600 | 80 | 17 |
| | **CH6 630** | 860 | 790 | 90 | 20 |

All dimensions in millimeters (mm)

### CH6 Security Grille



## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for AX6 diffusers installed in high ceilings**

| | Neck-Installed Air Volume Damper | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| | Cable Length |
|---|---|
| | |

| | Select Finish |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

# AX6-ACTIF-MOD Series

## Thermodynamic Aluminum Round Swirl Diffuser in Lay-In Panel



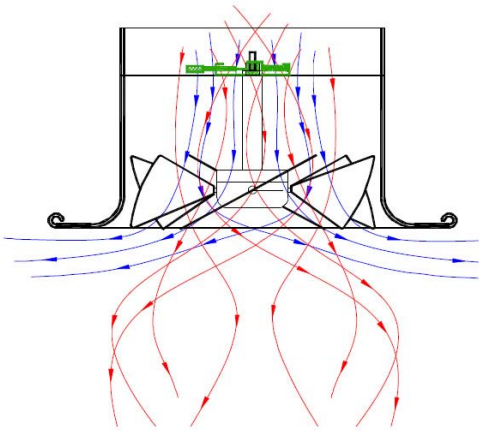
**AX6-ACTIF-MOD**
by MADEL®

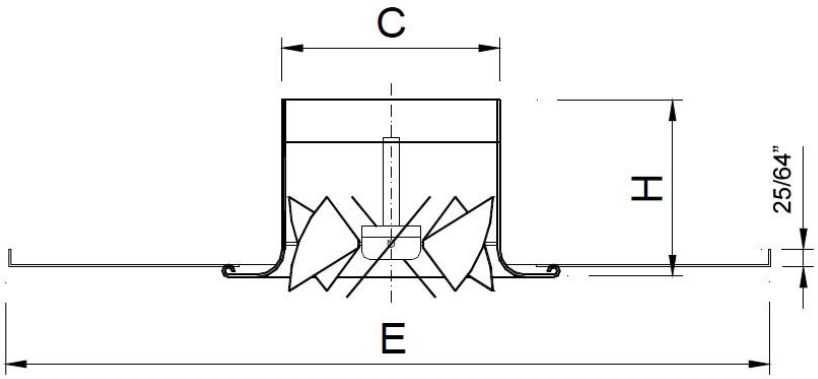
ACTIF

**Material |** Powder coated heavy gauge spun aluminum with steel panel and blades.

**Air Pattern |** 360° diffusion with horitonztal swirl to downward flow adjustment, autonomously adjusted by means of a thermodynamic piston.

**Ceiling Types |** Open and Closed.





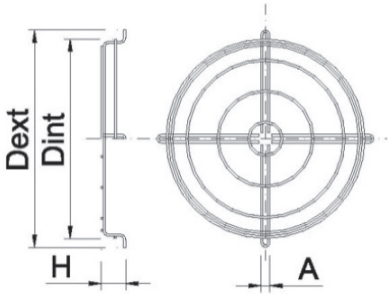

| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct | C | E | H |
| | **AX6-ACTIF 10** | 10 | 9 3/4 | 23 3/4 | 7 61/64 |
| | **AX6-ACTIF 12** | 12.5 | 12 21/64 | 23 3/4 | 8 55/64 |
| | **AX6-ACTIF 16** | 16 | 15 25/32 | 23 3/4 | 9 27/32 |

All dimensions in inches

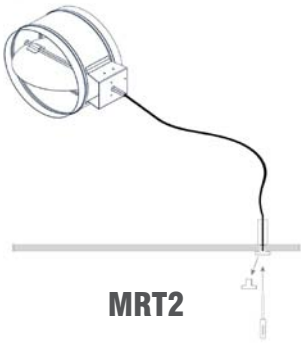
### CH6 Security Grille

| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Dext | Dint | A | H |
| | **CH6 10** | 13 25/32 | 11 13/16 | 35/64 | 1 37/64 |
| | **CH6 12** | 17 23/32 | 15 3/4 | 35/64 | 1 37/64 |
| | **CH6 16** | 21 21/32 | 19 11/16 | 43/64 | 1 31/32 |

All dimensions in inches



## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for AX6 diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

# SUBMITTAL

## AX6-ACTIF-MOD (METRIC)

## AX6-ACTIF-MOD Series
### Thermodynamic Aluminum Round Swirl Diffuser in Lay-In Panel



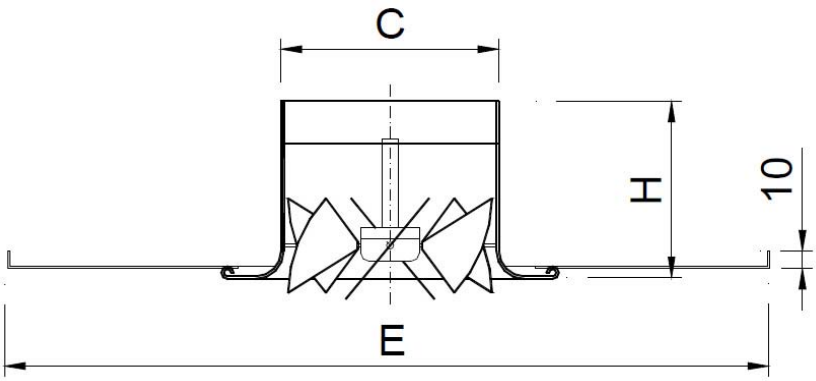
**AX6-ACTIF-MOD**
by MADEL®

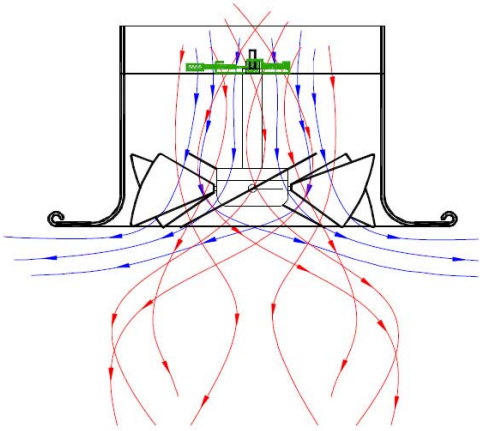
ACTIF

**Material |** Powder coated heavy gauge spun aluminum with steel panel and blades.

**Air Pattern |** 360° diffusion with horitonztal swirl to downward flow adjustment, autonomously adjusted by means of a thermodynamic piston.

**Ceiling Types |** Open and Closed.



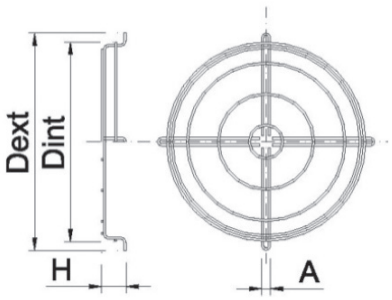
| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct | C | E | H |
| | **AX6-ACTIF-MOD 250** | 250 | 248 | 605 | 202 |
| | **AX6-ACTIF-MOD 315** | 315 | 313 | 605 | 225 |
| | **AX6-ACTIF-MOD 400** | 400 | 401 | 605 | 250 |

All dimensions in millimeters (mm)

| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Dext | Dint | A | H |
| | **CH6 250** | 350 | 300 | 40 | 14 |
| | **CH6 315** | 450 | 400 | 40 | 14 |
| | **CH6 400** | 550 | 500 | 50 | 17 |

All dimensions in millimeters (mm)

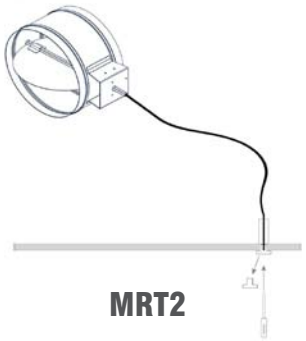
### CH6 Security Grille



# SUBMITTAL

## AX6-ACTIF-MOD (METRIC)

## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for AX6 diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

# AX6-MO Series

## Actuator-Controlled Adjustable Aluminum Round Swirl Diffusers

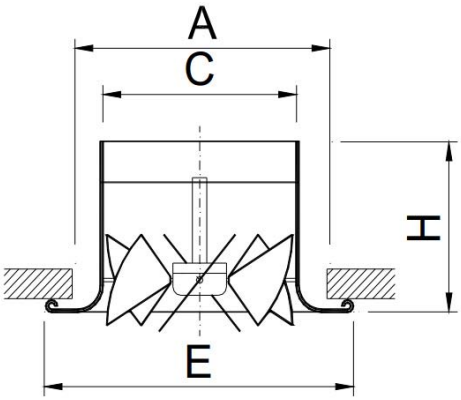


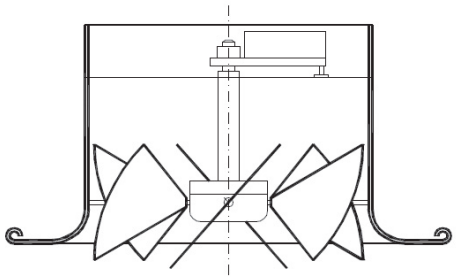
**AX6-MO**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum with steel blades.

**Air Pattern |** 360° diffusion with horitonztal swirl to downward flow adjustment, adjusted by means of an actuator.

**Ceiling Types |** Open and Closed.



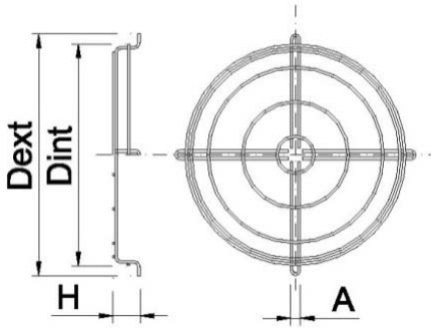



| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H |
| | **AX6-MO 10** | 10 | 11 13/16 | 9 3/4 | 14 11/64 | 7 61/64 |
| | **AX6-MO 12** | 12.5 | 15 3/4 | 12 21/64 | 18 17/64 | 8 55/64 |
| | **AX6-MO 16** | 16 | 19 11/16 | 15 25/32 | 20 3/64 | 9 27/32 |
| | **AX6-MO 20** | 20 | 24 13/32 | 19 9/16 | 23 15/64 | 12 3/64 |
| | **AX6-MO 25** | 25 | 30 45/64 | 24 11/16 | 34 1/4 | 13 25/32 |

All dimensions in inches

| Select Actuator | | |
|---|---|---|
| | **NM-24v** | Belimo On/Off actuator, 24 V |
| | **NM-230v** | Belimo On/Off actuator, 230 V |
| | **NM24-SR** | Belimo proportional actuator, 24 V |
| | **GLB131.1E -24v** | Siemens On/Off actuator, 24 V |
| | **GLB331.1E -230v** | Siemens On/Off actuator, 230 V |
| | **GLB161.1E -24v** | Siemens proportional actuator, 24 V |

### CH6 Security Grille




| Optional CH6 Security Grille | | | | | |
|---|---|---|---|---|---|
| ✓ | **Model** | **Dext** | **Dint** | **A** | **H** |
| | **CH6 10** | 13 25/32 | 11 13/16 | 35/64 | 1 37/64 |
| | **CH6 12** | 17 23/32 | 15 3/4 | 35/64 | 1 37/64 |
| | **CH6 16** | 21 21/32 | 19 11/16 | 43/64 | 1 31/32 |
| | **CH6 20** | 25 25/32 | 23 5/8 | 43/64 | 3 5/32 |
| | **CH6 25** | 33 55/64 | 31 7/64 | 25/32 | 3 35/64 |

All dimensions in inches

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

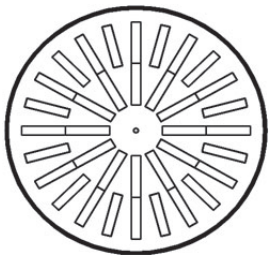
**Architect:**

**Contractor:**

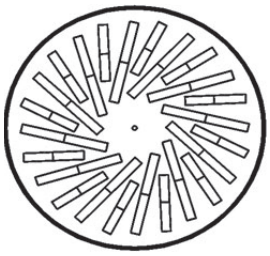
## AXO-C Series
### Adjustable Vanes Round Swirl Diffusers



**AXO-C**
by MADEL®



**AXO-C**

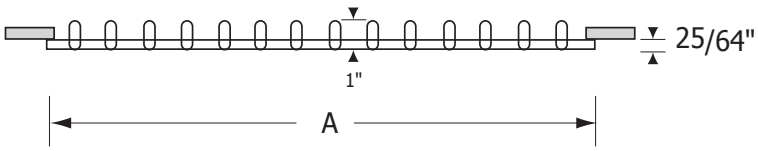


**AXO-CY**

**Material |** Powder coated stamped heavy gauge steel face and ABS vanes, galvanized steel plenum.

**Air Pattern |** Adjustable high induction swirl pattern.

**Ceiling Types |** Open and Closed.

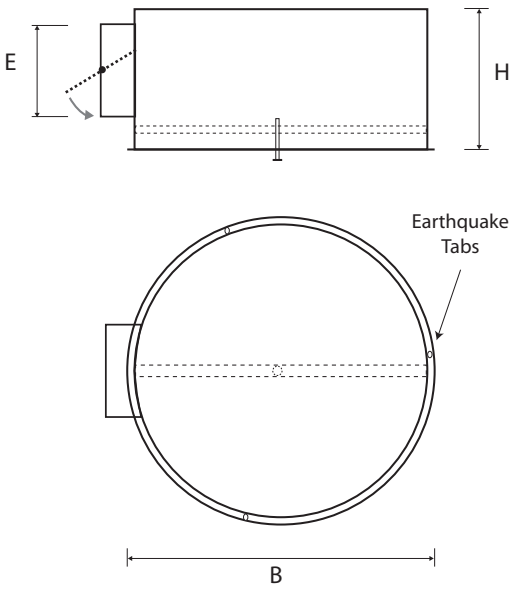



| Select Model | | |
|---|---|---|
| ✓ | **Imperial** | **A (in)** |
| | AXO-C 12 | 11 39/64 |
| | AXO-C 16 | 15 35/64 |
| | AXO-C 20 | 19 31/64 |
| | AXO-C 25 | 24 13/32 |
| | AXO-CY 25 | 24 13/32 |
| | AXO-C 33 | 32 9/32 |

| Select Options | |
|---|---|
| | Black ABS Vanes |
| | White ABS Vanes |

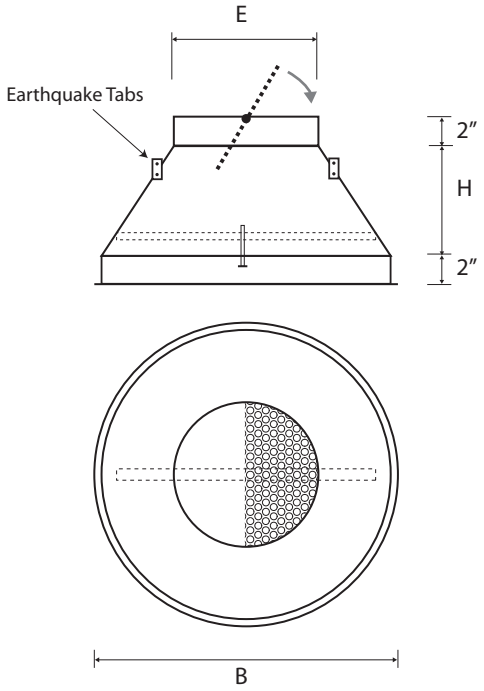
| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other (specify) : |

## Plenum




### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.




### PERFAIR-CT

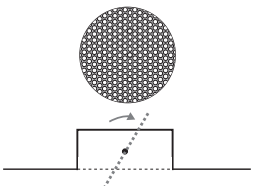
Conical with top duct connection, ideal for open ceilings with visible duct.

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 1205** | 5 | 11 3/8 | 4 7/8 | 9 |
| | **PERFAIR-CS 1206** | 6 | 11 3/8 | 5 7/8 | 9 |
| | **PERFAIR-CS 1208** | 8 | 11 3/8 | 7 7/8 | 9 |
| | **PERFAIR-CS 1606** | 6 | 15 1/4 | 5 7/8 | 10 |
| | **PERFAIR-CS 1608** | 8 | 15 1/4 | 7 7/8 | 10 |
| | **PERFAIR-CS 2006** | 6 | 19 | 5 7/8 | 12 |
| | **PERFAIR-CS 2008** | 8 | 19 | 7 7/8 | 12 |
| | **PERFAIR-CS 2010** | 10 | 19 | 9 7/8 | 12 |
| | **PERFAIR-CS 2506** | 6 | 24 | 5 7/8 | 13 |
| | **PERFAIR-CS 2508** | 8 | 24 | 7 7/8 | 13 |
| | **PERFAIR-CS 2510** | 10 | 24 | 9 7/8 | 13 |
| | **PERFAIR-CS 2512** | 12 | 24 | 11 7/8 | 13 |
| | **PERFAIR-CS 3312** | 12 | 33 | 11 7/8 | 16 |

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 1205** | 5 | 11 3/8 | 4 7/8 | 6 |
| | **PERFAIR-CT 1206** | 6 | 11 3/8 | 5 7/8 | 6 |
| | **PERFAIR-CT 1208** | 8 | 11 3/8 | 7 7/8 | 6 |
| | **PERFAIR-CT 1606** | 6 | 15 1/4 | 5 7/8 | 6 |
| | **PERFAIR-CT 1608** | 8 | 15 1/4 | 7 7/8 | 6 |
| | **PERFAIR-CT 2006** | 6 | 19 | 5 7/8 | 8 |
| | **PERFAIR-CT 2008** | 8 | 19 | 7 7/8 | 8 |
| | **PERFAIR-CT 2010** | 10 | 19 | 9 7/8 | 8 |
| | **PERFAIR-CT 2506** | 6 | 24 | 5 7/8 | 8 |
| | **PERFAIR-CT 2508** | 8 | 24 | 7 7/8 | 8 |
| | **PERFAIR-CT 2510** | 10 | 24 | 9 7/8 | 8 |
| | **PERFAIR-CT 2512** | 12 | 24 | 11 7/8 | 8 |
| | **PERFAIR-CT 3312** | 12 | 33 | 11 7/8 | 12 |

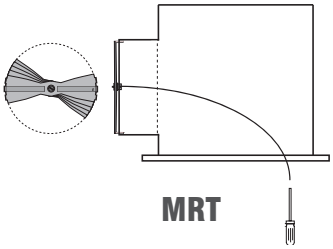
All dimensions in inches

## Air Volume Dampers



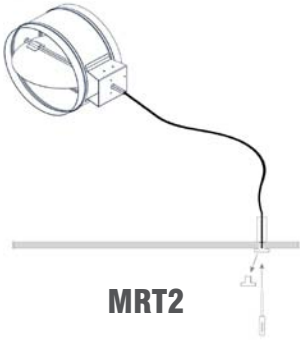
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2″ Interior Accoustical Liner |
| | **AL1** | 1″ Interior Accoustical Liner |
| | **R6** | 2″ Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

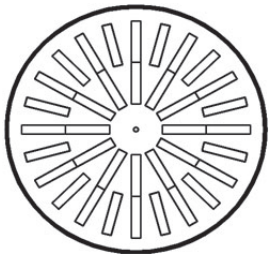
**Architect:**

**Contractor:**

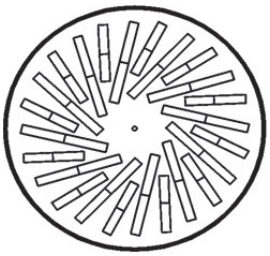
## AXO-C Series
### Adjustable Vanes Round Swirl Diffusers



**AXO-C**
by MADEL®



**AXO-C**

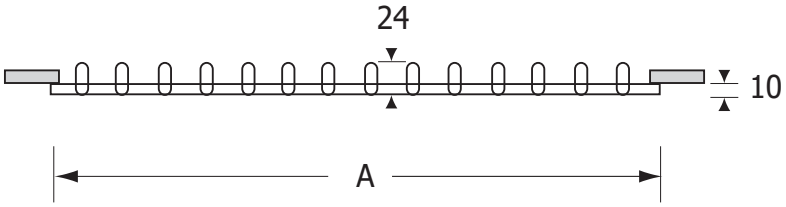


**AXO-CY**

**Material |** Powder coated stamped heavy gauge steel face and ABS vanes, galvanized steel plenum.

**Air Pattern |** Adjustable high induction swirl pattern.

**Ceiling Types |** Open and Closed.

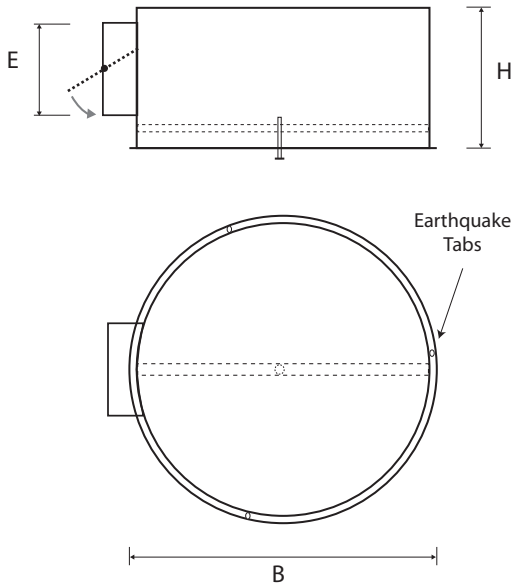



| Select Model | | |
|---|---|---|
| ✓ | **Metric** | **A (mm)** |
| | AXO-C 300 | 295 |
| | AXO-C 400 | 395 |
| | AXO-C 500 | 495 |
| | AXO-C 625 | 620 |
| | AXO-CY 625 | 620 |
| | AXO-C 825 | 820 |

| Select Options | |
|---|---|
| | Black ABS Vanes |
| | White ABS Vanes |

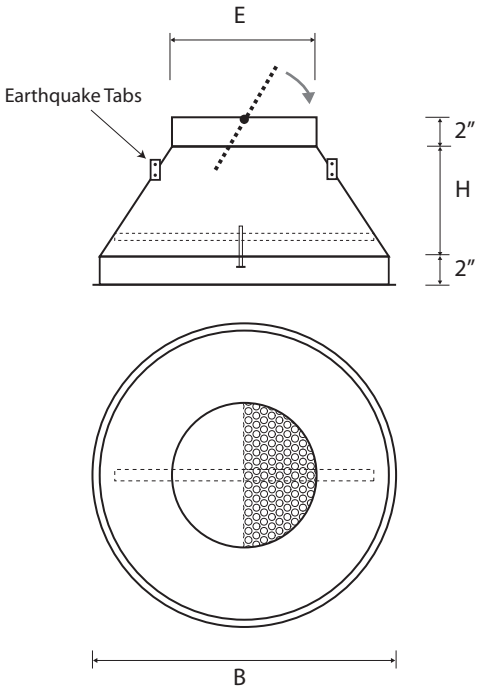
| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other (specify) : |

## Plenum




### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.




### PERFAIR-CT

Conical with top duct connection, ideal for open ceilings with visible duct.

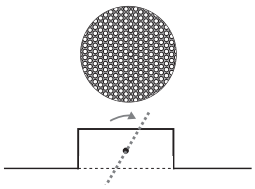
| Select Model - Metric | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 300 125** | 125 | 295 | 123 | 225 |
| | **PERFAIR-CS 300 150** | 150 | 295 | 148 | 225 |
| | **PERFAIR-CS 300 200** | 200 | 295 | 198 | 225 |
| | **PERFAIR-CS 400 150** | 150 | 395 | 148 | 250 |
| | **PERFAIR-CS 400 200** | 200 | 395 | 198 | 250 |
| | **PERFAIR-CS 500 150** | 150 | 495 | 148 | 300 |
| | **PERFAIR-CS 500 200** | 200 | 495 | 198 | 300 |
| | **PERFAIR-CS 500 250** | 250 | 495 | 248 | 300 |
| | **PERFAIR-CS 625 150** | 150 | 620 | 148 | 350 |
| | **PERFAIR-CS 625 200** | 200 | 620 | 198 | 350 |
| | **PERFAIR-CS 625 250** | 250 | 620 | 248 | 350 |
| | **PERFAIR-CS 625 300** | 300 | 620 | 298 | 350 |
| | **PERFAIR-CS 825 300** | 300 | 820 | 298 | 415 |

All dimensions in mm

| Select Model - Metric | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 300 125** | 125 | 295 | 123 | 152 |
| | **PERFAIR-CT 300 150** | 150 | 295 | 148 | 152 |
| | **PERFAIR-CT 300 200** | 200 | 295 | 198 | 152 |
| | **PERFAIR-CT 400 150** | 150 | 395 | 148 | 152 |
| | **PERFAIR-CT 400 200** | 200 | 395 | 198 | 152 |
| | **PERFAIR-CT 500 150** | 150 | 495 | 148 | 203 |
| | **PERFAIR-CT 500 200** | 200 | 495 | 198 | 203 |
| | **PERFAIR-CT 500 250** | 250 | 495 | 248 | 203 |
| | **PERFAIR-CT 625 150** | 150 | 620 | 148 | 203 |
| | **PERFAIR-CT 625 200** | 200 | 620 | 198 | 203 |
| | **PERFAIR-CT 625 250** | 250 | 620 | 248 | 203 |
| | **PERFAIR-CT 625 300** | 300 | 620 | 298 | 203 |
| | **PERFAIR-CT 825 300** | 300 | 820 | 298 | 305 |

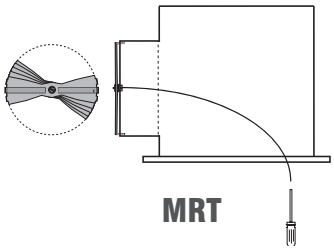
All dimensions in mm

## Air Volume Dampers



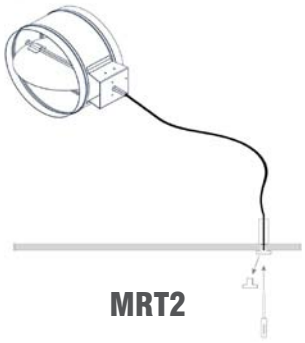
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 12 mm Interior Accoustical Liner |
| | **AL1** | 25 mm Interior Accoustical Liner |
| | **R6** | 50 mm Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

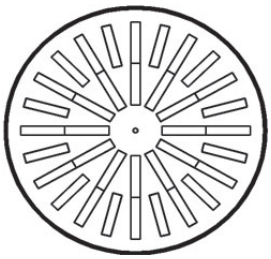
**Architect:**

**Contractor:**

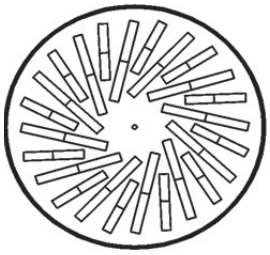
# AXO-ALU-C Series
## Adjustable Vanes Round Swirl Diffusers



**AXO-ALU-C**
by MADEL®



**AXO-ALU-C**

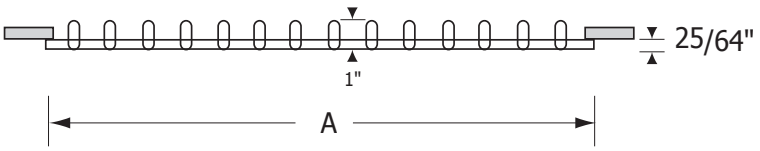


**AXO-ALU-CY**

**Material |** Powder coated stamped heavy gauge aluminum face with ABS vanes, galvanized steel plenum.

**Air Pattern |** Adjustable high induction swirl pattern.

**Ceiling Types |** Open and Closed.

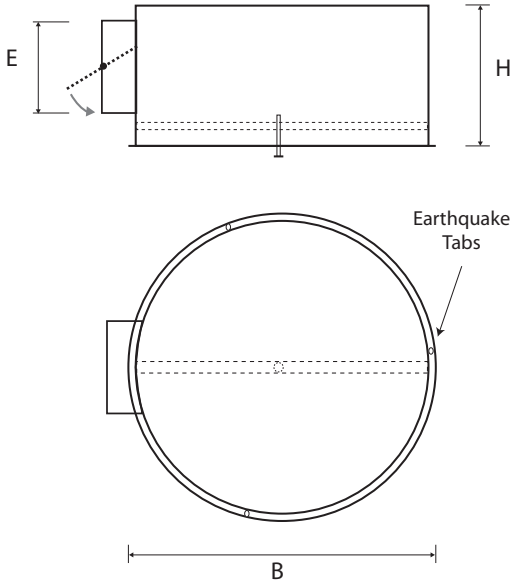



| Select Model | | |
|---|---|---|
| ✓ | **Imperial** | **A (in)** |
| | AXO-ALU-C 12 | 11 39/64 |
| | AXO-ALU-C 16 | 15 35/64 |
| | AXO-ALU-C 20 | 19 31/64 |
| | AXO-ALU-C 25 | 24 13/32 |
| | AXO-ALU-CY 25 | 24 13/32 |
| | AXO-ALU-C 33 | 32 9/32 |

| Select Options | |
|---|---|
| | Black ABS Vanes |
| | White ABS Vanes |

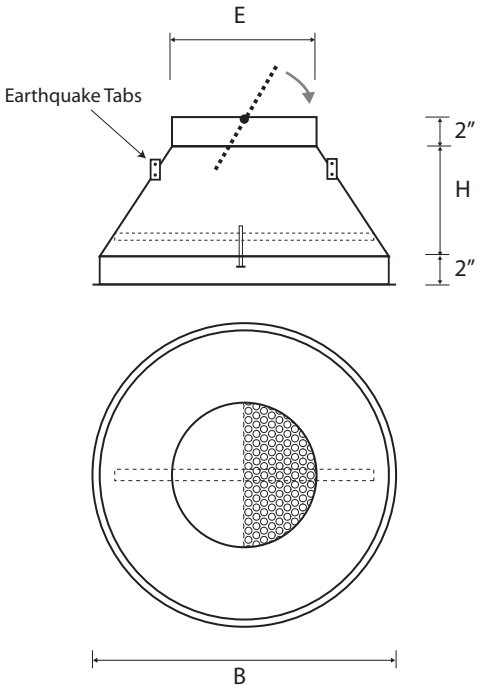
| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other (specify) : |

## Plenum




### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.




### PERFAIR-CT

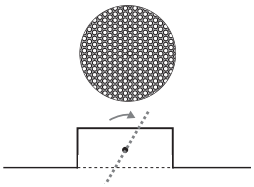
Conical with top duct connection, ideal for open ceilings with visible duct.

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 1205** | 5 | 11 3/8 | 4 7/8 | 9 |
| | **PERFAIR-CS 1206** | 6 | 11 3/8 | 5 7/8 | 9 |
| | **PERFAIR-CS 1208** | 8 | 11 3/8 | 7 7/8 | 9 |
| | **PERFAIR-CS 1606** | 6 | 15 1/4 | 5 7/8 | 10 |
| | **PERFAIR-CS 1608** | 8 | 15 1/4 | 7 7/8 | 10 |
| | **PERFAIR-CS 2006** | 6 | 19 | 5 7/8 | 12 |
| | **PERFAIR-CS 2008** | 8 | 19 | 7 7/8 | 12 |
| | **PERFAIR-CS 2010** | 10 | 19 | 9 7/8 | 12 |
| | **PERFAIR-CS 2506** | 6 | 24 | 5 7/8 | 13 |
| | **PERFAIR-CS 2508** | 8 | 24 | 7 7/8 | 13 |
| | **PERFAIR-CS 2510** | 10 | 24 | 9 7/8 | 13 |
| | **PERFAIR-CS 2512** | 12 | 24 | 11 7/8 | 13 |
| | **PERFAIR-CS 3312** | 12 | 33 | 11 7/8 | 16 |

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 1205** | 5 | 11 3/8 | 4 7/8 | 6 |
| | **PERFAIR-CT 1206** | 6 | 11 3/8 | 5 7/8 | 6 |
| | **PERFAIR-CT 1208** | 8 | 11 3/8 | 7 7/8 | 6 |
| | **PERFAIR-CT 1606** | 6 | 15 1/4 | 5 7/8 | 6 |
| | **PERFAIR-CT 1608** | 8 | 15 1/4 | 7 7/8 | 6 |
| | **PERFAIR-CT 2006** | 6 | 19 | 5 7/8 | 8 |
| | **PERFAIR-CT 2008** | 8 | 19 | 7 7/8 | 8 |
| | **PERFAIR-CT 2010** | 10 | 19 | 9 7/8 | 8 |
| | **PERFAIR-CT 2506** | 6 | 24 | 5 7/8 | 8 |
| | **PERFAIR-CT 2508** | 8 | 24 | 7 7/8 | 8 |
| | **PERFAIR-CT 2510** | 10 | 24 | 9 7/8 | 8 |
| | **PERFAIR-CT 2512** | 12 | 24 | 11 7/8 | 8 |
| | **PERFAIR-CT 3312** | 12 | 33 | 11 7/8 | 12 |

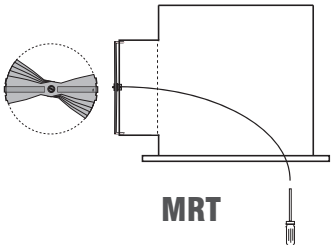
All dimensions in inches

## Air Volume Dampers



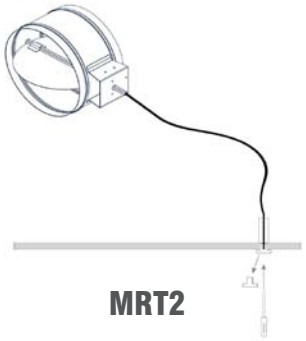
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

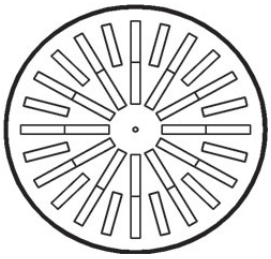
**Architect:**

**Contractor:**

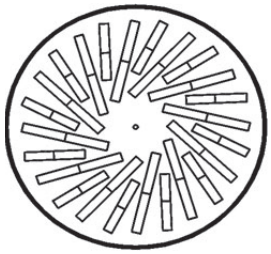
# AXO-ALU-C Series
## Adjustable Vanes Round Swirl Diffusers



**AXO-ALU-C**
by MADEL®



**AXO-ALU-C**

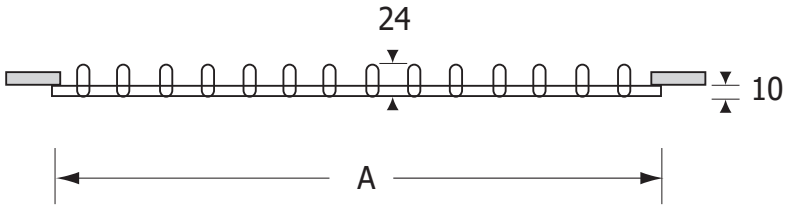


**AXO-ALU-CY**

**Material |** Powder coated stamped heavy gauge aluminum face and ABS vanes, galvanized steel plenum.

**Air Pattern |** Adjustable high induction swirl pattern.

**Ceiling Types |** Open and Closed.

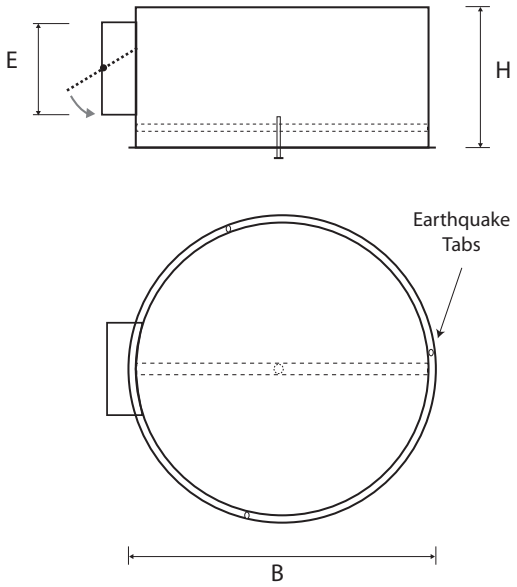



| Select Model | | |
|---|---|---|
| ✓ | **Metric** | **A (mm)** |
| | AXO-ALU-C 300 | 295 |
| | AXO-ALU-C 400 | 395 |
| | AXO-ALU-C 500 | 495 |
| | AXO-ALU-C 625 | 620 |
| | AXO-ALU-CY 625 | 620 |
| | AXO-ALU-C 825 | 820 |

| Select Options | |
|---|---|
| | Black ABS Vanes |
| | White ABS Vanes |

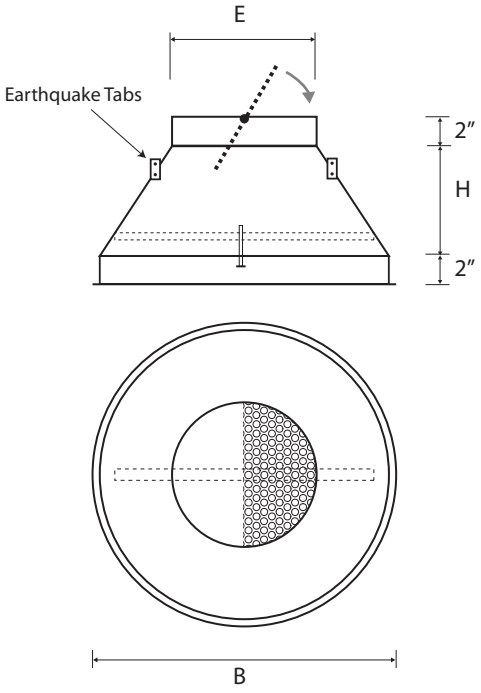
| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other (specify) : |

## Plenum




### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.




### PERFAIR-CT

Conical with top duct connection, ideal for open ceilings with visible duct.

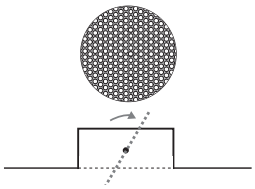
| Select Model - Metric | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 300 125** | 125 | 295 | 123 | 225 |
| | **PERFAIR-CS 300 150** | 150 | 295 | 148 | 225 |
| | **PERFAIR-CS 300 200** | 200 | 295 | 198 | 225 |
| | **PERFAIR-CS 400 150** | 150 | 395 | 148 | 250 |
| | **PERFAIR-CS 400 200** | 200 | 395 | 198 | 250 |
| | **PERFAIR-CS 500 150** | 150 | 495 | 148 | 300 |
| | **PERFAIR-CS 500 200** | 200 | 495 | 198 | 300 |
| | **PERFAIR-CS 500 250** | 250 | 495 | 248 | 300 |
| | **PERFAIR-CS 625 150** | 150 | 620 | 148 | 350 |
| | **PERFAIR-CS 625 200** | 200 | 620 | 198 | 350 |
| | **PERFAIR-CS 625 250** | 250 | 620 | 248 | 350 |
| | **PERFAIR-CS 625 300** | 300 | 620 | 298 | 350 |
| | **PERFAIR-CS 825 300** | 300 | 820 | 298 | 415 |

All dimensions in mm

| Select Model - Metric | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 300 125** | 125 | 295 | 123 | 152 |
| | **PERFAIR-CT 300 150** | 150 | 295 | 148 | 152 |
| | **PERFAIR-CT 300 200** | 200 | 295 | 198 | 152 |
| | **PERFAIR-CT 400 150** | 150 | 395 | 148 | 152 |
| | **PERFAIR-CT 400 200** | 200 | 395 | 198 | 152 |
| | **PERFAIR-CT 500 150** | 150 | 495 | 148 | 203 |
| | **PERFAIR-CT 500 200** | 200 | 495 | 198 | 203 |
| | **PERFAIR-CT 500 250** | 250 | 495 | 248 | 203 |
| | **PERFAIR-CT 625 150** | 150 | 620 | 148 | 203 |
| | **PERFAIR-CT 625 200** | 200 | 620 | 198 | 203 |
| | **PERFAIR-CT 625 250** | 250 | 620 | 248 | 203 |
| | **PERFAIR-CT 625 300** | 300 | 620 | 298 | 203 |
| | **PERFAIR-CT 825 300** | 300 | 820 | 298 | 305 |

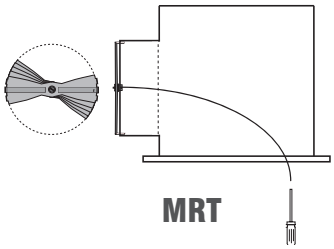
All dimensions in mm

## Air Volume Dampers



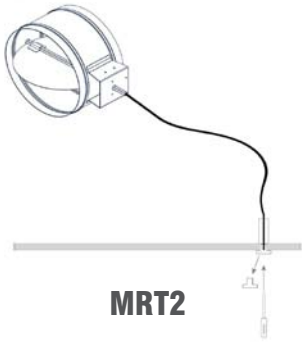
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 12 mm Interior Accoustical Liner |
| | **AL1** | 25 mm Interior Accoustical Liner |
| | **R6** | 50 mm Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## AXO-S Series
## Adjustable Vanes Square Swirl Diffusers

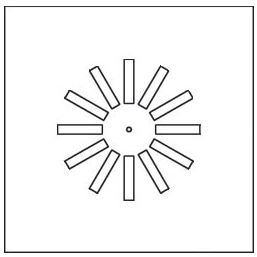


**AXO-S**
by MADEL®

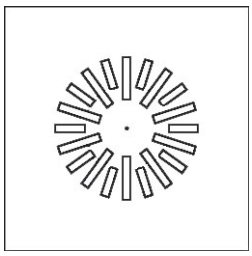
**Material |** Powder coated stamped heavy gauge steel face and ABS vanes, with galvanized steel plenum.

**Air Pattern |** Adjustable high induction swirl pattern.

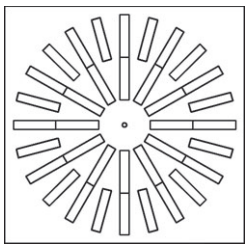
**Ceiling Types |** False, Open and Closed.



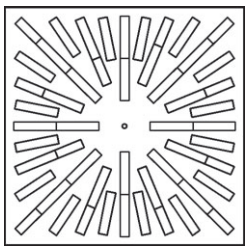
**AXO-S300**



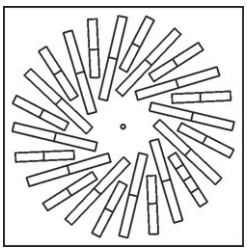
**AXO-S400**



**AXO-S**



**AXO-SX**

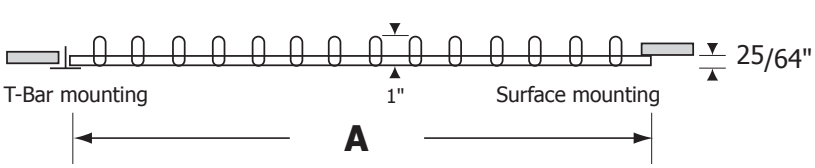


**AXO-SY**

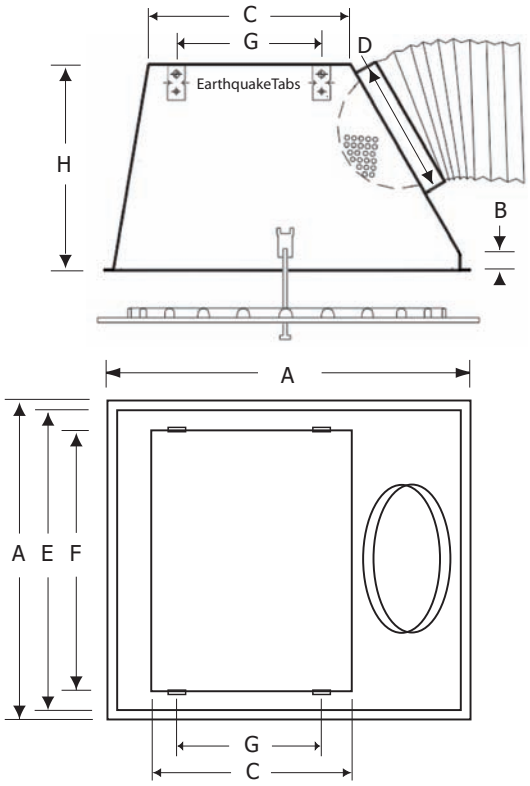
| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | **Imperial** | **A (in)** | ✓ | **Metric** | **A (mm)** |
| | AXO-S 12 | 11 39/64 x 11 39/64 | | AXO-S 300 | 295 x 295 |
| | AXO-S 16 | 15 35/64 x 15 35/64 | | AXO-S 400 | 395 x 395 |
| | AXO-S 20 | 19 31/64 x 19 31/64 | | AXO-S 500 | 495 x 495 |
| | AXO-S 24 | 23 3/4 x 23 3/4 | | AXO-S 610 | 605 x 605 |
| | AXO-S 32 | 31 19/64 x 31 19/64 | | AXO-S 800 | 795 x 795 |
| | AXO-S300 24 | 23 3/4 x 23 3/4 | | AXO-S300 610 | 605 x 605 |
| | AXO-S400 24 | 23 3/4 x 23 3/4 | | AXO-S400 610 | 605 x 605 |
| | AXO-SX 24 | 23 3/4 x 23 3/4 | | AXO-SX 610 | 605 x 605 |
| | AXO-SY 24 | 23 3/4 x 23 3/4 | | AXO-SY 610 | 605 x 605 |

| Select Options | |
|---|---|
| | Black ABS Vanes |
| | White ABS Vanes |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL : |



## Plenum



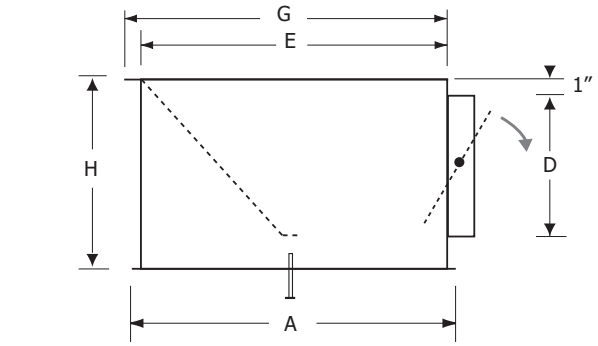

### PERFAIR-SS

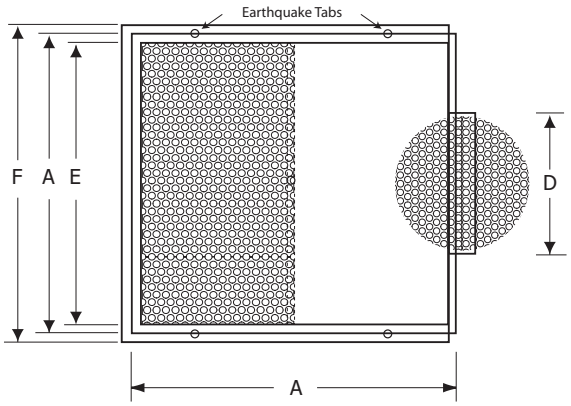
Trapezoidal with side duct connection, recommended for closed ceilings and false ceilings.

| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B | C | D | E | F | G | H |
| | **PERFAIR-SS 1205** | 5 | 11 1/2 | 1 | 5 3/4 | 4 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1206** | 6 | 11 1/2 | 1 | 5 3/4 | 5 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1208** | 8 | 11 1/2 | 1 | 5 3/4 | 7 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 12 |
| | **PERFAIR-SS 1608** | 8 | 15 3/8 | 1 | 7 1/2 | 7 7/8 | 14 5/8 | 13 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2010** | 10 | 19 1/4 | 1 | 8 1/2 | 9 7/8 | 18 5/8 | 17 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2405** | 5 | 23 1/2 | 1 | 10 1/2 | 4 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2406** | 6 | 23 1/2 | 1 | 10 1/2 | 5 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2408** | 8 | 23 1/2 | 1 | 10 1/2 | 7 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2410** | 10 | 23 1/2 | 1 | 10 1/2 | 9 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2412** | 12 | 23 1/2 | 1 | 10 1/2 | 11 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 3212** | 12 | 31 1/4 | 1 | | 11 7/8 | | | | |

All dimensions in inches

## Plenum (continued)




### PERFAIR-SSS

Rectangular with side connection, recommended for open ceilings with rigid duct entering from the side.

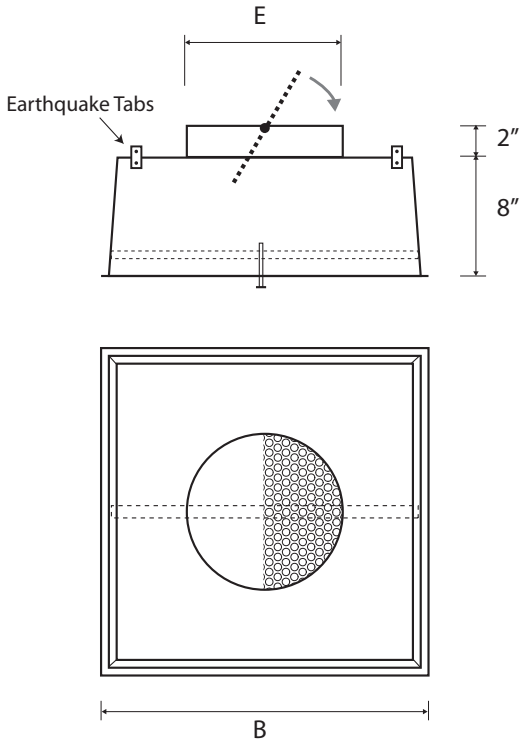
| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | D | E | F | G | H |
| | **PERFAIR-SSS 1205** | 5 | 11 1/2 | 4 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1206** | 6 | 11 1/2 | 5 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1208** | 8 | 11 1/2 | 7 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1608** | 8 | 15 3/8 | 7 7/8 | 14 5/8 | 16 5/8 | 15 5/8 | 12 |
| | **PERFAIR-SSS 2010** | 10 | 19 1/4 | 9 7/8 | 18 5/8 | 21 5/8 | 19 5/8 | 14 |
| | **PERFAIR-SSS 2405** | 5 | 23 1/2 | 4 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2406** | 6 | 23 1/2 | 5 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2408** | 8 | 23 1/2 | 7 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2410** | 10 | 23 1/2 | 9 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2412** | 12 | 23 1/2 | 11 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 3212** | 12 | 31 1/4 | 11 7/8 | | | | |

All dimensions in inches

## Plenum (continued)

### PERFAIR-ST

Top duct connection, recommended for open ceilings with visible duct.

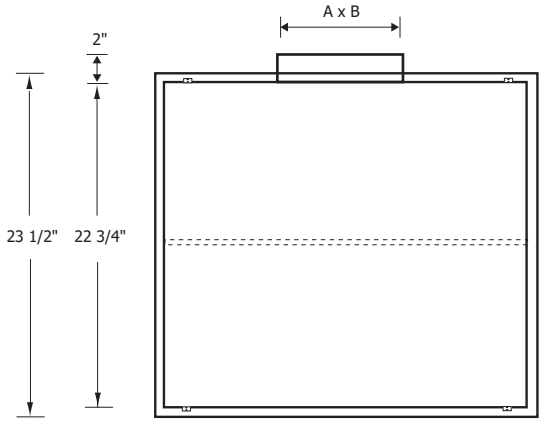


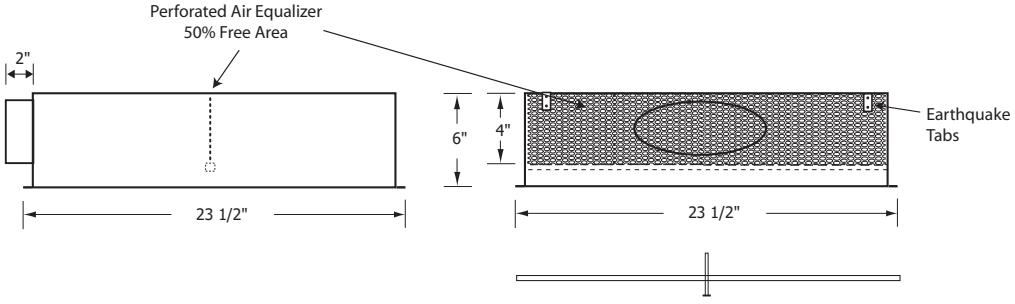

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E |
| | **PERFAIR-ST 1206** | 6 | 11 1/2 | 5 7/8 |
| | **PERFAIR-ST 1208** | 8 | 11 1/2 | 7 7/8 |
| | **PERFAIR-ST 2406** | 6 | 23 1/2 | 5 7/8 |
| | **PERFAIR-ST 2408** | 8 | 23 1/2 | 7 7/8 |
| | **PERFAIR-ST 2410** | 10 | 23 1/2 | 9 7/8 |
| | **PERFAIR-ST 2412** | 12 | 23 1/2 | 11 7/8 |
| | **PERFAIR-ST 3212** | 12 | 31 1/4 | 11 7/8 |

All dimensions in inches

### PERFAIR-XS

Compact plenum with side duct connection, recommended when height in the ceiling is between 6” and 14”.

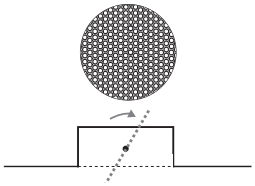



| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B |
| | **PERFAIR-XS 2404** | 4 | 3 7/8 | 3 7/8 |
| | **PERFAIR-XS 2405** | 5 | 4 7/8 | 4 7/8 |
| | **PERFAIR-XS 2406** | 6 | 7 9/16 | 3 1/8 |
| | **PERFAIR-XS 2408** | 8 | 10 1/2 | 3 1/4 |

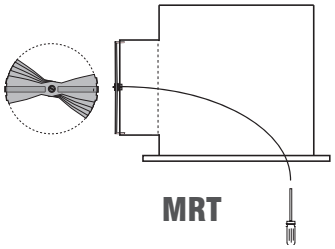
All dimensions in inches

## Air Volume Dampers



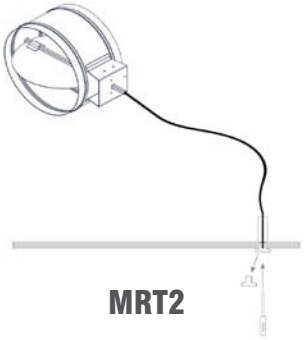
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



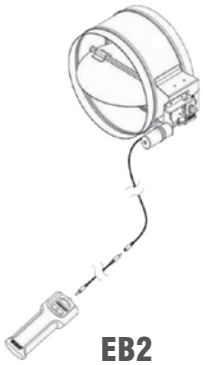
**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| | Insulation | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| | Neck-Installed Air Volume Damper | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| | Cable Length (MRT2 or EB2) |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## AXO-ALU-S Series
### Adjustable Vanes Square Swirl Diffusers

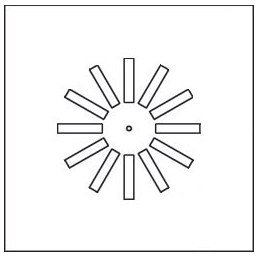


**AXO-ALU-S**
by MADEL®

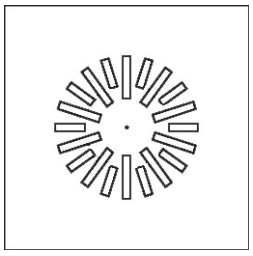
**Material |** Powder coated stamped heavy gauge aluminum face with ABS vanes and galvanized steel plenum.

**Air Pattern |** Adjustable high induction swirl pattern.

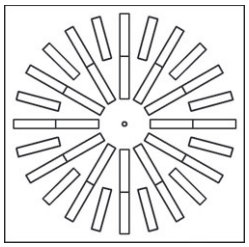
**Ceiling Types |** False, Open and Closed.



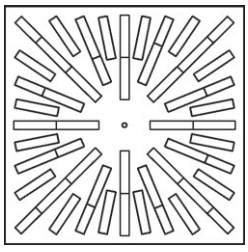
**AXO-ALU-S300**



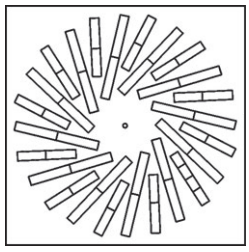
**AXO-ALU-S400**



**AXO-ALU-S**



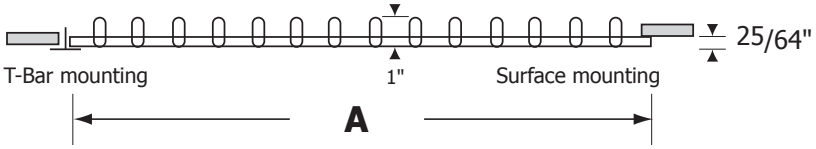
**AXO-ALU-SX**



**AXO-ALU-SY**

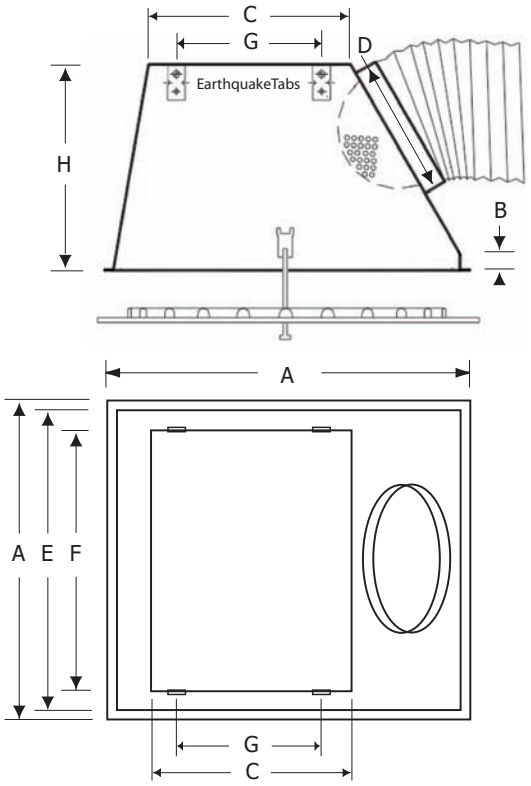
| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | **Imperial** | **A (in)** | ✓ | **Metric** | **A (mm)** |
| | AXO-ALU-S 12 | 11 39/64 x 11 39/64 | | AXO-ALU-S 300 | 295 x 295 |
| | AXO-ALU-S 16 | 15 35/64 x 15 35/64 | | AXO-ALU-S 400 | 395 x 395 |
| | AXO-ALU-S 20 | 19 31/64 x 19 31/64 | | AXO-ALU-S 500 | 495 x 495 |
| | AXO-ALU-S 24 | 23 3/4 x 23 3/4 | | AXO-ALU-S 610 | 605 x 605 |
| | AXO-ALU-S 32 | 31 19/64 x 31 19/64 | | AXO-ALU-S 800 | 795 x 795 |
| | AXO-ALU-S300 24 | 23 3/4 x 23 3/4 | | AXO-ALU-S300 610 | 605 x 605 |
| | AXO-ALU-S400 24 | 23 3/4 x 23 3/4 | | AXO-ALU-S400 610 | 605 x 605 |
| | AXO-ALU-SX 24 | 23 3/4 x 23 3/4 | | AXO-ALU-SX 610 | 605 x 605 |
| | AXO-ALU-SY 24 | 23 3/4 x 23 3/4 | | AXO-ALU-SY 610 | 605 x 605 |

| Select Options | |
|---|---|
| | Black ABS Vanes |
| | White ABS Vanes |




| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL : |

## Plenum



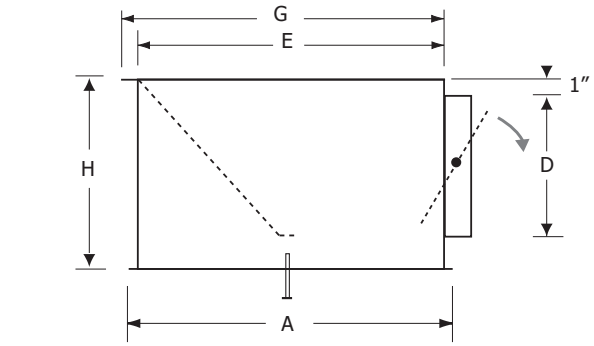

### PERFAIR-SS

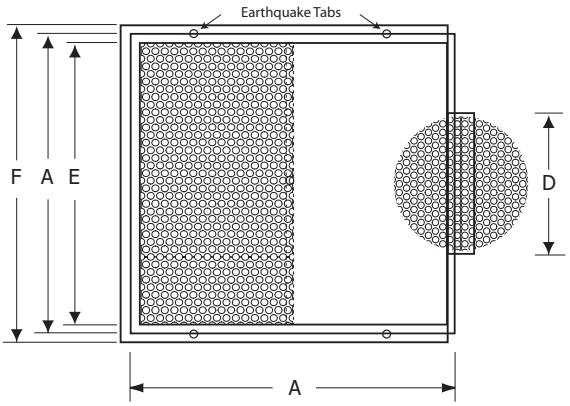
Trapezoidal with side duct connection, recommended for closed ceilings and false ceilings.

| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B | C | D | E | F | G | H |
| | **PERFAIR-SS 1205** | 5 | 11 1/2 | 1 | 5 3/4 | 4 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1206** | 6 | 11 1/2 | 1 | 5 3/4 | 5 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1208** | 8 | 11 1/2 | 1 | 5 3/4 | 7 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 12 |
| | **PERFAIR-SS 1608** | 8 | 15 3/8 | 1 | 7 1/2 | 7 7/8 | 14 5/8 | 13 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2010** | 10 | 19 1/4 | 1 | 8 1/2 | 9 7/8 | 18 5/8 | 17 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2405** | 5 | 23 1/2 | 1 | 10 1/2 | 4 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2406** | 6 | 23 1/2 | 1 | 10 1/2 | 5 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2408** | 8 | 23 1/2 | 1 | 10 1/2 | 7 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2410** | 10 | 23 1/2 | 1 | 10 1/2 | 9 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2412** | 12 | 23 1/2 | 1 | 10 1/2 | 11 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |

All dimensions in inches

## Plenum (continued)



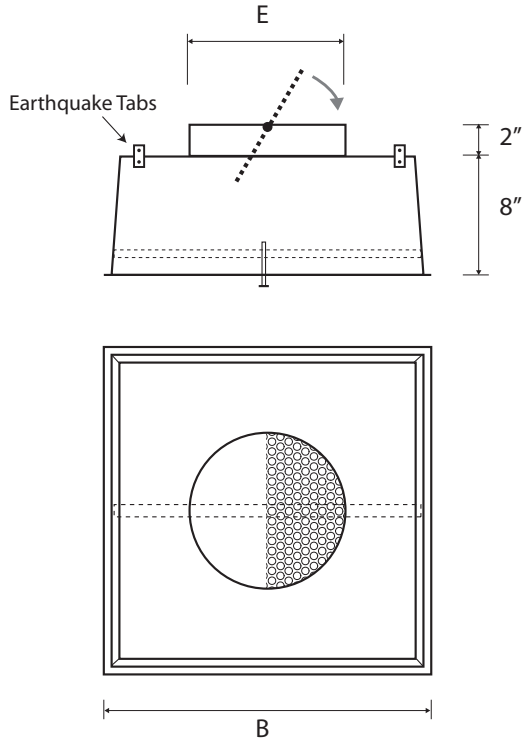

### PERFAIR-SSS

Rectangular with side connection, recommended for open ceilings with rigid duct entering from the side.

| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | D | E | F | G | H |
| | **PERFAIR-SSS 1205** | 5 | 11 1/2 | 4 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1206** | 6 | 11 1/2 | 5 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1208** | 8 | 11 1/2 | 7 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1608** | 8 | 15 3/8 | 7 7/8 | 14 5/8 | 16 5/8 | 15 5/8 | 12 |
| | **PERFAIR-SSS 2010** | 10 | 19 1/4 | 9 7/8 | 18 5/8 | 21 5/8 | 19 5/8 | 14 |
| | **PERFAIR-SSS 2405** | 5 | 23 1/2 | 4 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2406** | 6 | 23 1/2 | 5 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2408** | 8 | 23 1/2 | 7 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2410** | 10 | 23 1/2 | 9 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2412** | 12 | 23 1/2 | 11 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |

All dimensions in inches

## Plenum (continued)




### PERFAIR-ST

Top duct connection, recommended for open ceilings with visible duct.

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E |
| | **PERFAIR-ST 1206** | 6 | 11 1/2 | 5 7/8 |
| | **PERFAIR-ST 1208** | 8 | 11 1/2 | 7 7/8 |
| | **PERFAIR-ST 2406** | 6 | 23 1/2 | 5 7/8 |
| | **PERFAIR-ST 2408** | 8 | 23 1/2 | 7 7/8 |
| | **PERFAIR-ST 2410** | 10 | 23 1/2 | 9 7/8 |
| | **PERFAIR-ST 2412** | 12 | 23 1/2 | 11 7/8 |

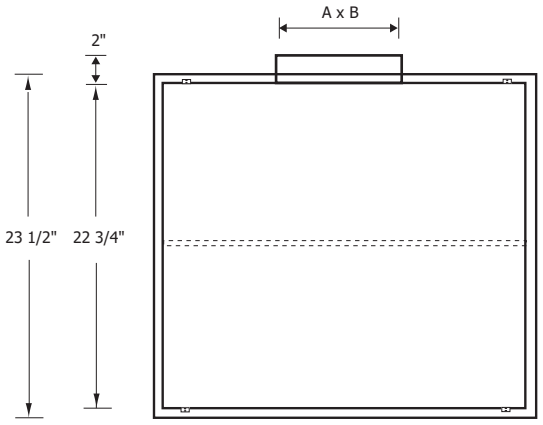
All dimensions in inches

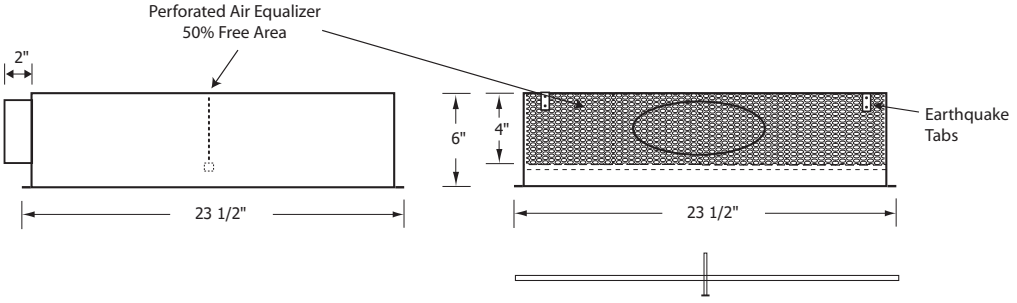
### PERFAIR-XS

Compact plenum with side duct connection, recommended when height in the ceiling is between 6” and 14”.

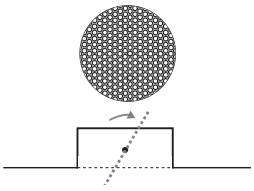
| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B |
| | **PERFAIR-XS 2404** | 4 | 3 7/8 | 3 7/8 |
| | **PERFAIR-XS 2405** | 5 | 4 7/8 | 4 7/8 |
| | **PERFAIR-XS 2406** | 6 | 7 9/16 | 3 1/8 |
| | **PERFAIR-XS 2408** | 8 | 10 1/2 | 3 1/4 |

All dimensions in inches



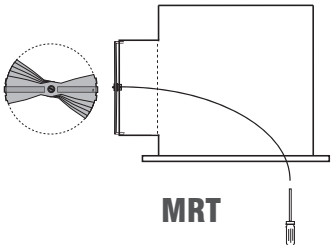



## Air Volume Dampers



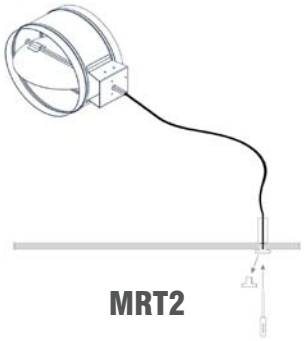
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

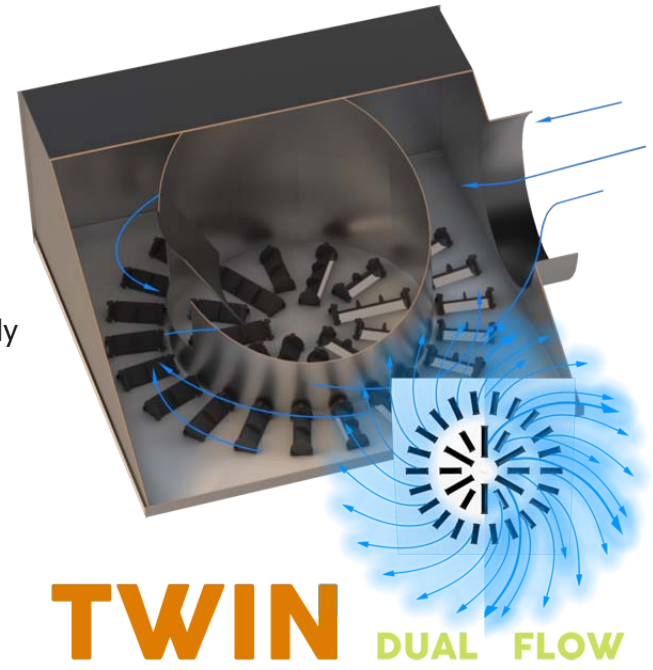
**Contractor:**

# SUBMITTAL

## AXO-TWIN

REV 0

## AXO-TWIN Series
### Dual Throw High Induction Swirl Diffuser For VAV Systems



**Material |** Powder coated heavy gauge steel with ABS vanes and galvanized steel plenum

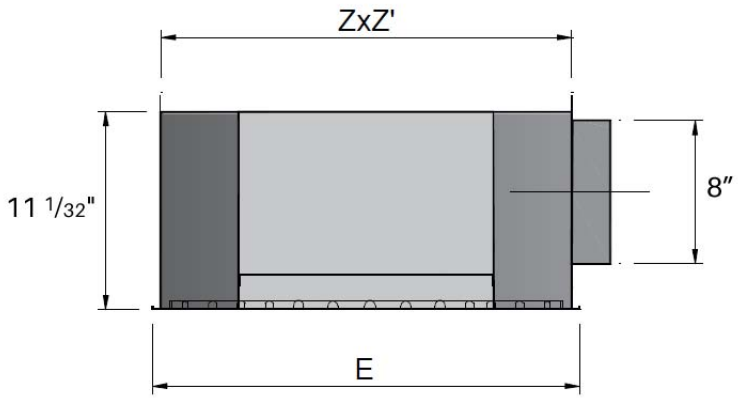
**Air Pattern |** 360° swirl diffusion with throw distance automatically adjusted based on air volume

**Ceiling Types |** Suitable for open, false and closed ceilings

TWIN DUAL FLOW

**AXO-TWIN**
by MADEL®

**Patent Pending**




| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct | E | Z | Z' |
| | **AXO-TWIN** | 8 | 23 3/4 | 22 43/64 | 22 23/64 |

All dimensions in inches (in)

| Vanes Color | | |
|---|---|---|
| | **AB** | White |
| | **AN** | Black |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Powder Coated Off White (RAL 9010) |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

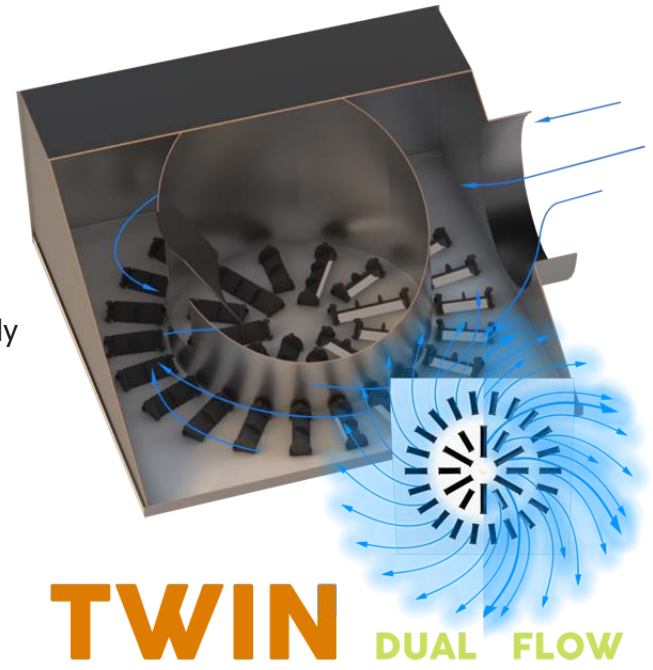
# SUBMITTAL

## AXO-TWIN (METRIC)

REV 0

## AXO-TWIN Series

### Dual Throw High Induction Swirl Diffuser For VAV Systems



**Material |** Powder coated heavy gauge steel with ABS vanes and galvanized steel plenum

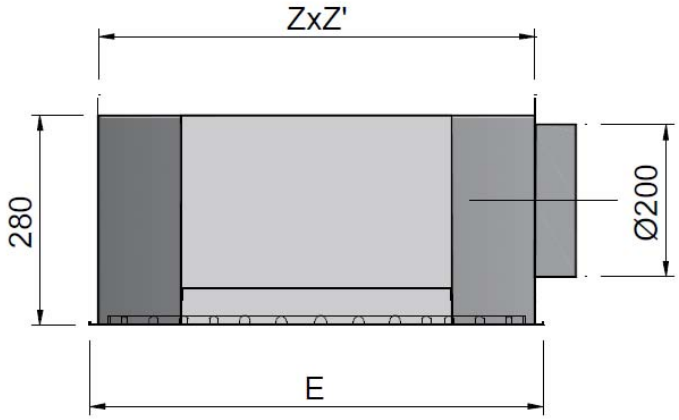
**Air Pattern |** 360° swirl diffusion with throw distance automatically adjusted based on air volume

**Ceiling Types |** Suitable for open, false and closed ceilings

TWIN DUAL FLOW

**AXO-TWIN**
by MADEL®

**Patent Pending**




| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct | E | Z | Z' |
| | **AXO-TWIN 610** | 200 | 605 | 576 | 568 |

All dimensions in mm

| Vanes Color | | |
|---|---|---|
| | **AB** | White |
| | **AN** | Black |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Powder Coated Off White (RAL 9010) |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## AXP Series
## Fixed Blades Round Swirl Diffusers

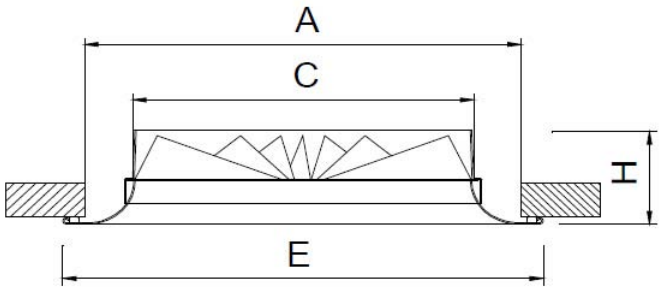


**AXP**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum

**Air Pattern |** fixed 360° swirl diffusion

**Ceiling Types |** Open and Closed




| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | **Model** | **Duct** | **A** | **C** | **E** | **H** |
| | **AXP 05** | 5 | 7 9/16 | 4 25/32 | 9 1/16 | 2 7/8 |
| | **AXP 06** | 6 | 8 15/16 | 5 7/8 | 10 5/16 | 4 29/64 |
| | **AXP 08** | 8 | 10 5/8 | 7 51/64 | 12 1/64 | 2 61/64 |
| | **AXP 10** | 10 | 12 19/32 | 9 49/64 | 13 31/32 | 2 61/64 |
| | **AXP 12** | 12 | 15 5/64 | 11 7/8 | 16 29/64 | 4 27/32 |

All dimensions in inches (in)
Note: AXP 06 and AXP 12 have Metric to Imperial transitions installed. Transitions are made of unpainted stainless steel.

| Options | | |
|---|---|---|
| | **EQ** | Air Equalizing Grid (Perforated Plate) |
| | **WT** | Transition Powder Coated White (6" and 12" only) |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## AXP-MOD Series

### Fixed Blades Round Swirl Diffusers in Lay-in Panel

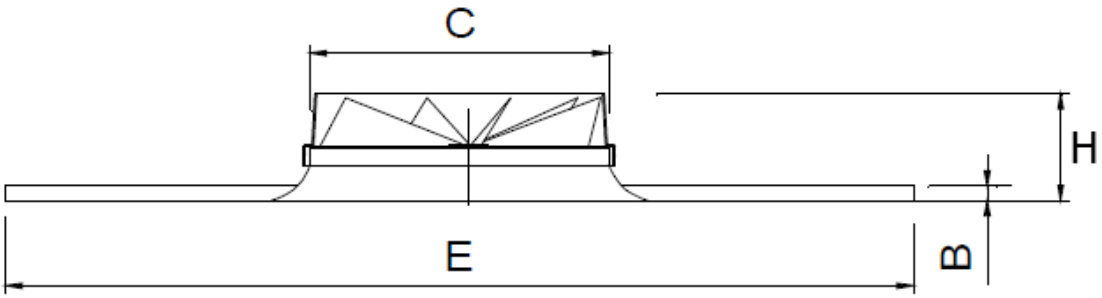


**AXP-MOD**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum

**Air Pattern |** fixed 360° swirl diffusion

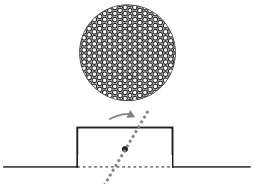
**Ceiling Types |** False Ceiling




| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | **Model** | **Duct** | **B** | **C** | **E** | **H** |
| | **AXP-MOD 05** | 5 | 15/32 | 4 25/32 | 23 3/4 | 3 11/32 |
| | **AXP-MOD 06** | 6 | 15/32 | 5 7/8 | 23 3/4 | 4 27/32 |
| | **AXP-MOD 08** | 8 | 15/32 | 7 51/64 | 23 3/4 | 3 11/32 |
| | **AXP-MOD 10** | 10 | 15/32 | 9 49/64 | 23 3/4 | 3 11/32 |
| | **AXP-MOD 12** | 12 | 15/32 | 11 7/8 | 23 3/4 | 4 27/32 |

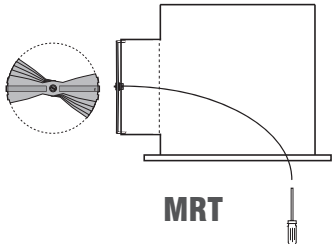
All dimensions in inches (in)
Note: AXP-MOD 06 and AXP-MOD 12 have Metric to Imperial transitions installed in the collar. Transitions are made of unpainted stainless steel.

## Air Volume Dampers



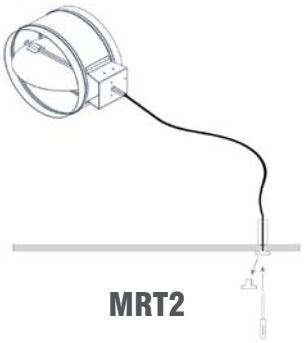
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Options | | |
|---|---|---|
| | **EQ** | Air Equalizing Grid (Perforated Plate) |
| | **WT** | Transition Powder Coated White (6" and 12" only) |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

**Architect:**

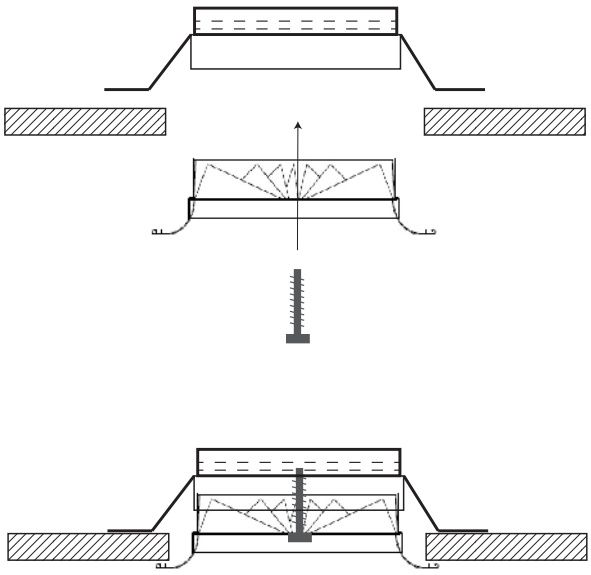
**Contractor:**

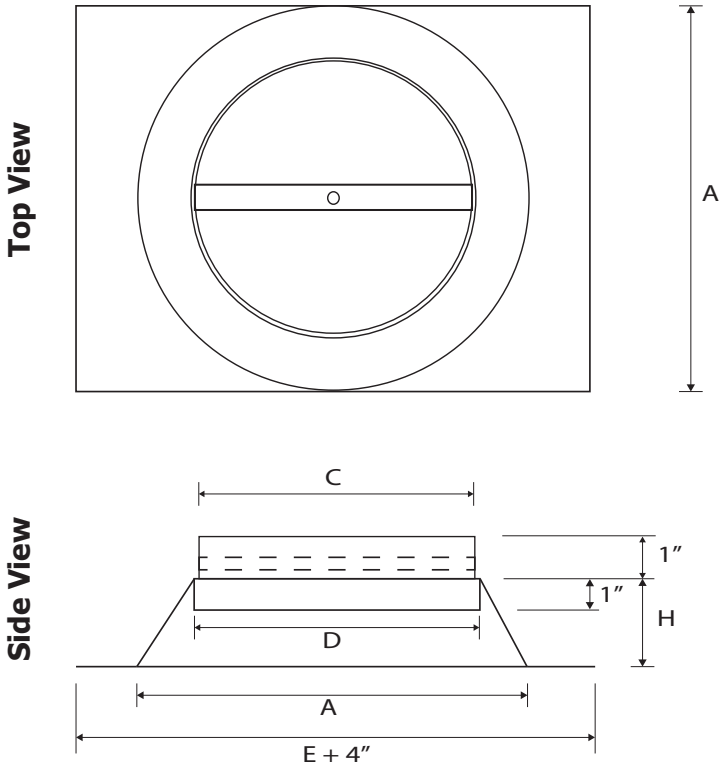
# DAAXP Series
## Drywall Adaptor For AXP Round Swirl Diffusers

**Material |** heavy gauge steel

**Ceiling Types |** Drywall

**Installation Procedure**






| Select Model | | | | | | | |
|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | D | E | H |
| | **DAAXP 05** | 5 | 7 9/16 | 4 7/8 | 5 | 9 1/16 | 2 1/2 |
| | **DAAXP 06** | 6 | 8 15/16 | 5 7/8 | 6 1/2 | 10 5/16 | 2 1/2 |
| | **DAAXP 08** | 8 | 10 5/8 | 7 7/8 | 8 | 12 1/64 | 2 1/2 |
| | **DAAXP 10** | 10 | 12 19/32 | 9 7/8 | 10 | 13 31/32 | 2 1/2 |
| | **DAAXP 12** | 12 | 15 5/64 | 11 7/8 | 12 1/2 | 16 29/64 | 3 |

All dimensions in inches (in)

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## AXP (METRIC)

REV 1

## AXP Series
## Fixed Blades Round Swirl Diffusers

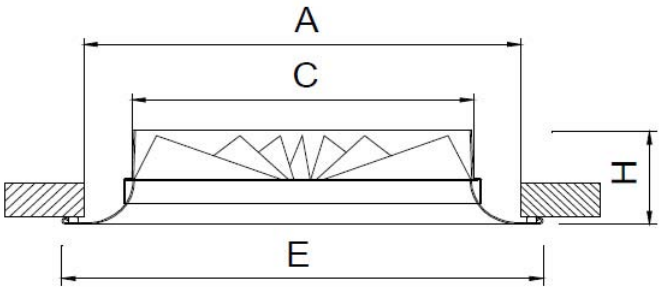


**AXP**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum

**Air Pattern |** fixed 360° swirl diffusion

**Ceiling Types |** Open and Closed




| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | **Model** | **Duct** | **A** | **C** | **E** | **H** |
| | **AXP 125** | 125 | 192 | 123 | 230 | 75 |
| | **AXP 160** | 160 | 227 | 158 | 262 | 75 |
| | **AXP 200** | 200 | 270 | 198 | 305 | 75 |
| | **AXP 250** | 250 | 320 | 248 | 355 | 75 |
| | **AXP 315** | 315 | 383 | 313 | 418 | 85 |

All dimensions in millimeters (mm)

| Options | | |
|---|---|---|
| | **EQ** | Air Equalizing Grid (Perforated Plate) |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

**BWC** REV 1

## BWC Series
### Steel Adjustable Round Ventilation Valves



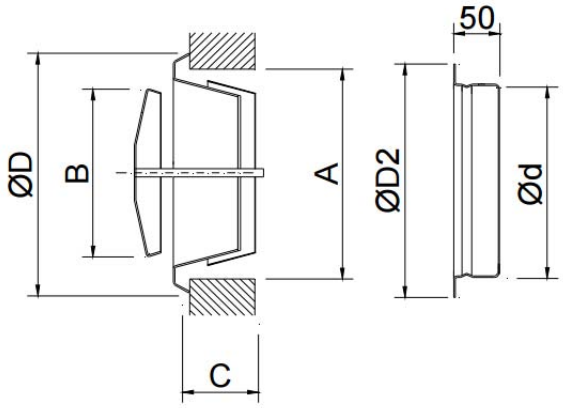
**BWC-N**

**Material |** Powder coated heavy gauge steel.

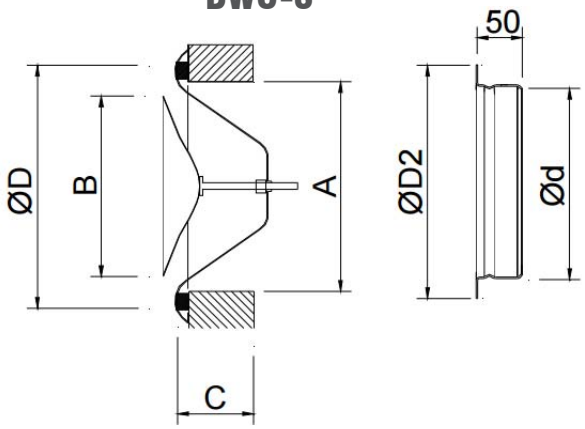
**Air Pattern |** 360° diffusion with flow adjustment.

**Ceiling Types |** Drywall and duct.

**BWC-N**




**BWC-S**




| Select Model | | | | | | | |
|---|---|---|---|---|---|---|---|
| ✓ | **Model** | **A** | **B** | **C** | **Ød** | **ØD2** | **ØD** |
| | BWC-N 04 | 4.09″ | 2.95″ | 1.57″ | 3.9″ | 4.92″ | 5.39″ |
| | BWC-N 05 | 5.08″ | 3.9″ | 1.81″ | 4.88″ | 5.91″ | 6.46″ |
| | BWC-N 06 | 6.65″ | 5.08″ | 2.13″ | 5.9″ | 6.91″ | 7.75″ |
| | BWC-N 08 | 8.23″ | 6.18″ | 2.48″ | 7.83″ | 8.85″ | 9.76″ |
| | BWC-S 04 | 4.09″ | 2.95″ | 1.57″ | 3.9″ | 4.8″ | 5.51″ |
| | BWC-S 05 | 5.08″ | 3.9″ | 1.81″ | 4.88″ | 5.83″ | 6.69″ |
| | BWC-S 06 | 6.65″ | 4.69″ | 2.13″ | 5.9″ | 6.91″ | 7.85″ |
| | BWC-S 08 | 8.23″ | 6.18″ | 2.52″ | 7.83″ | 8.85″ | 10″ |

All dimensions in inches

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# DCG Series
## Manually Adjustable Aluminum Round Diffusers

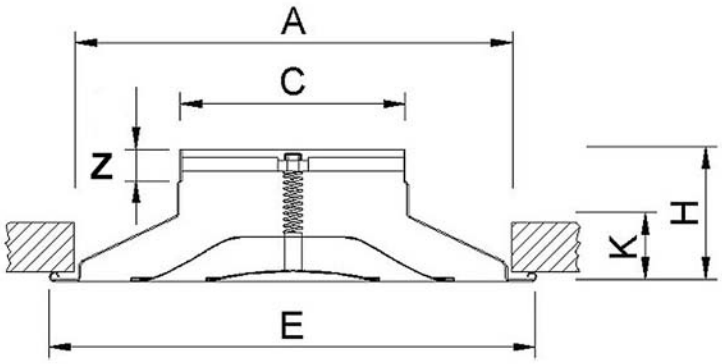


**DCG**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

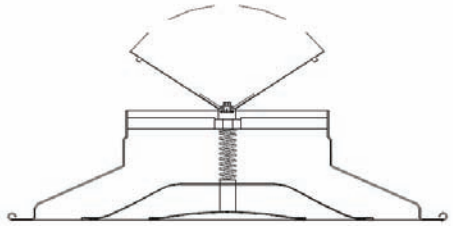
**Air Pattern |** 360° diffusion with vertical throw adjustment.

**Ceiling Types |** Open and Closed.

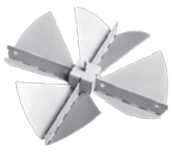



| Select Model | | | | | | | |
|---|---|---|---|---|---|---|---|
| ✓ | Model | A | C | E | H | K | Z |
| | DCG 06 | 11 59/64 | 5 3/4 | 13 5/16 | 4 15/16 | 1 47/64 | 1 |
| | DCG 08 | 15 5/32 | 7 3/4 | 16 47/64 | 4 17/32 | 2 9/32 | 1 |
| | DCG 10 | 18 17/64 | 9 3/4 | 19 3/8 | 4 31/64 | 2 1/4 | 1 |
| | DCG 12 | 22 13/64 | 11 3/4 | 23 17/64 | 6 19/32 | 3 5/32 | 1 |
| | DCG 14 | 24 13/16 | 13 29/32 | 26 1/16 | 5 33/64 | 3 17/64 | 1 |
| | DCG 16 | 24 13/16 | 15 43/64 | 26 1/16 | 5 5/32 | 2 59/64 | 1 |
| | DCG 18 | 31 7/32 | 17 19/32 | 32 3/4 | 6 13/16 | 4 11/64 | 1 |
| | DCG 20 | 31 7/32 | 19 9/16 | 32 3/4 | 6 27/64 | 3 13/16 | 1 |

All dimensions in inches



**DCG-R3G**
Integrated Butterfly Volume Damper
**(N/A for 6" and 12")**



**OBD**
Opposed Blade Damper



**RSBD**
Radial Sliding Blade Damper

**(both only for 6" and 12")**

| Select Model | |
|---|---|
| ✓ | Model |
| | DCG-R3G 08 |
| | DCG-R3G 10 |
| | DCG-R3G 14 |
| | DCG-R3G 16 |
| | DCG-R3G 18 |
| | DCG-R3G 20 |

| Select Model | |
|---|---|
| ✓ | Model |
| | DCG-OBD 06 |
| | DCG-OBD 12 |

| Select Model | |
|---|---|
| ✓ | Model |
| | DCG-RSBD 06 |
| | DCG-RSBD 12 |

| Select Finish | |
|---|---|
| | Powder Coated White |
| | Other (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## DCG (METRIC) REV 1

## DCG Series
### Manually Adjustable Aluminum Round Diffuser

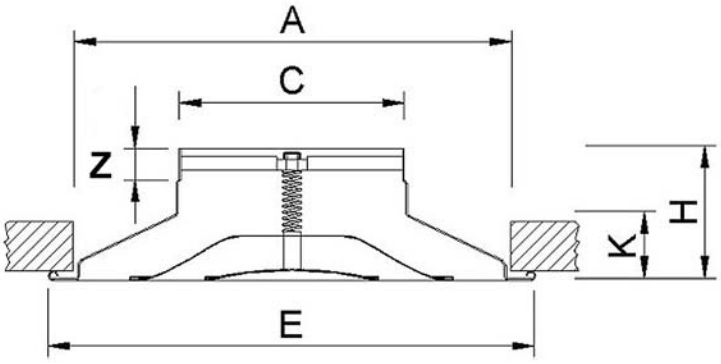


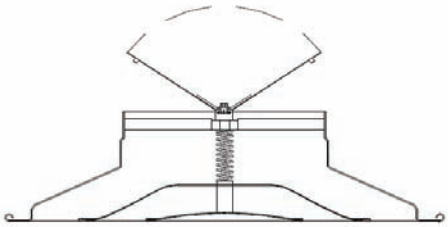
**DCG**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** 360° diffusion with vertical throw adjustment.

**Ceiling Types |** Open and Closed.



**DCG-R3G**
Integrated Butterfly Volume Damper

| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H | K | Z | Model | ✓ |
| | **DCG 160** | 160 | 303 | 157 | 331 | 101 | 44 | 25 | **DCG-R3G 160** | |
| | **DCG 200** | 200 | 385 | 197 | 425 | 115 | 58 | 25 | **DCG-R3G 200** | |
| | **DCG 250** | 250 | 464 | 247 | 492 | 114 | 57 | 25 | **DCG-R3G 250** | |
| | **DCG 315** | 315 | 564 | 313 | 591 | 137 | 80 | 25 | **DCG-R3G 315** | |
| | **DCG 355** | 355 | 630 | 353 | 662 | 140 | 83 | 25 | **DCG-R3G 355** | |
| | **DCG 400** | 400 | 630 | 398 | 662 | 131 | 74 | 25 | **DCG-R3G 400** | |
| | **DCG 450** | 450 | 793 | 447 | 832 | 173 | 106 | 25 | **DCG-R3G 450** | |
| | **DCG 500** | 500 | 793 | 497 | 832 | 163 | 97 | 25 | **DCG-R3G 500** | |

All dimensions in millimeters (mm)

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# DCG-ACTIF Series

## Thermodynamic Aluminum Round Diffuser



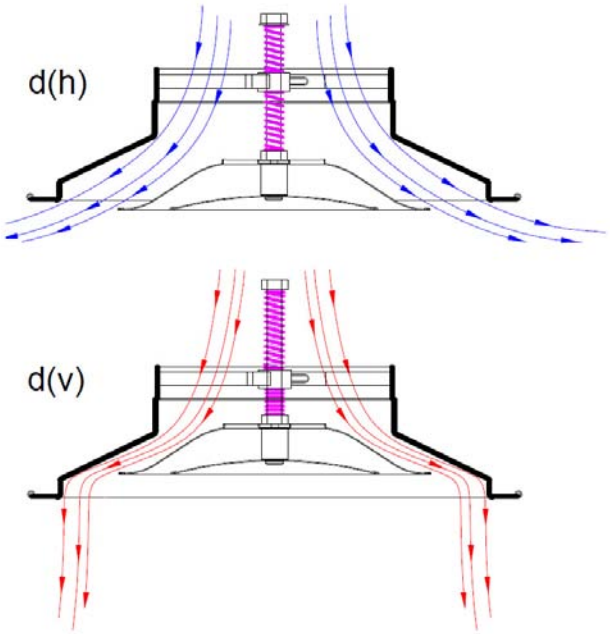
DCG-ACTIF
by MADEL®

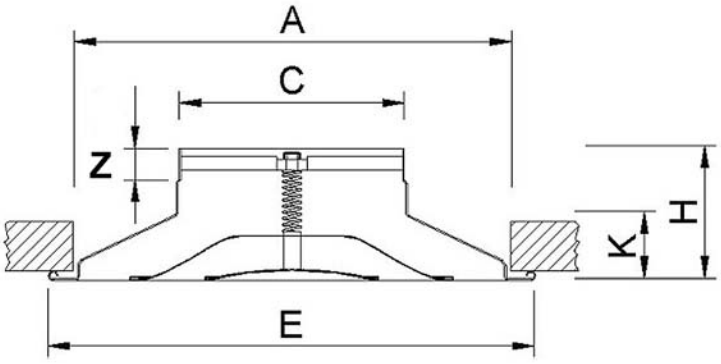
**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** 360° diffusion with horitonztal to vertical flow adjustment, autonomously adjusted by means of a thermodynamic spring.

**Ceiling Types |** Open and Closed.

ACTIF

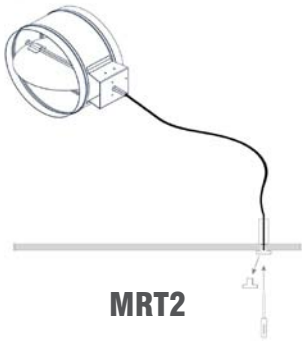



| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H | K | Z |
| | DCG-ACTIF 06 | 6 | 11 59/64 | 5 3/4 | 13 5/16 | 4 15/16 | 1 47/64 | 1 |
| | DCG-ACTIF 08 | 8 | 15 5/32 | 7 3/4 | 16 47/64 | 4 17/32 | 2 9/32 | 1 |
| | DCG-ACTIF 10 | 10 | 18 17/64 | 9 3/4 | 19 3/8 | 4 31/64 | 2 1/4 | 1 |
| | DCG-ACTIF 12 | 12 | 22 13/64 | 11 3/4 | 23 17/64 | 6 19/32 | 3 5/32 | 1 |

All dimensions in inches (in)

## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for DCG-ACTIF diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

# DCG-ACTIF Series

## Thermodynamic Aluminum Round Diffuser



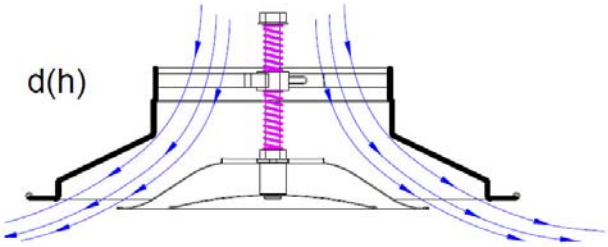
DCG-ACTIF
by MADEL®

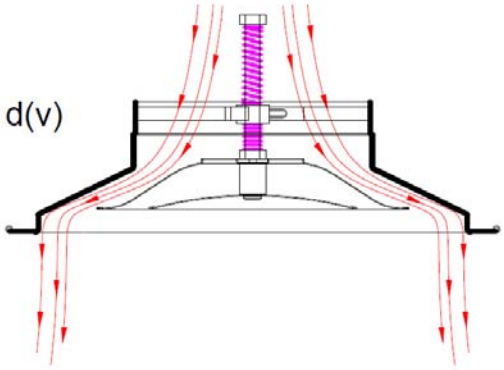
**Material |** Powder coated heavy gauge spun aluminum.

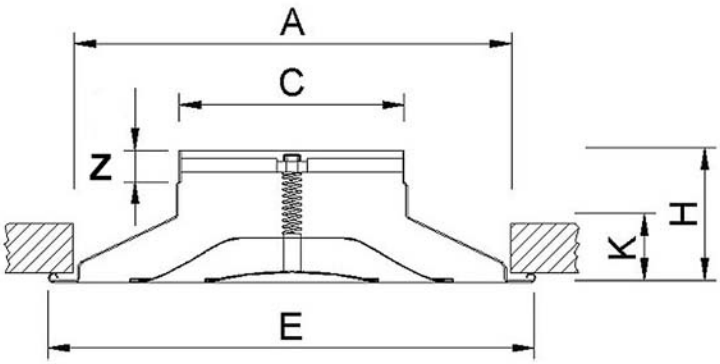
**Air Pattern |** 360° diffusion with horitonztal to vertical flow adjustment, autonomously adjusted by means of a thermodynamic spring.

**Ceiling Types |** Open and Closed.

ACTIF



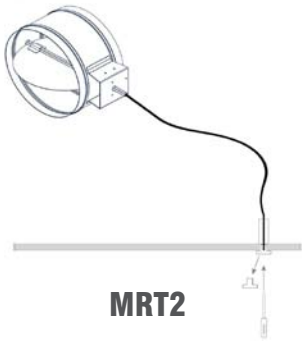




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H | K | Z |
| | **DCG-ACTIF 160** | 160 | 303 | 157 | 331 | 101 | 44 | 25 |
| | **DCG-ACTIF 200** | 200 | 385 | 197 | 425 | 115 | 58 | 25 |
| | **DCG-ACTIF 250** | 250 | 464 | 247 | 492 | 114 | 57 | 25 |
| | **DCG-ACTIF 315** | 315 | 564 | 313 | 591 | 137 | 80 | 25 |

All dimensions in millimeters (mm)

## Air Volume Dampers



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**No cable length limitation, recommended for DCG-ACTIF diffusers installed in high ceilings**

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Powder Coated White (RAL 9016) |
| | Mill Finish |
| | Other RAL (specify) : |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

# DCG-M150-L Series

## Actuator Ready Adjustable Aluminum Round Diffusers

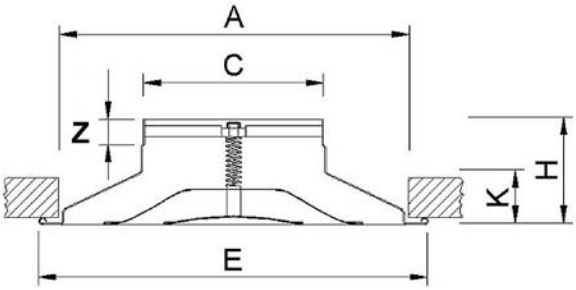


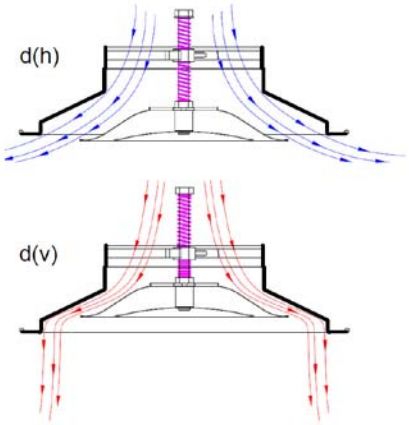
DCG-M150-L
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** 360° diffusion with vertical throw adjustment.

**Ceiling Types |** Open and Closed.




| Select Model | | | | | | | |
|---|---|---|---|---|---|---|---|
| ✓ | Model | A | C | E | H | K | Z |
| | DCG-M150-L 06 | 11 59/64 | 5 3/4 | 13 5/16 | 4 15/16 | 1 47/64 | 1 |
| | DCG-M150-L 08 | 15 5/32 | 7 3/4 | 16 47/64 | 4 17/32 | 2 9/32 | 1 |
| | DCG-M150-L 10 | 18 17/64 | 9 3/4 | 19 3/8 | 4 31/64 | 2 1/4 | 1 |
| | DCG-M150-L 12 | 22 13/64 | 11 3/4 | 23 17/64 | 6 19/32 | 3 5/32 | 1 |
| | DCG-M150-L 14 | 24 13/16 | 13 29/32 | 26 1/16 | 5 33/64 | 3 17/64 | 1 |
| | DCG-M150-L 16 | 24 13/16 | 15 43/64 | 26 1/16 | 5 5/32 | 2 59/64 | 1 |
| | DCG-M150-L 18 | 31 7/32 | 17 19/32 | 32 3/4 | 6 13/16 | 4 11/64 | 1 |
| | DCG-M150-L 20 | 31 7/32 | 19 9/16 | 32 3/4 | 6 27/64 | 3 13/16 | 1 |

All dimensions in inches

| Select Finish | |
|---|---|
| | Powder Coated White |
| | Other (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## DSO Series

### Manually Adjustable Aluminum Round Diffusers



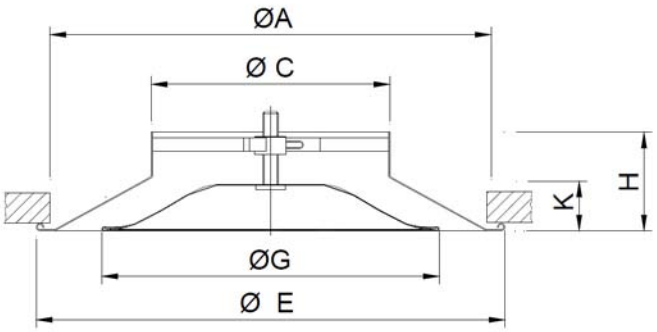
**DSO**

by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

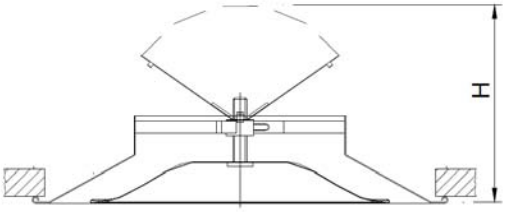
**Air Pattern |** 360° diffusion with vertical throw adjustment.

**Ceiling Types |** Open and Closed.




| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | **Model** | **A** | **C** | **E** | **H** | **K** |
| | **DSO 06** | 11 13/16 | 5 3/4 | 12 51/64 | 4 15/16 | 1 47/64 |
| | **DSO 08** | 15 43/54 | 7 3/4 | 16 47/64 | 4 17/32 | 2 9/32 |
| | **DSO 10** | 19 11/64 | 9 3/4 | 20 5/64 | 5 3/64 | 2 53/64 |
| | **DSO 12** | 21 21/32 | 11 3/4 | 22 41/64 | 6 19/32 | 3 5/32 |

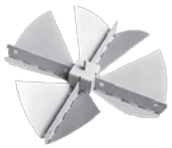
All dimensions in inches




**DSO-R3G**

Integrated Butterfly Volume Damper

**(N/A for 6" and 12")**



**OBD**

Opposed Blade Damper



**RSBD**

Radial Sliding Blade Damper

**(both only for 6" and 12")**

| Select Model | |
|---|---|
| ✓ | **Model** |
| | **DSO-R3G 08** |
| | **DSO-R3G 10** |
| | **DSO-OBD 06** |
| | **DSO-OBD 12** |
| | **DSO-RSBD 06** |
| | **DSO-RSBD 12** |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## DSO (METRIC) REV 1

## DSO Series

### Manually Adjustable Aluminum Round Diffuser

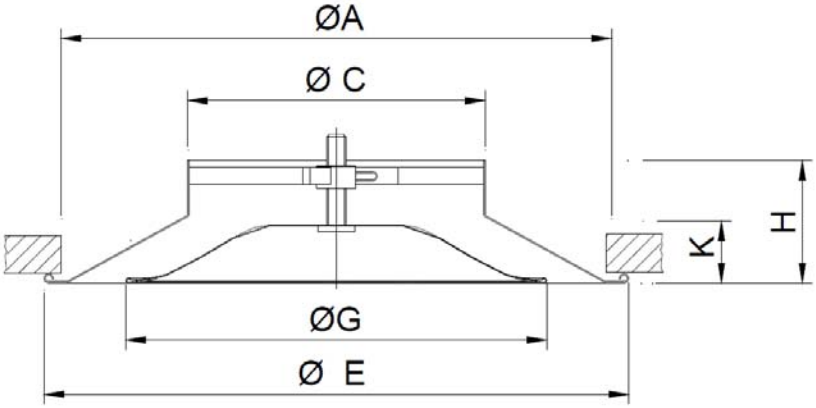


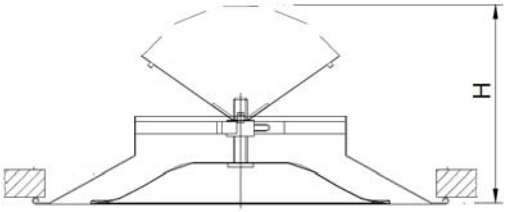
**DSO**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** 360° diffusion with vertical throw adjustment.

**Ceiling Types |** Open and Closed.




**DSO-R3G**
Integrated Butterfly Volume Damper

| Select Model | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct | A | C | E | H | K | Model | ✓ |
| | **DSO 160** | 160 | 300 | 157 | 325 | 101 | 44 | **DSO-R3G 160** | |
| | **DSO 200** | 200 | 398 | 197 | 425 | 115 | 58 | **DSO-R3G 200** | |
| | **DSO 250** | 250 | 487 | 248 | 510 | 128 | 72 | **DSO-R3G 250** | |
| | **DSO 315** | 315 | 550 | 313 | 575 | 137 | 80 | **DSO-R3G 315** | |

All dimensions in millimeters (mm)

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# DSO-MOD Series

## Manually Adjustable Aluminum Round Diffusers

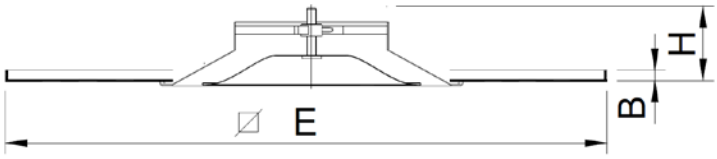


**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** 360° diffusion with vertical throw adjustment.

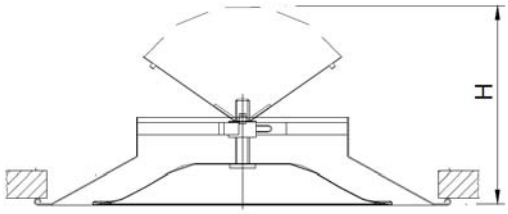
**Ceiling Types |** Open and Closed.

**DSO-MOD**
by MADEL®




| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | B | E | H |
| | DSO-MOD 06 | 15/32 | 23 3/4 | 4 15/16 |
| | DSO-MOD 08 | 15/32 | 23 3/4 | 4 17/32 |
| | DSO-MOD 10 | 15/32 | 23 3/4 | 5 3/64 |
| | DSO-MOD 12 | 15/32 | 23 3/4 | 6 19/32 |

All dimensions in inches
For other dimensions see DSO




**DSO-R3G**
Integrated Butterfly Volume Damper
**(N/A for 6" and 12")**



**OBD**
Opposed Blade Damper



**RSBD**
Radial Sliding Blade Damper

**(both only for 6" and 12")**

| Select Model | |
|---|---|
| ✓ | Model |
| | DSO-MOD-R3G 08 |
| | DSO-MOD-R3G 10 |
| | DSO-MOD-OBD 06 |
| | DSO-MOD-OBD 12 |
| | DSO-MOD-RSBD 06 |
| | DSO-MOD-RSBD 12 |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# KAM-D Series

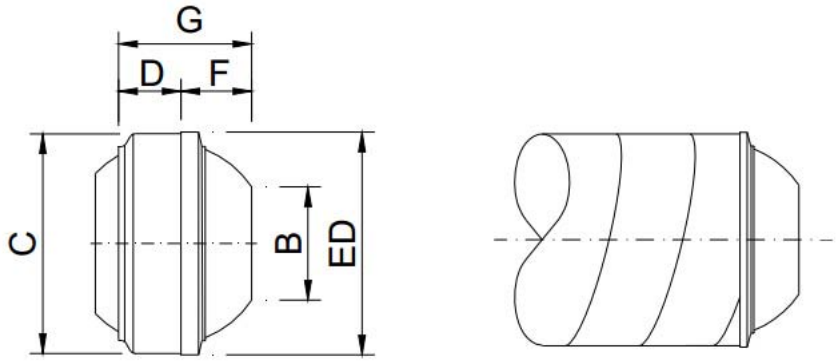
## Manually Adjustable Jet Nozzle, Duct Mounted



**KAM-D**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** Adjustable directional jet, long throw.




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | C | D | ED | F | G |
| | **KAM-D 05** | 5″D | 2 13/32" | 4 27/32" | 2 11/64" | 4 61/64" | 1 1/16" | 3 11/32" |
| | **KAM-D 06** | 6.5″D | 3 5/32" | 6 7/32" | 2 11/64" | 6 3/8" | 1 11/32" | 3 5/8" |
| | **KAM-D 08** | 8″D | 4 1/64" | 7 51/64" | 2 29/32" | 7 63/64" | 1 37/64" | 4 51/64" |
| | **KAM-D 10** | 10″D | 5 1/8" | 9 49/64" | 3 57/64" | 9 61/64" | 1 57/64" | 6 7/32" |
| | **KAM-D 12** | 12.5″D | 6 17/32" | 12 21/64" | 4 61/64" | 12 19/32" | 2 1/4" | 7 23/32" |
| | **KAM-D 16** | 16″D | 8 11/32" | 15 43/64" | 6 3/8" | 15 29/32" | 2 61/64" | 10 9/32" |

All dimensions in inches (in)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## KAM-D (METRIC) REV 2

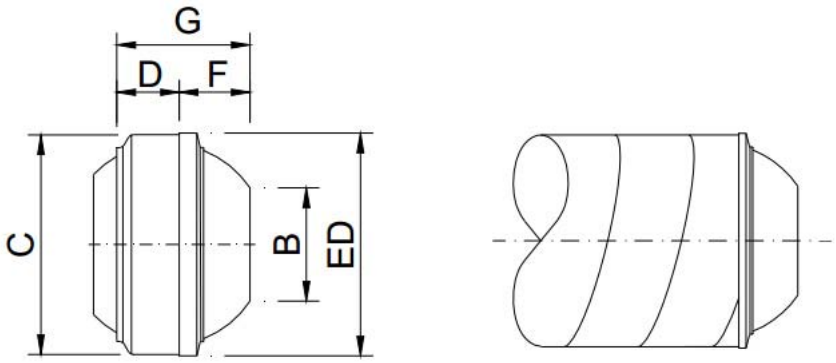
## KAM-D Series
### Manually Adjustable Jet Nozzle, Duct Mounted



**KAM-D**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** Adjustable directional jet, long throw.




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | C | D | ED | F | G |
| | **KAM-D 125** | 125 | 61 | 123 | 55 | 126 | 27 | 85 |
| | **KAM-D 160** | 160 | 80 | 158 | 55 | 162 | 34 | 92 |
| | **KAM-D 200** | 200 | 102 | 198 | 74 | 203 | 40 | 122 |
| | **KAM-D 250** | 250 | 130 | 248 | 99 | 253 | 48 | 158 |
| | **KAM-D 315** | 315 | 166 | 313 | 126 | 320 | 57 | 196 |
| | **KAM-D 400** | 400 | 212 | 398 | 162 | 404 | 75 | 261 |

All dimensions in millimeters (mm)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## KAM-D-ACTIF

REV 1

## KAM-D-ACTIF Series

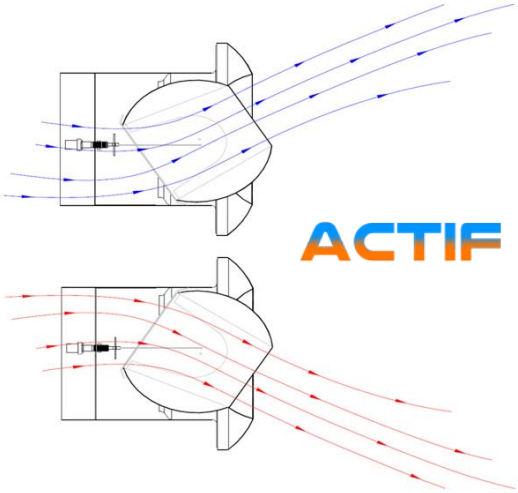
### Thermodynamic Nozzle Jet Diffuser - Duct Mounting

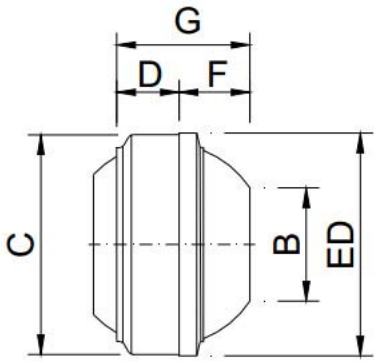


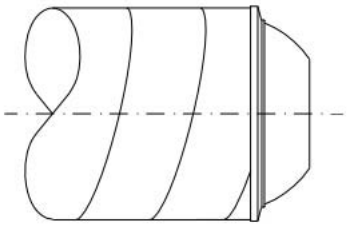
**KAM-D-ACTIF**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** Thermally adjustable directional jet, long throw. Horizontal jet is autonomously thermally adjusted up and down by means of a thermodynamic piston.



| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | C | D | ED | F | G |
| | **KAM-D-ACTIF 08** | 8″D | 4 1/64" | 7 51/64" | 2 29/32" | 7 63/64" | 1 37/64" | 4 51/64" |
| | **KAM-D-ACTIF 10** | 10″D | 5 1/8" | 9 49/64" | 3 57/64" | 9 61/64" | 1 57/64" | 6 7/32" |
| | **KAM-D-ACTIF 12** | 12.5″D | 6 17/32" | 12 21/64" | 4 61/64" | 12 19/32" | 2 1/4" | 7 23/32" |

All dimensions in inches (in)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## KAM-D-ACTIF Series

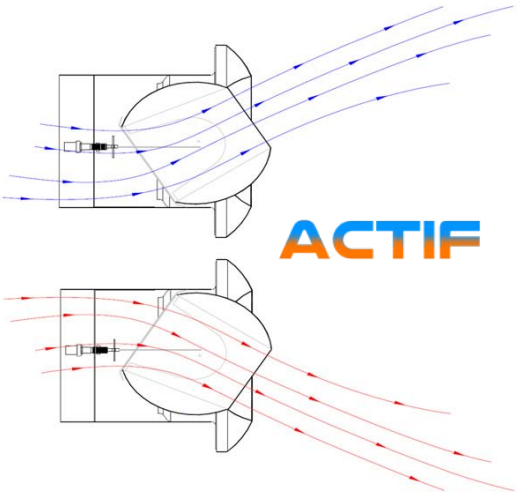
### Thermodynamic Nozzle Jet Diffuser - Duct Mounting

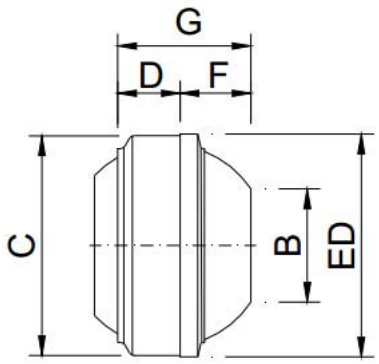


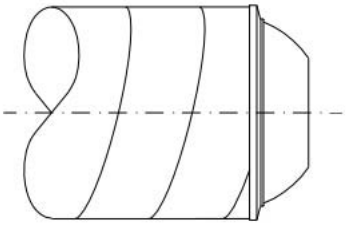
**KAM-D-ACTIF**
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** Thermally adjustable directional jet, long throw. Horizontal jet is autonomously thermally adjusted up and down by means of a thermodynamic piston.



| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | C | D | ED | F | G |
| | **KAM-D-ACTIF 200** | 200 | 102 | 198 | 74 | 203 | 40 | 122 |
| | **KAM-D-ACTIF 250** | 250 | 130 | 248 | 99 | 253 | 48 | 158 |
| | **KAM-D-ACTIF 315** | 315 | 166 | 313 | 126 | 320 | 57 | 196 |

All dimensions in millimeters (mm)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# KAM-D-M5 Series

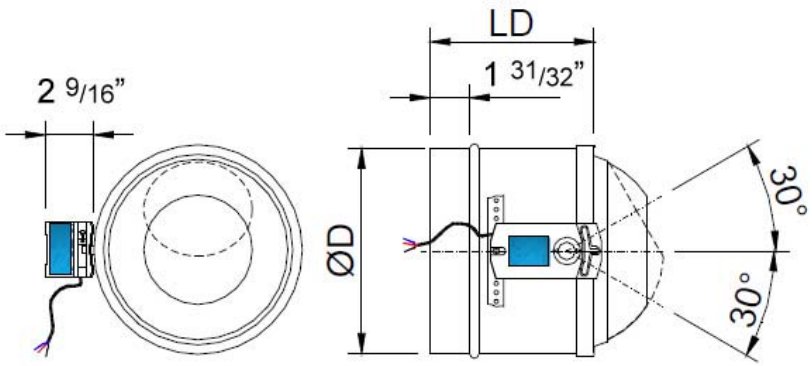
## Jet Nozzle For Duct Mounting
## Adjusted by On/Off Actuator

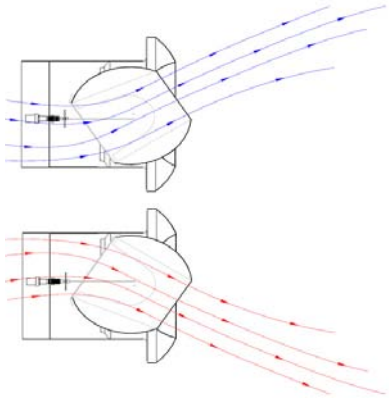


KAM-D
by MADEL®

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** Adjustable directional jet, long throw. Horizontal jet is adjusted up and down by means of an On/Off Actuator.



| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **Duct Size** | **LD** |
| | **KAM-D-M5 10** | 10″D | 9 49/64" |
| | **KAM-D-M5 12** | 12.5″D | 12 21/64" |
| | **KAM-D-M5 14** | 14″D | 15 43/64" |

All dimensions in inches (in)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## KAM-W

REV 3

## KAM-W Series

### Manually Adjustable Jet Nozzle, Surface Mounted



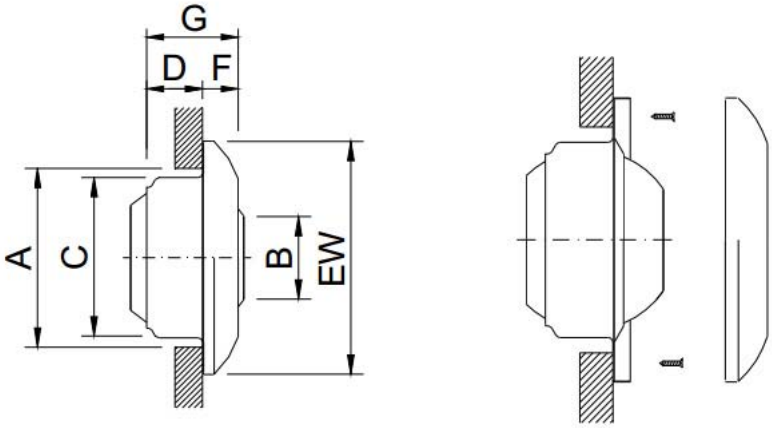
**KAM-W**

**by MADEL®**

**PATENTED**

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** Adjustable directional jet, long throw.




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | **Model** | **Duct Size A** | **B** | **C** | **D** | **EW** | **F** | **G** |
| | **KAM-W 05** | 5″D | 2 13/32" | 4 27/32" | 2 11/64" | 7 1/8" | 1 1/16" | 3 11/32" |
| | **KAM-W 06** | 6.5″D | 3 5/32" | 6 7/32" | 2 11/64" | 9 3/32" | 1 11/32" | 3 5/8" |
| | **KAM-W 08** | 8″D | 4 1/64" | 7 51/64" | 2 29/32" | 11 3/8" | 1 37/64" | 4 51/64" |
| | **KAM-W 10** | 10″D | 5 1/8" | 9 49/64" | 3 57/64" | 14 9/64" | 1 57/64" | 6 7/32" |
| | **KAM-W 12** | 12.5″D | 6 17/32" | 12 21/64" | 4 61/64" | 17 53/64" | 2 1/4" | 7 23/32" |
| | **KAM-W 16** | 16″D | 8 11/32" | 15 43/64" | 6 3/8" | 22 41/64" | 2 61/64" | 10 9/32" |

All dimensions in inches (in)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## KAM-W (METRIC) REV 2

## KAM-W Series
### Manually Adjustable Jet Nozzle, Surface Mounted

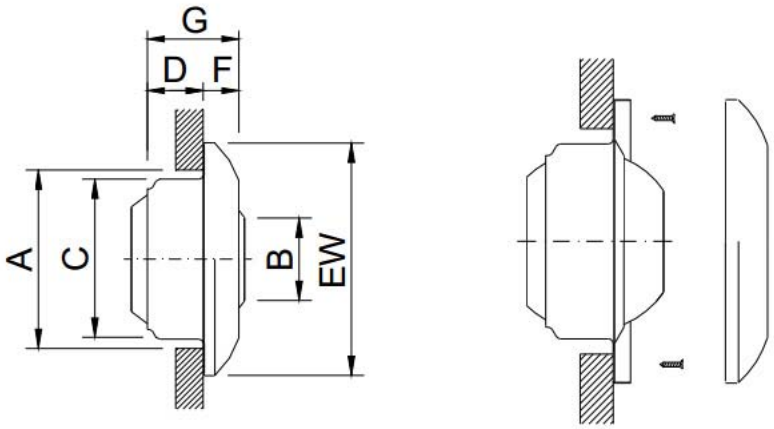


**KAM-W**
by MADEL®

**PATENTED**

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** Adjustable directional jet, long throw.




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size A | B | C | D | EW | F | G |
| | **KAM-W 125** | 125 | 61 | 123 | 55 | 181 | 27 | 85 |
| | **KAM-W 160** | 160 | 80 | 158 | 55 | 231 | 34 | 92 |
| | **KAM-W 200** | 200 | 102 | 198 | 74 | 289 | 40 | 122 |
| | **KAM-W 250** | 250 | 130 | 248 | 99 | 359 | 48 | 158 |
| | **KAM-W 315** | 315 | 166 | 313 | 126 | 453 | 57 | 196 |
| | **KAM-W 400** | 400 | 212 | 398 | 162 | 575 | 75 | 261 |

All dimensions in millimeters (mm)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## KAM-W-ACTIF

REV 1

## KAM-W-ACTIF Series

### Thermodynamic Nozzle Jet Diffuser - Surface Mounting

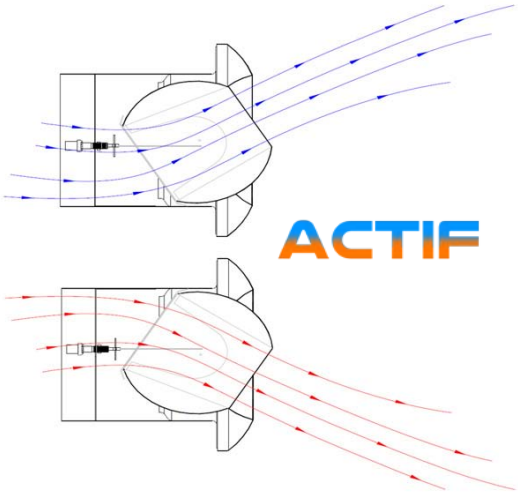


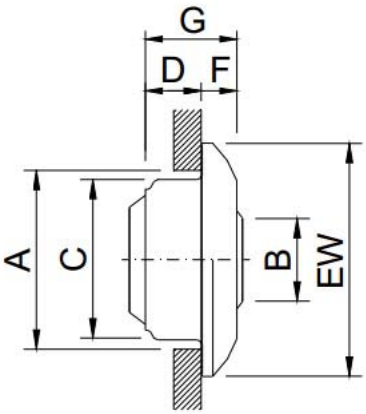
**Material |** Powder coated heavy gauge spun aluminum.

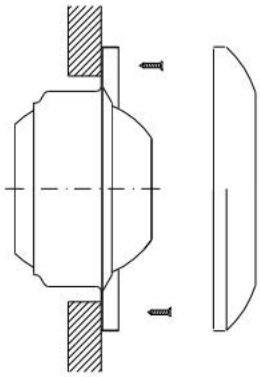
**Air Pattern |** Thermally adjustable directional jet, long throw. Horizontal jet is autonomously thermally adjusted up and down by means of a thermodynamic piston.

**PATENTED**

**KAM-W-ACTIF**
by MADEL®



| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size A | B | C | D | EW | F | G |
| | **KAM-W-ACTIF 08** | 8"D | 4 1/64" | 7 51/64" | 2 29/32" | 11 3/8" | 1 37/64" | 4 51/64" |
| | **KAM-W-ACTIF 10** | 10"D | 5 1/8" | 9 49/64" | 3 57/64" | 14 9/64" | 1 57/64" | 6 7/32" |
| | **KAM-W-ACTIF 12** | 12.5"D | 6 17/32" | 12 21/64" | 4 61/64" | 17 53/64" | 2 1/4" | 7 23/32" |

All dimensions in inches (in)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## KAM-W-ACTIF (METRIC) REV 1

## KAM-W-ACTIF Series

### Thermodynamic Nozzle Jet Diffuser - Surface Mounting

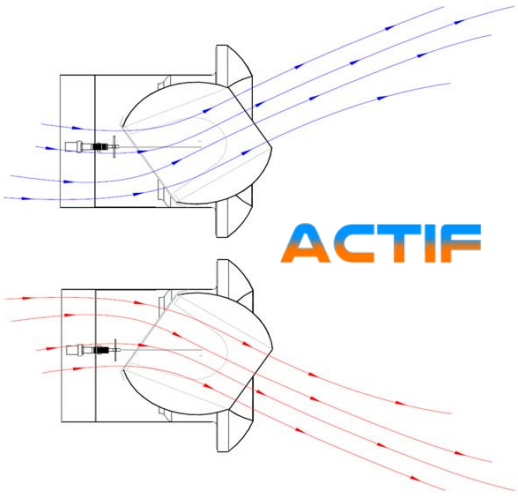


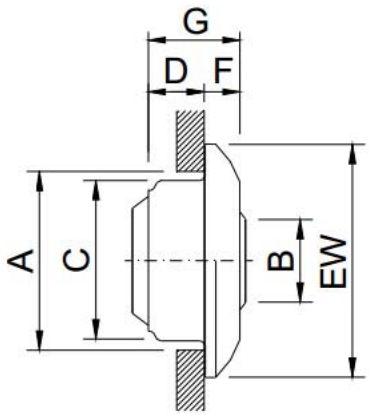
**Material |** Powder coated heavy gauge spun aluminum.

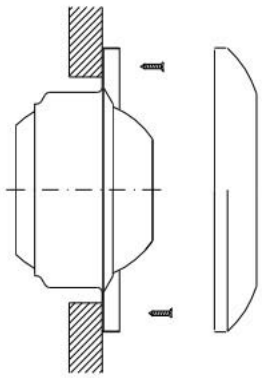
**Air Pattern |** Thermally adjustable directional jet, long throw. Horizontal jet is autonomously thermally adjusted up and down by means of a thermodynamic piston.

**PATENTED**

**KAM-W-ACTIF**
**by MADEL®**



| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size A | B | C | D | EW | F | G |
| | **KAM-W-ACTIF 200** | 200 | 102 | 198 | 74 | 289 | 40 | 122 |
| | **KAM-W-ACTIF 250** | 250 | 130 | 248 | 99 | 359 | 48 | 158 |
| | **KAM-W-ACTIF 315** | 315 | 166 | 313 | 126 | 453 | 57 | 196 |

All dimensions in millimeters (mm)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## KAM-W-M5

REV 1

## KAM-W-M5 Series
### Jet Nozzle Diffuser - Surface Mount
### Adjusted by On/Off Actuator

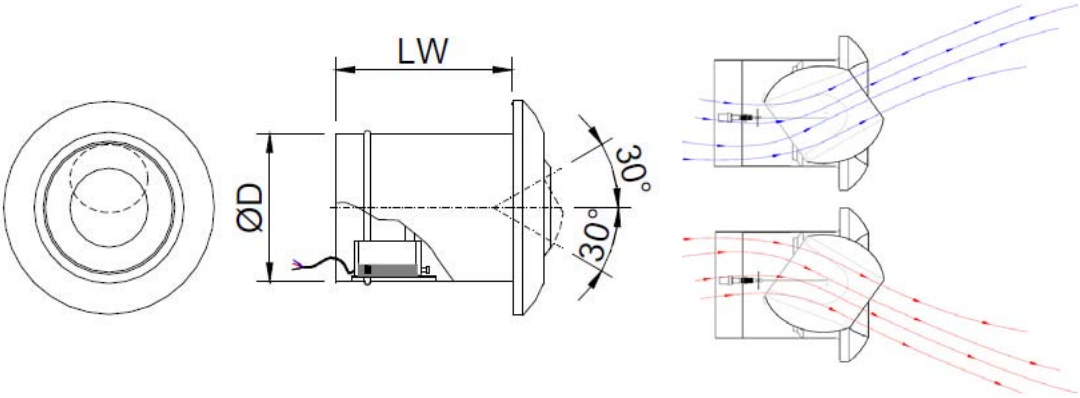


**KAM-W-M5**
by MADEL®

**PATENTED**

**Material |** Powder coated heavy gauge spun aluminum.

**Air Pattern |** Adjustable directional jet, long throw. Horizontal jet is adjusted up and down by means of an On/Off Actuator.




| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **Duct Size** | **LW** |
| | **KAM-W-M5 10** | 10″D | 5 1/8" |
| | **KAM-W-M5 12** | 12.5″D | 6 17/32" |
| | **KAM-W-M5 14** | 14″D | 8 11/32" |

All dimensions in inches (in)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

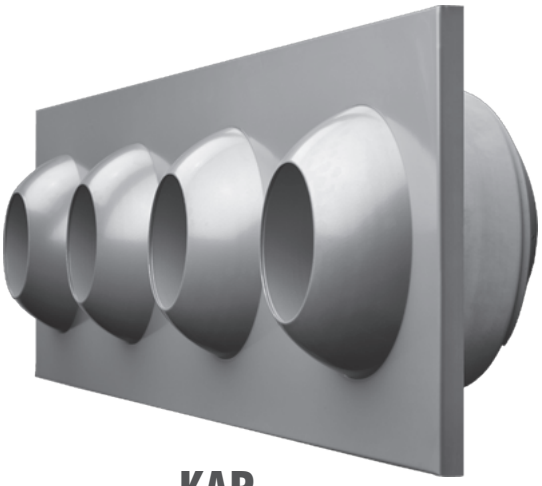
# SUBMITTAL

## KAP

REV 0

## KAP Series

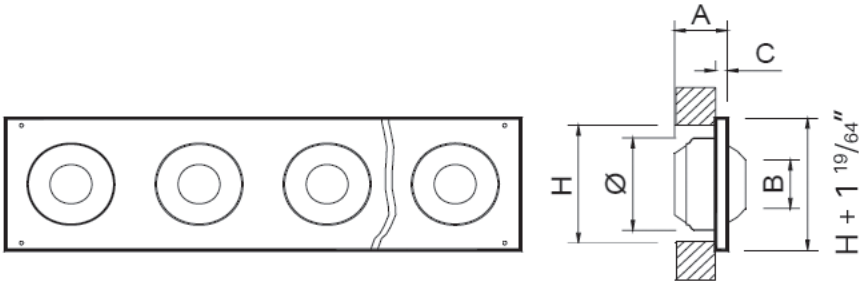
## Adjustable Long Throw Jet Nozzle Diffuser Panel

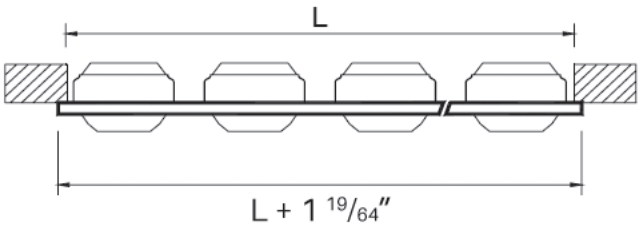


**KAP**
by MADEL®

**Materials |** Powder coated heavy gauge spun aluminum nozzles and galanized steel panel.

**Air Pattern |** Adjustable multi-directional jets, long throw.




| Select Dimension | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | List Size L x H | Nozzles Qty | Ø | A | B | C |
| | **20" x 8"** | 2 | 6 1/4" | 3 35/64" | 3 5/32" | 25/64" |
| | **32" x 8"** | 3 | 6 1/4" | 3 35/64" | 3 5/32" | 25/64" |
| | **40" x 8"** | 5 | 6 1/4" | 3 35/64" | 3 5/32" | 25/64" |
| | **60" x 8"** | 7 | 6 1/4" | 3 35/64" | 3 5/32" | 25/64" |
| | **80" x 8"** | 9 | 6 1/4" | 3 35/64" | 3 5/32" | 25/64" |
| | **20" x 10"** | 2 | 8" | 4 17/32" | 4 1/64" | 25/64" |
| | **32" x 10"** | 3 | 8" | 4 17/32" | 4 1/64" | 25/64" |
| | **40" x 10"** | 4 | 8" | 4 17/32" | 4 1/64" | 25/64" |
| | **60" x 10"** | 6 | 8" | 4 17/32" | 4 1/64" | 25/64" |
| | **80" x 10"** | 7 | 8" | 4 17/32" | 4 1/64" | 25/64" |
| | **32" x 12"** | 2 | 10" | 4 59/64" | 5 1/8" | 19/32" |
| | **40" x 12"** | 3 | 10" | 4 59/64" | 5 1/8" | 19/32" |
| | **60" x 12"** | 4 | 10" | 4 59/64" | 5 1/8" | 19/32" |
| | **80" x 12"** | 6 | 10" | 4 59/64" | 5 1/8" | 19/32" |
| | **32" x 16"** | 2 | 12.5" | 7 3/32" | 6 17/32" | 19/32" |
| | **40" x 16"** | 2 | 12.5" | 7 3/32" | 6 17/32" | 19/32" |
| | **60" x 16"** | 3 | 12.5" | 7 3/32" | 6 17/32" | 19/32" |
| | **80" x 16"** | 4 | 12.5" | 7 3/32" | 6 17/32" | 19/32" |

All dimensions in inches (in)

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## KAP (METRIC)

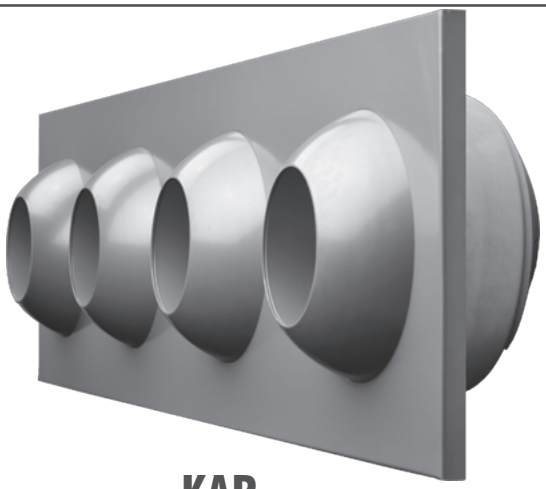
REV 0

## KAP Series

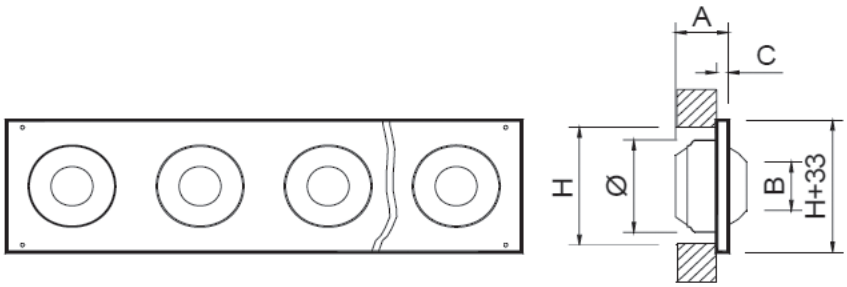
## Adjustable Long Throw Jet Nozzle Diffuser Panel

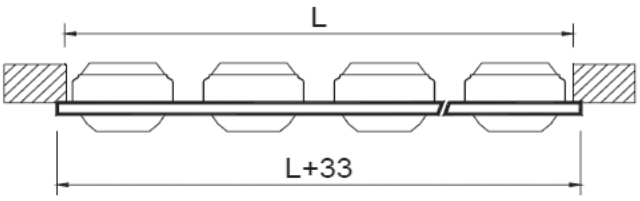
**Materials |** Powder coated heavy gauge spun aluminum nozzles and galanized steel panel.

**Air Pattern |** Adjustable multi-directional jets, long throw.



**KAP**
by MADEL®




| Select Dimension | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | List Size L x H | Nozzles Qty | Ø | A | B | C |
| | 500 x 200 | 2 | 160 | 90 | 80 | 10 |
| | 800 x 200 | 3 | 160 | 90 | 80 | 10 |
| | 1000 x 200 | 5 | 160 | 90 | 80 | 10 |
| | 1500 x 200 | 7 | 160 | 90 | 80 | 10 |
| | 2000 x 200 | 9 | 160 | 90 | 80 | 10 |
| | 500 x 250 | 2 | 200 | 115 | 102 | 10 |
| | 800 x 250 | 3 | 200 | 115 | 102 | 10 |
| | 1000 x 250 | 4 | 200 | 115 | 102 | 10 |
| | 1500 x 250 | 6 | 200 | 115 | 102 | 10 |
| | 2000 x 250 | 7 | 200 | 115 | 102 | 10 |
| | 800 x 300 | 2 | 250 | 125 | 130 | 15 |
| | 1000 x 300 | 3 | 250 | 125 | 130 | 15 |
| | 1500 x 300 | 4 | 250 | 125 | 130 | 15 |
| | 2000 x 300 | 6 | 250 | 125 | 130 | 15 |
| | 800 x 400 | 2 | 315 | 180 | 166 | 15 |
| | 1000 x 400 | 2 | 315 | 180 | 166 | 15 |
| | 1500 x 400 | 3 | 315 | 180 | 166 | 15 |
| | 2000 x 400 | 4 | 315 | 180 | 166 | 15 |

All dimensions in mm

| Select Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **RAL xxxx** | Please Specify: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## KIS Series

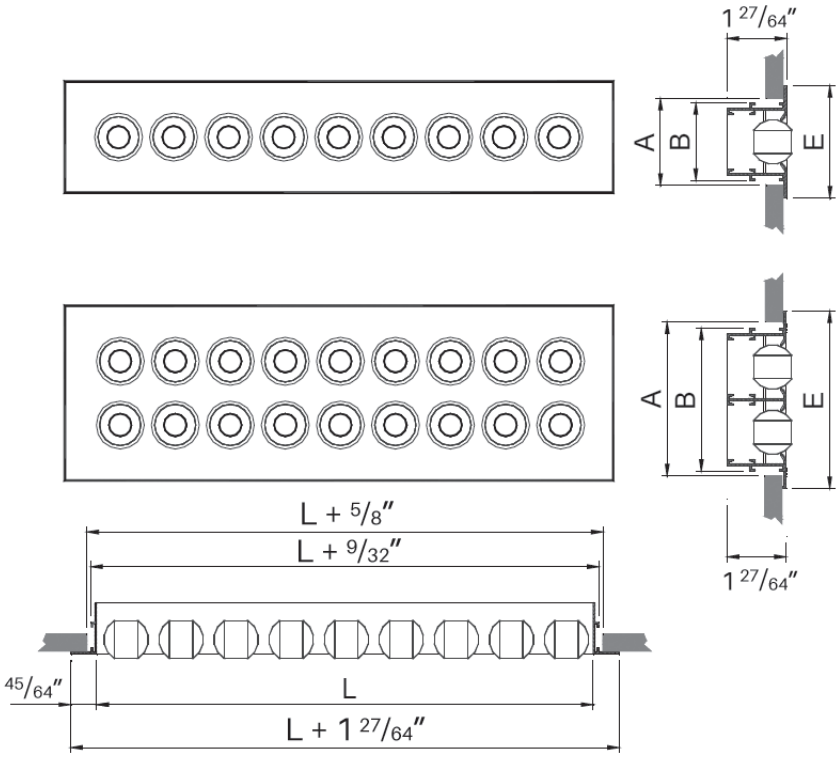
## Adjustable Linear Micro-Nozzle Jet Diffusers



**KIS**
by MADEL®

**Material |** Aluminum face and plastic nozzles

**Air Pattern |** Long throw, adjustable directional jet



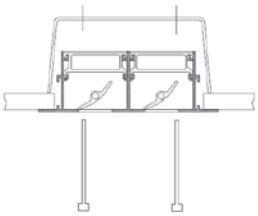

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | E | A | B |
| | KIS 1 | 2 43/64" | 2 11/64" | 1 27/32" |
| | KIS 2 | 4 7/32" | 3 47/64" | 3 25/64" |

All dimensions in in

| Mounting | | |
|---|---|---|
| | PL | Concealed Spring Clips (requires PLSD) |
| | PM | Concealed U Clip |

## PM Mounting Kit

PM Mounting Kit consists of C shaped clips with long screws. Recommended for installation without plenum.

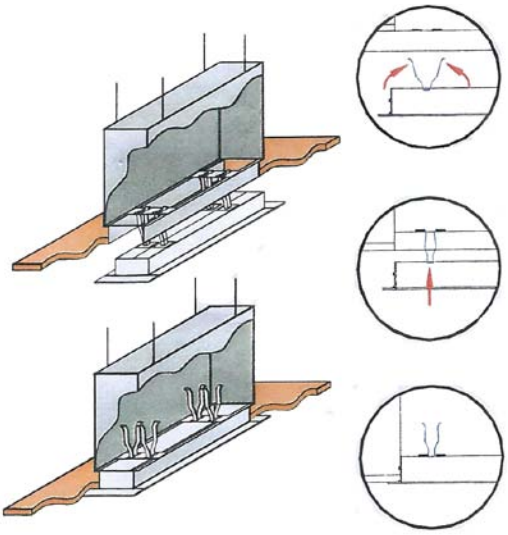


## PL Hidden Mounting System

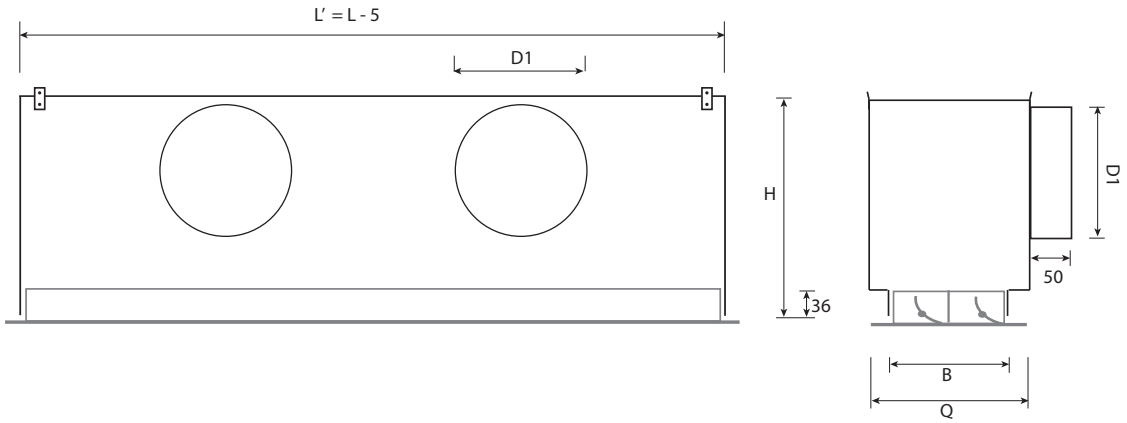
PL Hidden Mounting System consists of spring clips attached to the diffuser and special brackets attached to the plenum.

The clips have a two steps profile. The hooks must first be inserted into the brackets. The hooks secure the product in place, even when submitted to intense vibrations, making it safe for ceiling installation.

The second step only requires to push the diffuser until it lays flush with the gypsum or plenum opening. The spring pressure maintains the product in place.

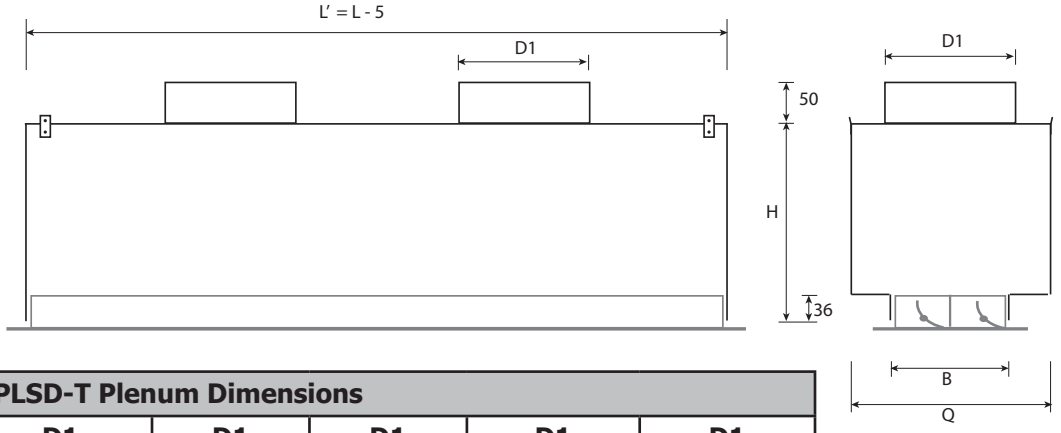


## PLSD Plenum (Side Connection)



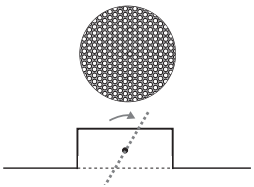

| PLSD Plenum Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nb Rows | | H | B | N | D1 L ≤ 19 11/16″ | D1 L ≤ 39 3/8″ | D1 L ≤ 47 1/4″ | D1 L ≤ 59 1/16″ | D1 L = 78 47/64″ |
| | 1 | 10 5/64" | 1 27/32″ | 2 23/32″ | 1x 6″D | 1x 6″D | 1x 6″D | 1x 6″D | 2x 6″D |
| | 2 | 10 5/64" | 3 25/64″ | 4 1/4″ | 1x 6″D | 1x 6″D | 1x 6″D | 2x 6″D | 2x 6″D |

## PLSD-T Plenum (Top Connection)



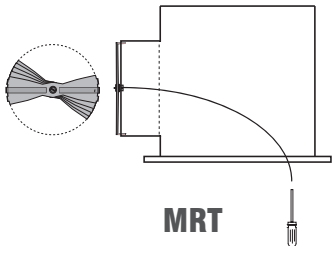

| PLSD-T Plenum Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nb Rows | | H | B | N | D1 L ≤ 19 11/16″ | D1 L ≤ 39 3/8″ | D1 L ≤ 47 1/4″ | D1 L ≤ 59 1/16″ | D1 L = 78 47/64″ |
| | 1 | 8" | 1 27/32″ | 6 7/8″ | 1x 6″D | 1x 6″D | 1x 6″D | 1x 6″D | 2x 6″D |
| | 2 | 8" | 3 25/64″ | 6 7/8″ | 1x 6″D | 1x 6″D | 1x 6″D | 2x 6″D | 2x 6″D |

## Integrated Air Volume Dampers



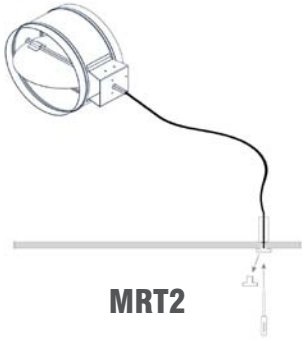
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

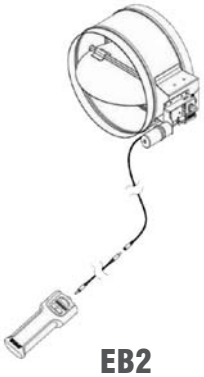
Manually operated damper, cable through drywall with termination fixture

## Integrated Air Volume Dampers



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| End Borders | | |
|---|---|---|
| | **AR** | Two End Borders |
| | **ARI** | Left End Border Only |
| | **ARD** | Right End Border Only |
| | **INT** | No End Border (Central Sections) |

| Finish | | |
|---|---|---|
| | **/M9016** | Powder Coated White RAL 9016 (standard) |
| | **/AA** | Anodized in matt silver with black vanes |
| | **/RAL xxxx** | Other (specify) : |

| Plenum | | |
|---|---|---|
| | **PLSD** | Side connection & hidden spring clips attachment system |
| | **PLSD-T** | Top connection & hidden spring clips attachment system |

| Neck-Installed Air Volume Damper | | | Cable Length |
|---|---|---|---|
| | **R** | Perforated air volume damper/equalizer | |
| | **MRT** | Manually operated, cable through face | |
| | **MRT2** | Manually operated, drywall termination fixture | |
| | **EB** | Electro-balanced, battery powered, cable through face | |
| | **EB2** | Electro-balanced, battery powered, termination fixture | |

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## KIS Series

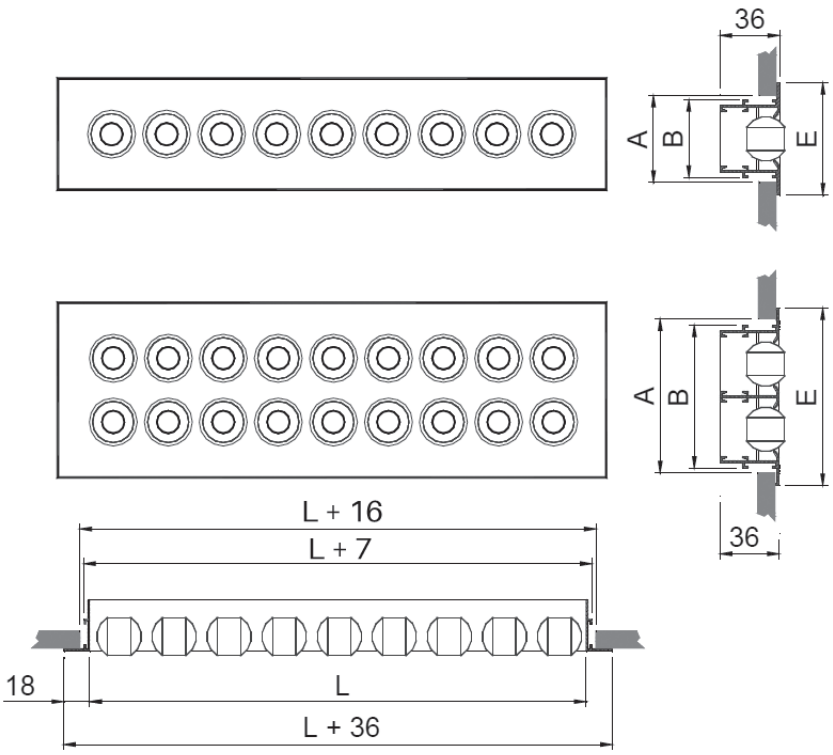
## Adjustable Linear Micro-Nozzle Jet Diffusers



**KIS**
by MADEL®

**Material |** Aluminum face and plastic nozzles

**Air Pattern |** Long throw, adjustable directional jet



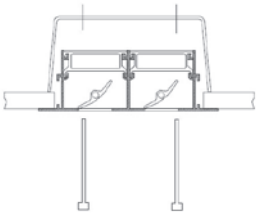

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | E | A | B |
| | KIS 1 | 68 | 55 | 47 |
| | KIS 2 | 107 | 95 | 86 |

All dimensions in mm

| Mounting | | |
|---|---|---|
| | PL | Concealed Spring Clips (requires PLSD) |
| | PM | Concealed U Clip |

## PM Mounting Kit

PM Mounting Kit consists of C shaped clips with long screws. Recommended for installation without plenum.

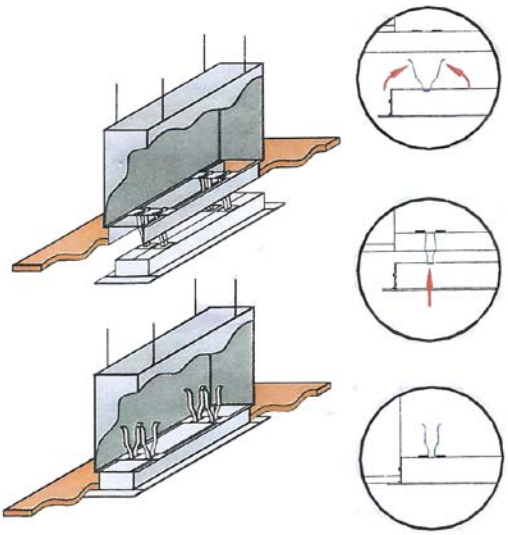


## PL Hidden Mounting System

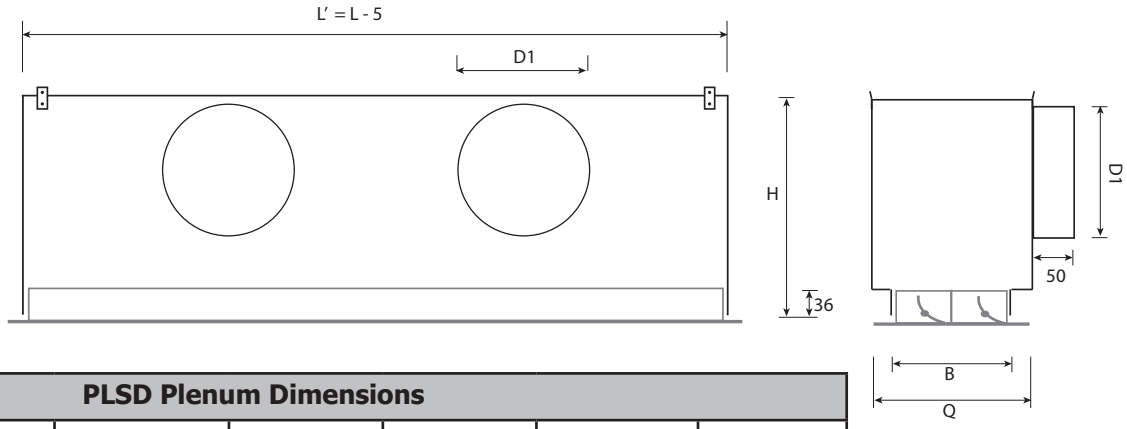
PL Hidden Mounting System consists of spring clips attached to the diffuser and special brackets attached to the plenum.

The clips have a two steps profile. The hooks must first be inserted into the brackets. The hooks secure the product in place, even when submitted to intense vibrations, making it safe for ceiling installation.

The second step only requires to push the diffuser until it lays flush with the gypsum or plenum opening. The spring pressure maintains the product in place.

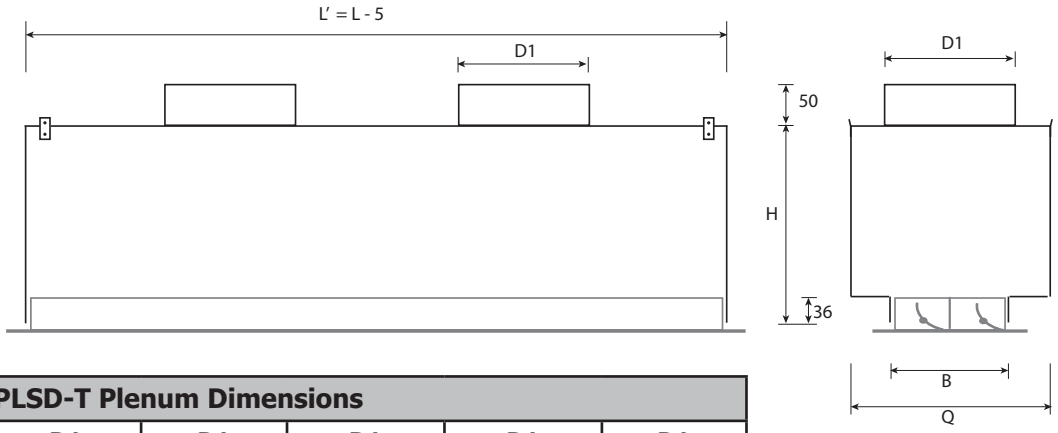


## PLSD Plenum (Side Connection)



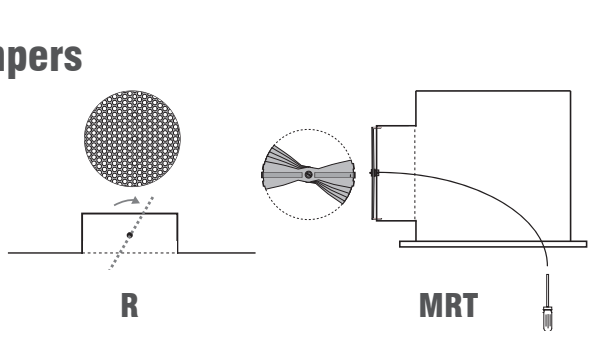

| PLSD Plenum Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nb Rows | | H | B | N | D1 (L ≤ 500) | D1 (L ≤ 1000) | D1 (L ≤ 1200) | D1 (L ≤ 1500) | D1 (L ≤ 2000) |
| | 1 | 256 | 46.7 | 69 | 1x 148 | 1x 148 | 1x 148 | 1x 148 | 2x 148 |
| | 2 | 256 | 86.1 | 108 | 1x 148 | 1x 148 | 1x 148 | 2x 148 | 2x 148 |

## PLSD-T Plenum (Top Connection)




| PLSD-T Plenum Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nb Rows | | H | B | N | D1 (L ≤ 500) | D1 (L ≤ 1000) | D1 (L ≤ 1200) | D1 (L ≤ 1500) | D1 (L ≤ 2000) |
| | 1 | 203 | 46.7 | 175 | 1x 148 | 1x 148 | 1x 148 | 1x 148 | 2x 148 |
| | 2 | 203 | 86.1 | 175 | 1x 148 | 1x 148 | 1x 148 | 2x 148 | 2x 148 |

## Integrated Air Volume Dampers



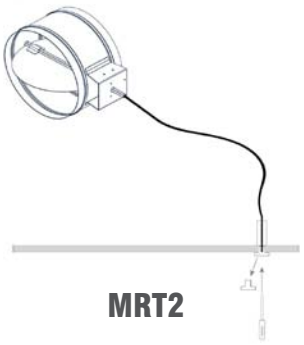
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

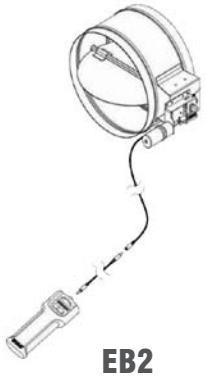
Manually operated damper, cable through drywall with termination fixture

## Integrated Air Volume Dampers



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| End Borders | | |
|---|---|---|
| | **AR** | Two End Borders |
| | **ARI** | Left End Border Only |
| | **ARD** | Right End Border Only |
| | **INT** | No End Border (Central Sections) |

| Finish | | |
|---|---|---|
| | **/M9016** | Powder Coated White RAL 9016 (standard) |
| | **/AA** | Anodized in matt silver with black vanes |
| | **/RAL xxxx** | Other (specify) : |

| Plenum | | |
|---|---|---|
| | **PLSD** | Side connection & hidden spring clips attachment system |
| | **PLSD-T** | Top connection & hidden spring clips attachment system |

| Neck-Installed Air Volume Damper | | | Cable Length |
|---|---|---|---|
| | **R** | Perforated air volume damper/equalizer | |
| | **MRT** | Manually operated, cable through face | |
| | **MRT2** | Manually operated, drywall termination fixture | |
| | **EB** | Electro-balanced, battery powered, cable through face | |
| | **EB2** | Electro-balanced, battery powered, termination fixture | |

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" (13mm) Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" (50mm) Exterior R6 Thermal Insulation |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**



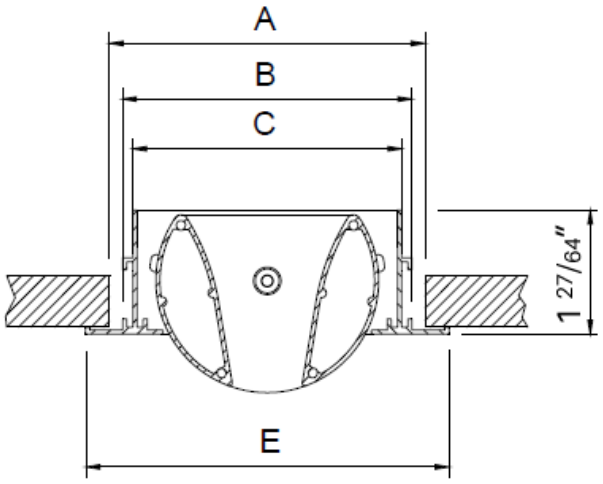
**KOBE**
by MADEL®

## KOBE Series
## Adjustable Long Throw Linear Jet Diffusers

**Material |** Aluminum

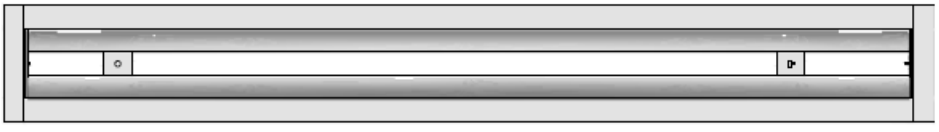
**Air Pattern |** Long throw, adjustable directional jet

| Slot Type and Width | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | Nominal Width | Nozzle Width | A | B | C | E |
| | 15 | 0.6” | 3 11/16” | 3 21/64” | 3 3/32” | 4 11/64” |
| | 20 | 0.8” | 3 11/16” | 3 21/64” | 3 3/32” | 4 11/64” |
| | 25 | 1” | 3 11/16” | 3 21/64” | 3 3/32” | 4 11/64” |
| | 30 | 1.2” | 3 11/16” | 3 21/64” | 3 3/32” | 4 11/64” |
| | 40 | 1.6” | 4 15/64” | 3 7/8” | 3 41/64” | 4 23/32” |
| | 50 | 2” | 4 43/64” | 4 5/16” | 4 5/64” | 5 5/32” |



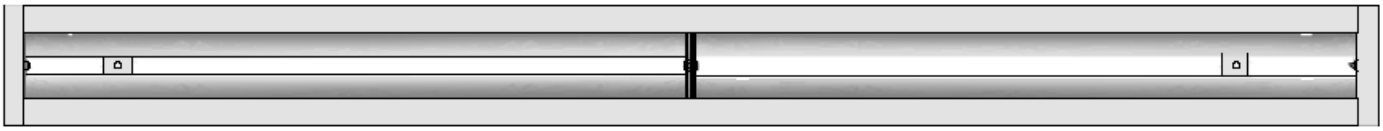

**Single Nozle**

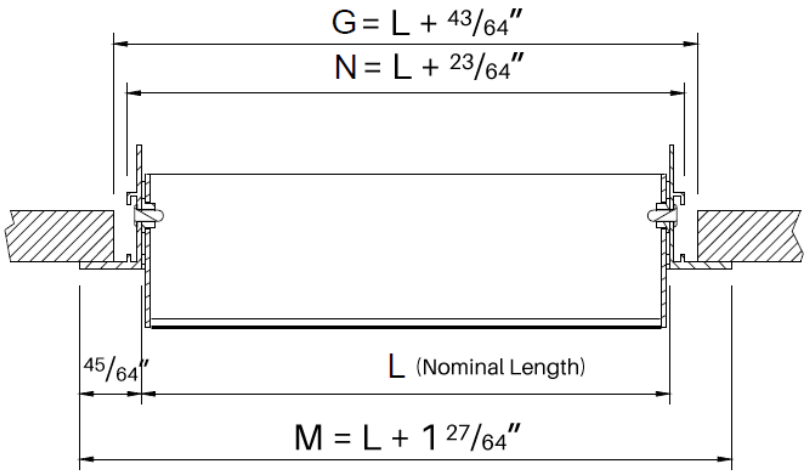
300 <= L <= 1000



**Split Nozle**

1100 <= L <= 2000

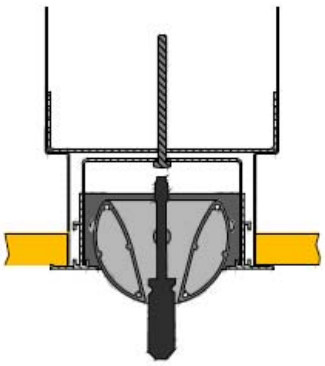





| Nominal Lengths | | | | | |
|---|---|---|---|---|---|
| ✓ | Nominal Length | L (inches) | G | N | M |
| | 300 | 11 13/16” | 12 31/64” | 12 11/64” | 13 15/64” |
| | 400 | 15 3/4" | 16 27/64” | 16 7/64” | 17 11/64” |
| | 500 | 19 11/16" | 20 23/64” | 20 3/64” | 21 7/64” |
| | 600 | 23 5/8" | 24 19/64” | 23 63/64” | 25 3/64” |
| | 700 | 27 9/16" | 28 15/64” | 27 59/64” | 28 63/64” |
| | 800 | 31 1/2" | 32 11/64” | 31 55/64” | 32 59/64” |
| | 900 | 35 7/16" | 36 7/64” | 35 51/64” | 36 55/64” |
| | 1000 | 39 3/8” | 40 3/64” | 39 47/64” | 40 51/64” |
| | 1100 | 43 5/16” | 43 63/64” | 43 43/64” | 44 47/64” |
| | 1200 | 47 1/4” | 47 59/64” | 47 39/64” | 48 43/64” |
| | 1300 | 51 3/16” | 51 55/64” | 51 35/64” | 52 39/64” |
| | 1400 | 55 1/8” | 55 51/64” | 55 31/64” | 56 35/64” |
| | 1500 | 59 1/16” | 59 47/64” | 59 27/64” | 60 31/64” |
| | 1600 | 62 63/64” | 63 21/32” | 63 11/32” | 64 13/32” |
| | 1700 | 66 59/64” | 67 19/32” | 67 9/32” | 68 11/32” |
| | 1800 | 70 55/64” | 71 17/32” | 71 7/32” | 72 9/32” |
| | 1900 | 74 51/64” | 75 15/32” | 75 5/32” | 76 7/32” |
| | 2000 | 78 47/64” | 79 13/32” | 79 3/32” | 80 5/32” |

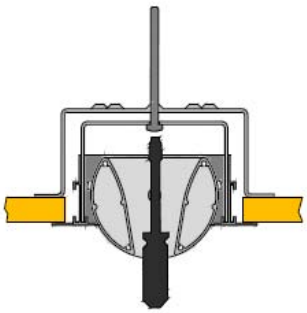
## PL Mounting

PLKB-PL Plenum
Mounting Clips



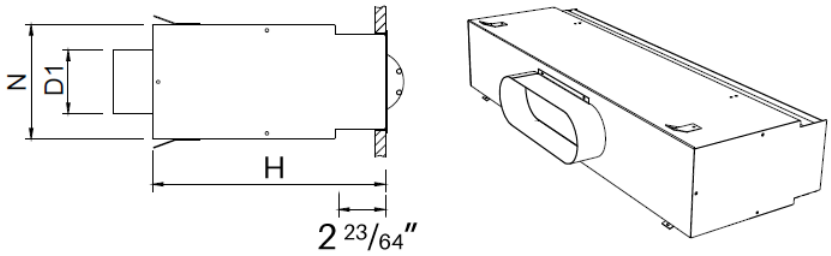
## PM Mounting

Mounting Clips for PLKB-PM
Plenum or no plenum

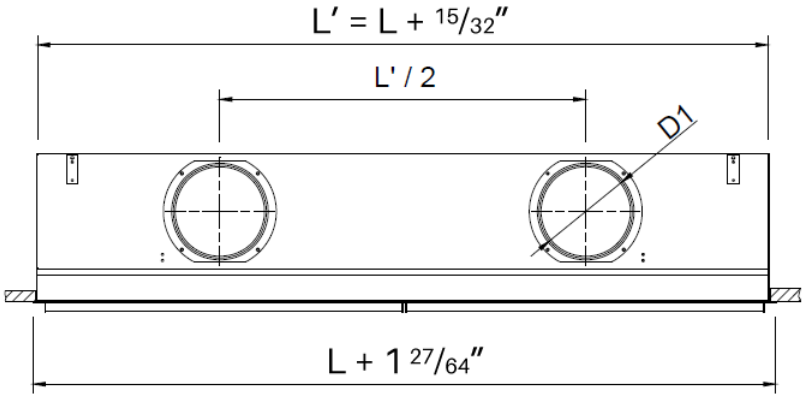


## PLKB-PL Plenum

PLKB-T-PL




PLKB-S-PL

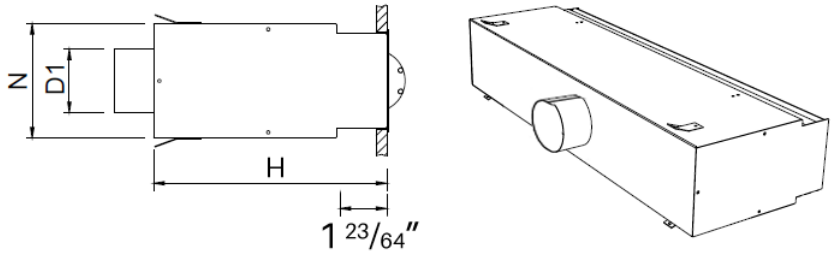



| PLKB-PL | N | L <= 600 | | L <= 1000 | | L <= 1500 | | L <= 2000 | |
|---|---|---|---|---|---|---|---|---|---|
| | | D1 | H | D1 | H | D1 | H | D1 | H |
| **KOBE 15** | 4 3/8 | 5 7/8 | 9 39/64 | 5 7/8 | 9 39/64 | (2x) 5 7/8 | 9 39/64 | (2x) 5 7/8 | 9 39/64 |
| **KOBE 20** | 4 3/8 | 5 7/8 | 9 39/64 | 5 7/8 | 9 39/64 | (2x) 5 7/8 | 9 39/64 | (2x) 7 7/8 | 11 3/16 |
| **KOBE 25** | 4 3/8 | 5 7/8 | 9 39/64 | 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 |
| **KOBE 30** | 4 3/8 | 7 7/8 | 11 3/16 | 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 |
| **KOBE 40** | 4 59/64 | 7 7/8 | 11 3/16 | 7 7/8 | 11 3/16 | (2x) 7 7/8 | 11 3/16 | (2x) 9 7/8 | 13 5/32 |
| **KOBE 50** | 5 5/16 | 7 7/8 | 11 3/16 | 7 7/8 | 11 3/16 | (2x) 9 7/8 | 13 5/32 | (2x) 9 7/8 | 13 5/32 |

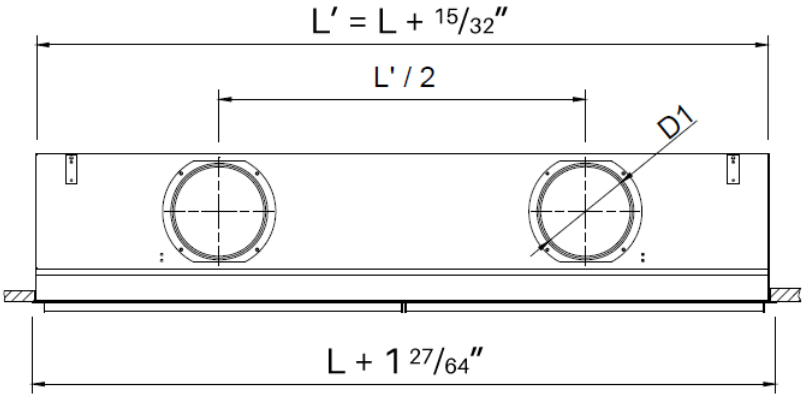
All dimensions in inches

## PLKB-PM Plenum

PLKB-T-PM




PLKB-S-PM



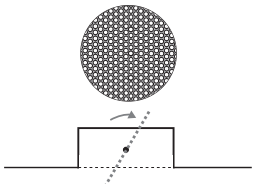

| PLKB-S-PM | N | L <= 600 | | L <= 1000 | | L <= 1200 | | L <= 1500 | | L <= 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | H | D1 | H | D1 | H | D1 | H | D1 | H |
| **KOBE 15** | 5 | 5 7/8 | 8 39/64 | 5 7/8 | 8 39/64 | 5 7/8 | 8 39/64 | (2x) 5 7/8 | 8 39/64 | (2x) 5 7/8 | 8 39/64 |
| **KOBE 20** | 5 | 5 7/8 | 8 39/64 | 5 7/8 | 8 39/64 | 7 7/8 | 10 3/16 | (2x) 5 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 |
| **KOBE 25** | 5 | 5 7/8 | 8 39/64 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 |
| **KOBE 30** | 5 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 | (2x) 7 7/8 | 10 3/16 |
| **KOBE 40** | 5 3/4 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | 9 7/8 | 12 5/32 | (2x) 7 7/8 | 12 5/32 | (2x) 9 7/8 | 12 5/32 |
| **KOBE 50** | 6 | 7 7/8 | 10 3/16 | 7 7/8 | 10 3/16 | 9 7/8 | 12 5/32 | (2x) 9 7/8 | 12 5/32 | (2x) 9 7/8 | 12 5/32 |

All dimensions in inches

| PLKB-T-PM | H | L <= 600 | | L <= 1000 | | L <= 1200 | | L <= 1500 | | L <= 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | N | D1 | N | D1 | N | D1 | N | D1 | N |
| **KOBE 15** | 5 7/8 | 5 7/8 | 6 7/8 | 5 7/8 | 6 7/8 | 5 7/8 | 6 7/8 | (2x) 5 7/8 | 6 7/8 | (2x) 5 7/8 | 6 7/8 |
| **KOBE 20** | 5 7/8 | 5 7/8 | 6 7/8 | 5 7/8 | 6 7/8 | 7 7/8 | 8 7/8 | (2x) 5 7/8 | 6 7/8 | (2x) 7 7/8 | 8 7/8 |
| **KOBE 25** | 5 7/8 | 5 7/8 | 6 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | (2x) 7 7/8 | 8 7/8 | (2x) 7 7/8 | 8 7/8 |
| **KOBE 30** | 5 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | (2x) 7 7/8 | 8 7/8 | (2x) 7 7/8 | 8 7/8 |
| **KOBE 40** | 6 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | 9 7/8 | 10 7/8 | (2x) 7 7/8 | 10 7/8 | (2x) 9 7/8 | 10 7/8 |
| **KOBE 50** | 6 7/8 | 7 7/8 | 8 7/8 | 7 7/8 | 8 7/8 | 9 7/8 | 10 7/8 | (2x) 9 7/8 | 10 7/8 | (2x) 9 7/8 | 10 7/8 |

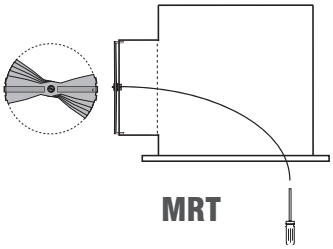
All dimensions in inches

## Integrated Air Volume Dampers



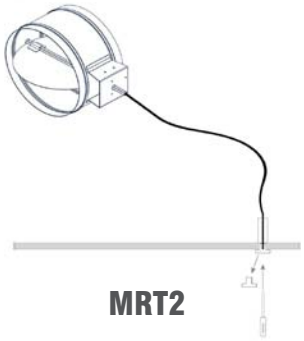
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



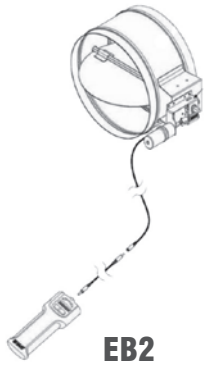
**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**Important Note: MRT, MRT2, EB and EB2 Damper Options are only available for KOO with 2 rows (Height 8" and 12").**

## Accessories

### EB-SP1

Single Connector Drywall Termination Fixture for EB dampers



### EB-AB8

Eight Connector Wall Bracket for EB dampers



### EB-SP8

Eight Connector Drywall Termination Fixture for EB dampers



### EB-REMOTE

Remote Control for EB dampers



| Mounting | | |
|---|---|---|
| | **PL** | Mounting clips for PLKB plenum |
| | **PM** | Mounting crossbar for installation without plenum |

| Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **R9010** | Powder Coated White RAL 9010 |
| | **R9005M** | Powder Coated Matte Jet Black RAL 9005 |
| | **RAL xxxx** | Please Specify: |

| Plenum | | |
|---|---|---|
| | **PLKB-S-PL** | Side connection, PL mounting |
| | **PLKB-T-PL** | Top (Back) connection, PL mounting |
| | **PLKB-S-PM** | Side connection, PM mounting |
| | **PLKB-T-PM** | Top (Back) connection, PM mounting |

| Insulation | | |
|---|---|---|
| | **AL** | 1/2” Interior Accoustical Liner |
| | **ALC** | 1/2” Interior Closed Cell Accoustical Insulation |
| | **R6** | 2” Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | | Cable Length (inches) |
|---|---|---|---|
| | **R** | Perforated air volume damper/equalizer | |
| | **MRT** | Manually operated, cable thru face | |
| | **MRT2** | Manually operated, termination fixture | |
| | **EB** | Electro-balanced, battery powered, cable thru face | |
| | **EB2** | Electro-balanced, battery powered, cable thru drywall | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

**Tag:**

## KOBE Series

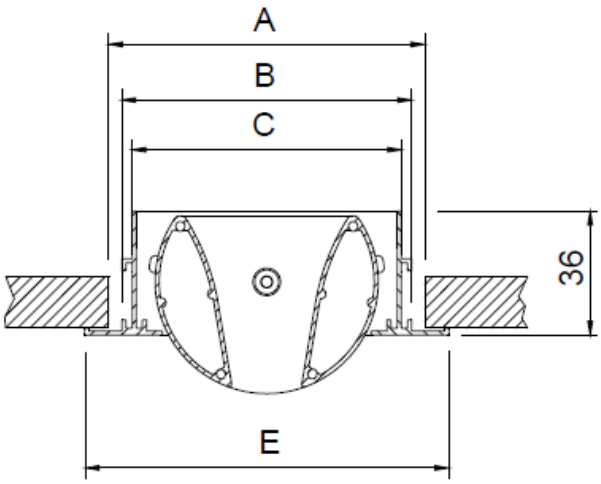
### Adjustable Long Throw Linear Jet Diffusers



**KOBE**
by MADEL®

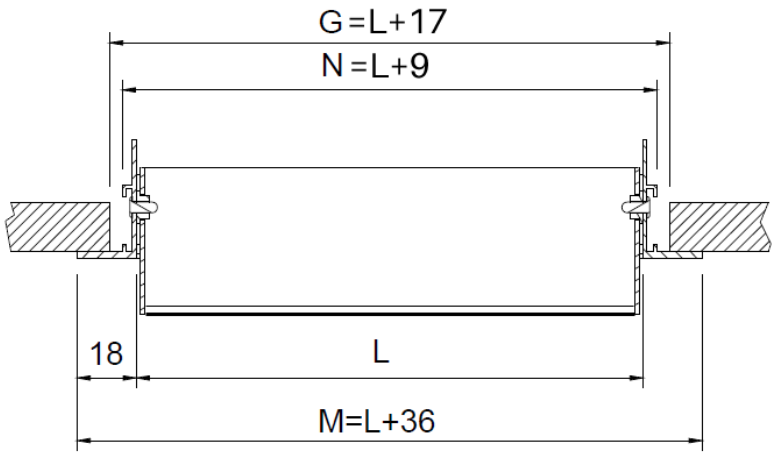
**Material |** Aluminum

**Air Pattern |** Long throw, adjustable directional jet

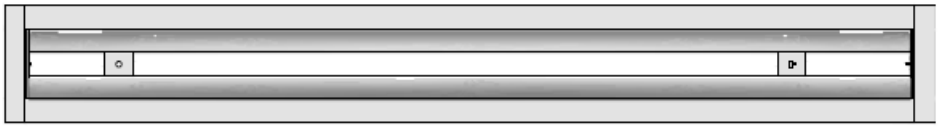



| Dimension | | | | | |
|---|---|---|---|---|---|
| ✓ | Nozzle Width | A | B | C | E |
| | **15** | 93.5 | 84.5 | 78.5 | 106 |
| | **20** | 93.5 | 84.5 | 78.5 | 106 |
| | **25** | 93.5 | 84.5 | 78.5 | 106 |
| | **30** | 93.5 | 84.5 | 78.5 | 106 |
| | **40** | 107.5 | 98.5 | 92.5 | 120 |
| | **50** | 118.5 | 109.5 | 103.5 | 131 |

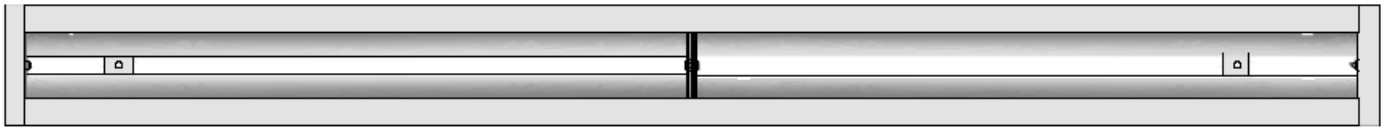
All dimensions in mm




**Single Nozle**
300 <= L <= 1000

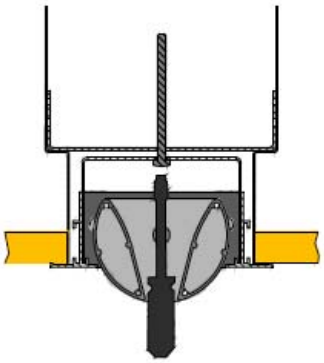


**Split Nozle**
1100 <= L <= 2000



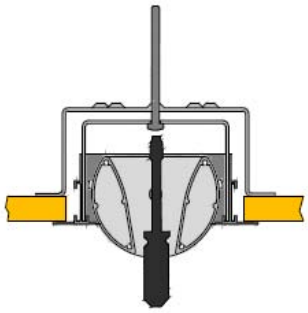
## PL Mounting

PLKB-PL Plenum
Mounting Clips



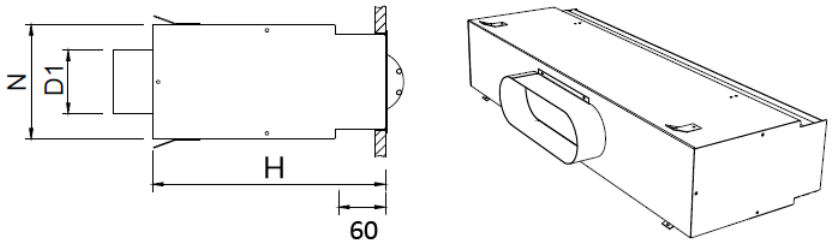
## PM Mounting

Mounting Clips for PLKB-PM
Plenum or no plenum

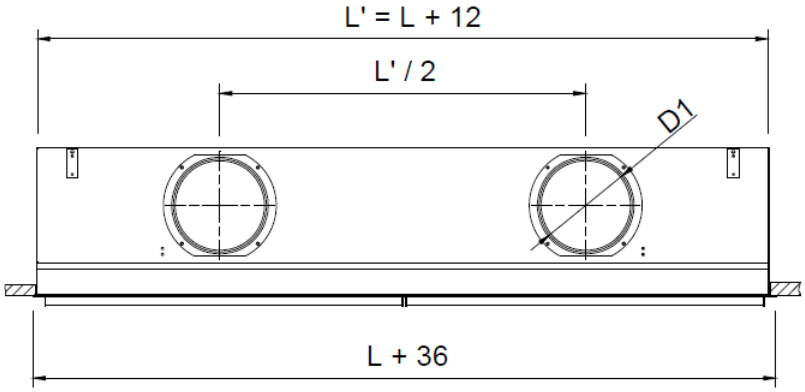


## PLKB-PL Plenum

PLKB-T-PL




PLKB-S-PL

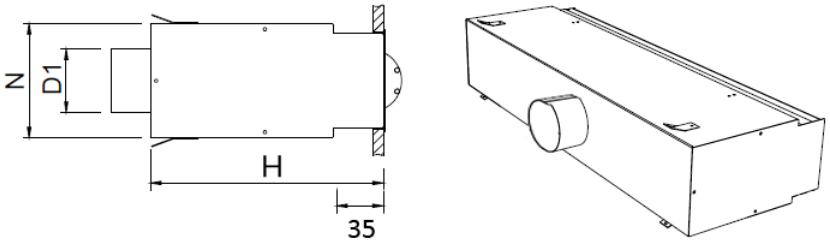



| PLKB-PL | L <= 600 | | | 600 < L <= 1000 | | | 1000 < L <= 1500 | | | 1500 < L <= 2000 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **D1** | **H** | **N** | **D1** | **H** | **N** | **D1** | **H** | **N** | **D1** | **H** | **N** |
| **KOBE 15** | 158 | 244 | 111 | 158 | 244 | 111 | 2x 158 | 244 | 111 | 2x 158 | 244 | 111 |
| **KOBE 20** | 158 | 244 | 111 | 158 | 244 | 111 | 2x 158 | 244 | 111 | 2x 198 | 284 | 111 |
| **KOBE 25** | 158 | 244 | 111 | 198 | 284 | 111 | 2x 198 | 284 | 111 | 2x 198 | 284 | 111 |
| **KOBE 30** | 198 | 284 | 111 | 198 | 284 | 111 | 2x 198 | 284 | 111 | 2x 198 | 284 | 111 |
| **KOBE 40** | 198 | 284 | 125 | 198 | 284 | 125 | 2x 198 | 284 | 125 | 2x 248 | 334 | 125 |
| **KOBE 50** | 198 | 284 | 135 | 198 | 284 | 135 | 2x 248 | 334 | 135 | 2x 248 | 334 | 135 |

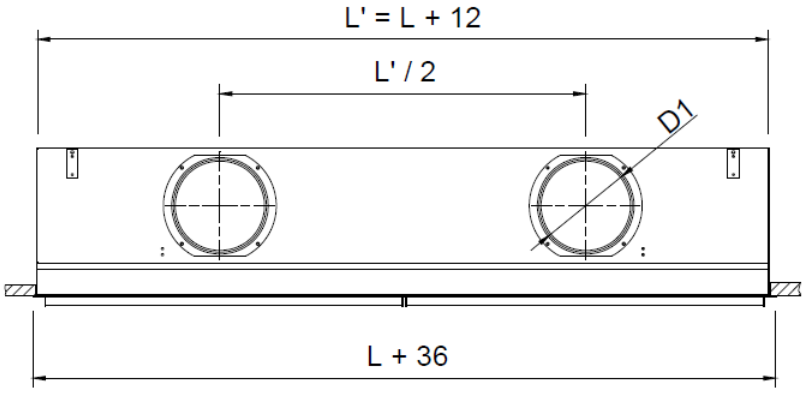
All dimensions in mm

## PLKB-PM Plenum

PLKB-T-PM




PLKB-S-PM



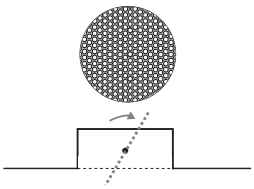

| PLKB-S-PM | N | L <= 600 | | 600 < L <= 1000 | | 1000 < L <= 1200 | | 1200 < L <= 1500 | | 1500 < L <= 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | H | D1 | H | D1 | H | D1 | H | D1 | H |
| **KOBE 15** | 127 | 150 | 219 | 150 | 219 | 150 | 219 | (2x) 150 | 219 | (2x) 150 | 219 |
| **KOBE 20** | 127 | 150 | 219 | 150 | 219 | 200 | 259 | (2x) 150 | 259 | (2x) 200 | 259 |
| **KOBE 25** | 127 | 150 | 219 | 200 | 259 | 200 | 259 | (2x) 200 | 259 | (2x) 200 | 259 |
| **KOBE 30** | 127 | 200 | 259 | 200 | 259 | 200 | 259 | (2x) 200 | 259 | (2x) 200 | 259 |
| **KOBE 40** | 146 | 200 | 259 | 200 | 259 | 250 | 309 | (2x) 200 | 309 | (2x) 250 | 309 |
| **KOBE 50** | 152 | 200 | 259 | 200 | 259 | 250 | 309 | (2x) 250 | 309 | (2x) 250 | 309 |

All dimensions in mm

| PLKB-T-PM | H | L <= 600 | | 600 < L <= 1000 | | 1000 < L <= 1200 | | 1200 < L <= 1500 | | 1500 < L <= 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | D1 | N | D1 | N | D1 | N | D1 | N | D1 | N |
| **KOBE 15** | 150 | 150 | 175 | 150 | 6 7/8 | 150 | 175 | (2x) 150 | 175 | (2x) 150 | 175 |
| **KOBE 20** | 150 | 150 | 175 | 150 | 6 7/8 | 200 | 225 | (2x) 150 | 175 | (2x) 200 | 225 |
| **KOBE 25** | 150 | 150 | 175 | 200 | 8 7/8 | 200 | 225 | (2x) 200 | 225 | (2x) 200 | 225 |
| **KOBE 30** | 150 | 200 | 225 | 200 | 8 7/8 | 200 | 225 | (2x) 200 | 225 | (2x) 200 | 225 |
| **KOBE 40** | 175 | 200 | 225 | 200 | 8 7/8 | 250 | 276 | (2x) 200 | 276 | (2x) 250 | 276 |
| **KOBE 50** | 175 | 200 | 225 | 200 | 8 7/8 | 250 | 276 | (2x) 250 | 276 | (2x) 250 | 276 |

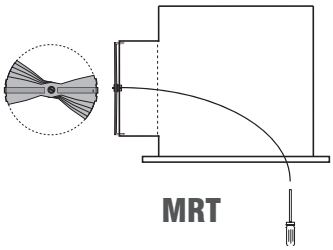
All dimensions in mm

## Integrated Air Volume Dampers



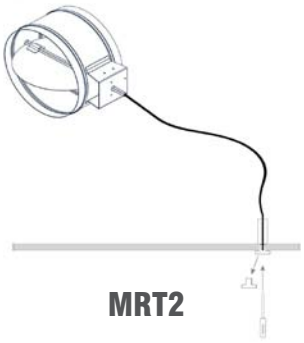
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**Important Note: MRT, MRT2, EB and EB2 Damper Options are only available for KOO with 2 rows (Height 8" and 12").**

## Accessories

### EB-SP1

Single Connector Drywall Termination Fixture for EB dampers



### EB-AB8

Eight Connector Wall Bracket for EB dampers



### EB-SP8

Eight Connector Drywall Termination Fixture for EB dampers



### EB-REMOTE

Remote Control for EB dampers



| | Slot Width (mm) |
|---|---|
| | 15 |
| | 20 |
| | 25 |
| | 30 |
| | 40 |
| | 50 |

| Diffuser Length (mm) |
|---|
| |

| | Mounting | |
|---|---|---|
| | **PL** | Mounting clips for PLKB plenum |
| | **PM** | Mounting crossbar for installation without plenum |

| | Finish | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **R9010** | Powder Coated White RAL 9010 |
| | **R9005M** | Powder Coated Matte Jet Black RAL 9005 |
| | **RAL xxxx** | Please Specify: |

| | Plenum | |
|---|---|---|
| | **PLKB-S-PL** | Side connection, PL mounting |
| | **PLKB-T-PL** | Top (Back) connection, PL mounting |
| | **PLKB-S-PM** | Side connection, PM mounting |
| | **PLKB-T-PM** | Top (Back) connection, PM mounting |

| | Insulation | |
|---|---|---|
| | **AL** | 1/2” Interior Accoustical Liner |
| | **ALC** | 1/2” Interior Closed Cell Accoustical Insulation |
| | **R6** | 2” Exterior R6 Thermal Insulation |

| | Neck-Installed Air Volume Damper | | Cable Length (inches) |
|---|---|---|---|
| | **R** | Perforated air volume damper/equalizer | |
| | **MRT** | Manually operated, cable thru face | |
| | **MRT2** | Manually operated, termination fixture | |
| | **EB** | Electro-balanced, battery powered, cable thru face | |
| | **EB2** | Electro-balanced, battery powered, cable thru drywall | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## KOO Series

## Adjustable Long Throw Multi-Jet Nozzle Diffuser

**Material |** Aluminum jet nozzles and galvanized steel panel

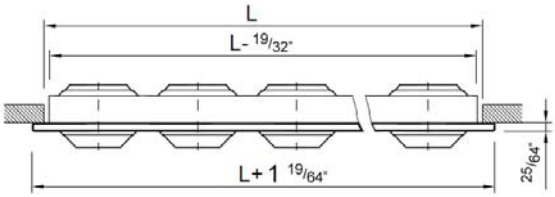
**Air Pattern |** Long throw, independently adjustable directional jets

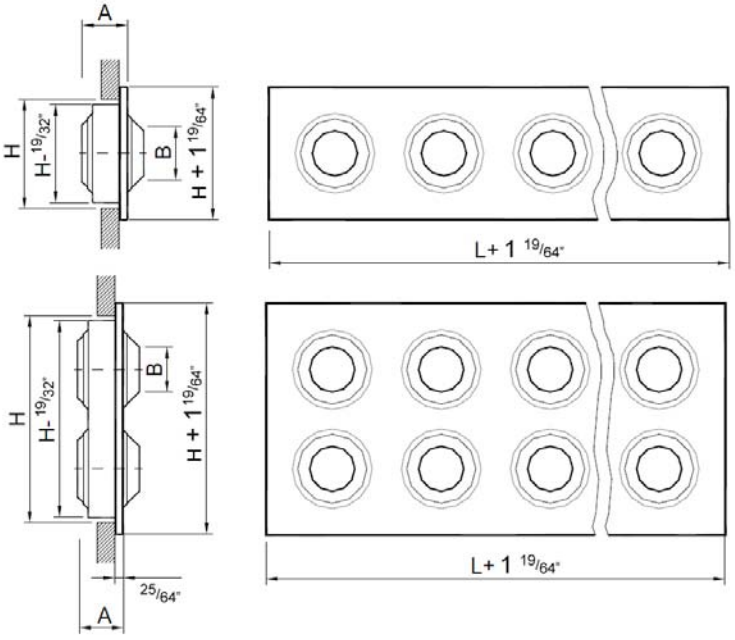


**KOO**

**by MADEL®**

**PATENTED**



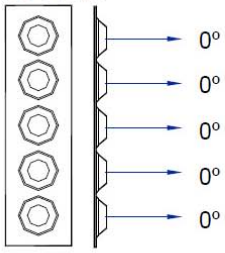




| Select Dimension | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | List Size | Nb Nozzles | L | H | A | B |
| | 8 x 4 | 2 x 1 | 7 7/8" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 12 x 4 | 3 x 1 | 11 13/16" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 16 x 4 | 4 x 1 | 15 3/4" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 20 x 4 | 5 x 1 | 19 11/16" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 24 x 4 | 6 x 1 | 23 5/8" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 28 x 4 | 7 x 1 | 27 9/16" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 32 x 4 | 8 x 1 | 31 1/2" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 36 x 4 | 9 x 1 | 35 7/16" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 40 x 4 | 10 x 1 | 39 3/8" | 3 15/16” | 1 3/8” | 1 47/64” |
| | 8 x 8 | 2 x 2 | 7 7/8" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 12 x 8 | 3 x 2 | 11 13/16" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 16 x 8 | 4 x 2 | 15 3/4" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 20 x 8 | 5 x 2 | 19 11/16" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 24 x 8 | 6 x 2 | 23 5/8" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 28 x 8 | 7 x 2 | 27 9/16" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 32 x 8 | 8 x 2 | 31 1/2" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 36 x 8 | 9 x 2 | 35 7/16" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 40 x 8 | 10 x 2 | 39 3/8" | 7 7/8” | 1 3/8” | 1 47/64” |
| | 12 x 6 | 2 x 1 | 11 13/16" | 5 29/32” | 2 1/4” | 2 13/32” |
| | 18 x 6 | 3 x 1 | 17 23/32" | 5 29/32” | 2 1/4” | 2 13/32” |
| | 24 x 6 | 4 x 1 | 23 5/8" | 5 29/32” | 2 1/4” | 2 13/32” |
| | 30 x 6 | 5 x 1 | 29 17/32" | 5 29/32” | 2 1/4” | 2 13/32” |
| | 36 x 6 | 6 x 1 | 35 7/16" | 5 29/32” | 2 1/4” | 2 13/32” |
| | 42 x 6 | 7 x 1 | 41 11/32" | 5 29/32” | 2 1/4” | 2 13/32” |
| | 48 x 6 | 8 x 1 | 47 1/4" | 5 29/32” | 2 1/4” | 2 13/32” |
| | 12 x 12 | 2 x 2 | 11 13/16" | 11 13/16” | 2 1/4” | 2 13/32” |
| | 18 x 12 | 3 x 2 | 17 23/32" | 11 13/16” | 2 1/4” | 2 13/32” |
| | 24 x 12 | 4 x 2 | 23 5/8" | 11 13/16” | 2 1/4” | 2 13/32” |
| | 30 x 12 | 5 x 2 | 29 17/32" | 11 13/16” | 2 1/4” | 2 13/32” |
| | 36 x 12 | 6 x 2 | 35 7/16" | 11 13/16” | 2 1/4” | 2 13/32” |
| | 42 x 12 | 7 x 2 | 41 11/32" | 11 13/16” | 2 1/4” | 2 13/32” |
| | 48 x 12 | 8 x 2 | 47 1/4" | 11 13/16” | 2 1/4” | 2 13/32” |

## Balancing Position

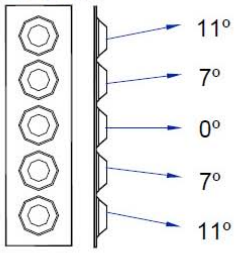
POSITION 1 (0º)

KOO Lx 4
KOO Lx 6



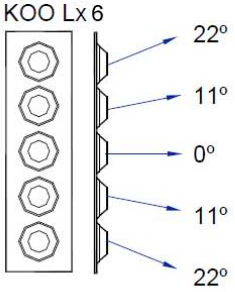

POSITION 2 (22º)

KOO Lx 4
KOO Lx 6



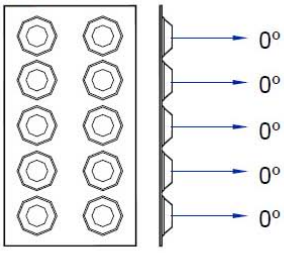

POSITION 3 (45º)

KOO Lx 4
KOO Lx 6



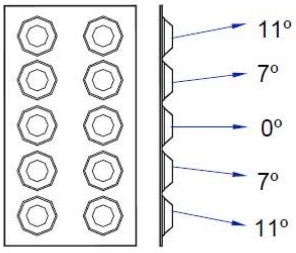

POSITION 1 (0º)

KOO Lx 8
KOO Lx 12



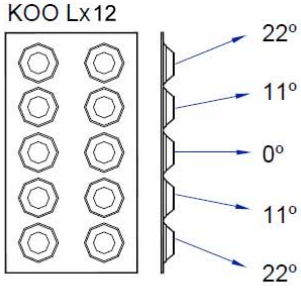

POSITION 2 (22º)

KOO Lx 8
KOO Lx 12

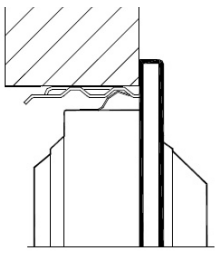



POSITION 3 (45º)

KOO Lx 8
KOO Lx 12



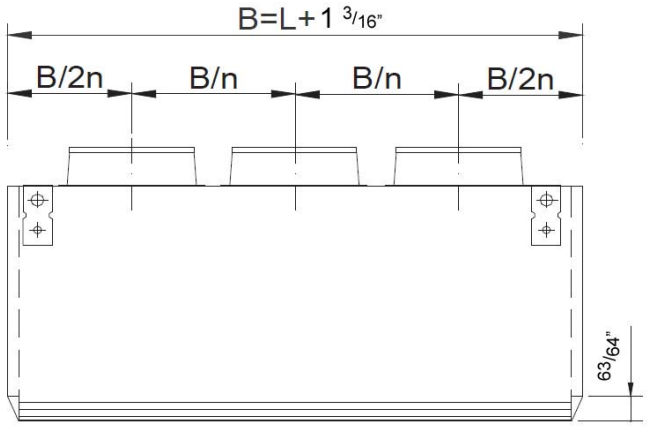

## Spring Clips Mounting

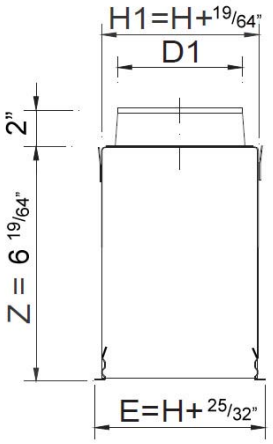


Invisible fixing by means of pressure clips with security hooks for ceiling installation. Requires PLRX plenum or CM mounting frame.

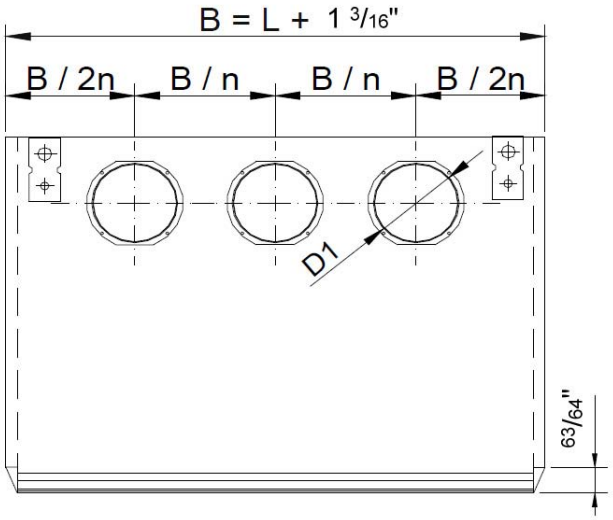
## PLRX Plenum

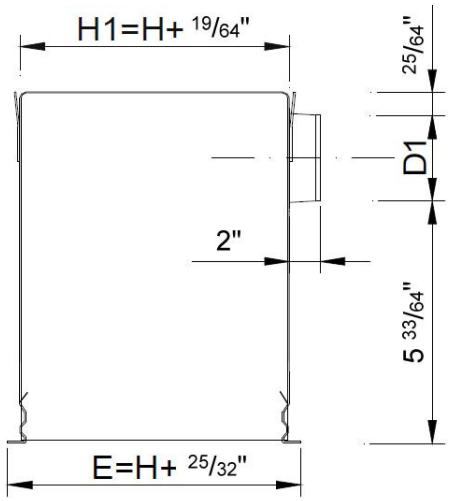
PLRX-T



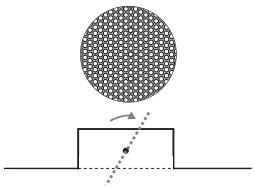

PLRX-S



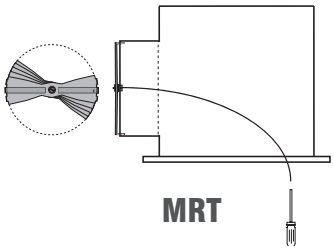

| Neck Diameter and Quantity (n x D) | | | | | | |
|---|---|---|---|---|---|---|
| L | | < 24" | < 36" | < 40" | < 48" | >= 48" |
| H | 4" | 1x 4"D | 2x 4"D | 2x 4"D | 2x 4"D | 3x 4"D |
| | 6" | 1x 5"D | 2x 5"D | 2x 5"D | 2x 5"D | 3x 5"D |
| | 8" | 1x 8"D | 1x 8"D | 2x 8"D | 2x 8"D | 2x 8"D |
| | 12" | 1x 10"D | 1x 10"D | 1x 10"D | 2x 10"D | 2x 10"D |

## Integrated Air Volume Dampers



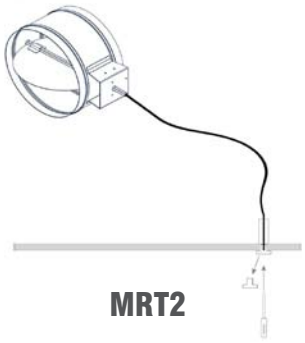
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**Important Note: MRT, MRT2, EB and EB2 Damper Options are only available for KOO with 2 rows (Height 8" and 12").**

## Accessories

### EB-SP1

Single Connector Drywall Termination Fixture for EB dampers



### EB-AB8

Eight Connector Wall Bracket for EB dampers



### EB-SP8

Eight Connector Drywall Termination Fixture for EB dampers



### EB-REMOTE

Remote Control for EB dampers



| Balancing Position (optional) | | |
|---|---|---|
| | **1** | Straight - 0 Degrees (Default) |
| | **2** | 22 Degrees Spread |
| | **3** | 45 Degrees Spread |

| Mounting | | |
|---|---|---|
| | **S** | Invisible fixing by means of pressure clips |
| | **T** | Visible Screws |

| Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

| Plenum | | |
|---|---|---|
| | **PLRX-T** | Top (Back) connection |
| | **PLRX-S** | Side connection |

| Insulation | | |
|---|---|---|
| | **AL** | 1/2” Interior Accoustical Liner |
| | **R6** | 2” Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, cable thru drywall |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

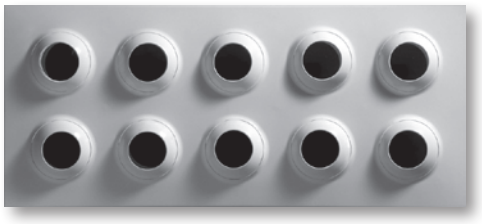
**Engineer:**

**Architect:**

**Contractor:**

## KOO Series

## Adjustable Long Throw Multi-Jet Nozzle Diffuser



**KOO**
by MADEL®

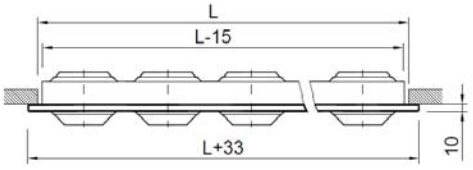
**Material |** Aluminum jet nozzles and galvanized steel panel

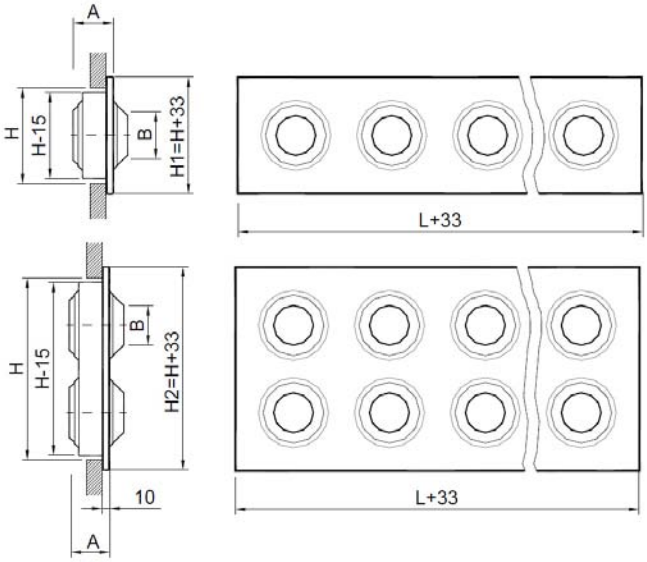
**Air Pattern |** Long throw, independently adjustable directional jets

**PATENTED**

| Select Dimension | | |
|---|---|---|
| ✓ | List Size L x H | Nozzles Qty |
| | 200 x 100 | 2 x 1 |
| | 300 x 100 | 3 x 1 |
| | 400 x 100 | 4 x 1 |
| | 500 x 100 | 5 x 1 |
| | 600 x 100 | 6 x 1 |
| | 700 x 100 | 7 x 1 |
| | 800 x 100 | 8 x 1 |
| | 900 x 100 | 9 x 1 |
| | 1000 x 100 | 10 x 1 |
| | 200 x 200 | 2 x 2 |
| | 300 x 200 | 3 x 2 |
| | 400 x 200 | 4 x 2 |
| | 500 x 200 | 5 x 2 |
| | 600 x 200 | 6 x 2 |
| | 700 x 200 | 7 x 2 |
| | 800 x 200 | 8 x 2 |
| | 900 x 200 | 9 x 2 |
| | 1000 x 200 | 10 x 2 |
| | 300 x 150 | 2 x 1 |
| | 450 x 150 | 3 x 1 |
| | 600 x 150 | 4 x 1 |
| | 750 x 150 | 5 x 1 |
| | 900 x 150 | 6 x 1 |
| | 1050 x 150 | 7 x 1 |
| | 1200 x 150 | 8 x 1 |
| | 300 x 300 | 2 x 2 |
| | 450 x 300 | 3 x 2 |
| | 600 x 300 | 4 x 2 |
| | 750 x 300 | 5 x 2 |
| | 900 x 300 | 6 x 2 |
| | 1050 x 300 | 7 x 2 |
| | 1200 x 300 | 8 x 2 |

All dimensions in mm



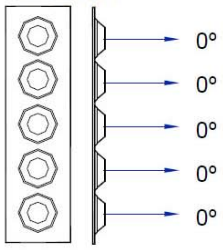




| H | A | B |
|---|---|---|
| **100** | 35 | 44 |
| **150** | 57 | 61 |
| **200** | 35 | 44 |
| **300** | 57 | 61 |

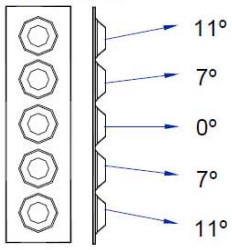
All dimensions in mm

## Balancing Position

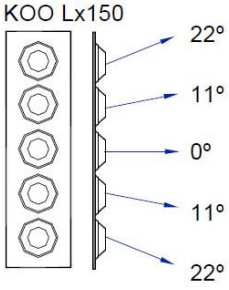
POSITION 1 (0°)
KOO Lx100
KOO Lx150



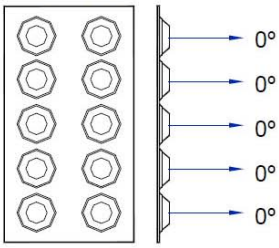

POSITION 2 (22°)
KOO Lx100
KOO Lx150



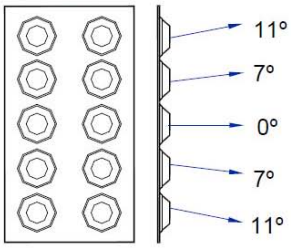

POSITION 3 (45°)
KOO Lx100
KOO Lx150



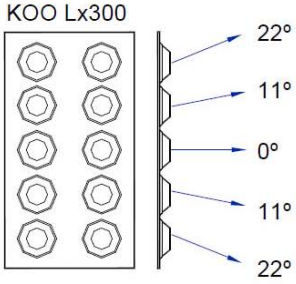

POSITION 1 (0°)
KOO Lx200
KOO Lx300



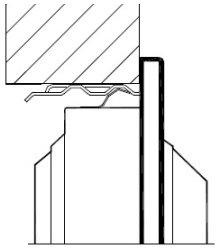

POSITION 2 (22°)
KOO Lx200
KOO Lx300




POSITION 3 (45°)
KOO Lx200
KOO Lx300



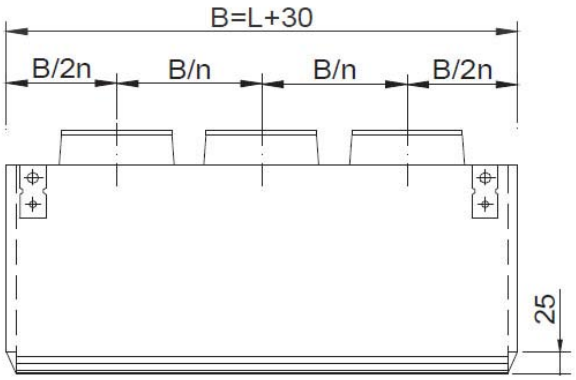

## Spring Clips Mounting

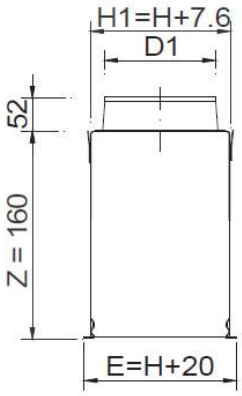


Invisible fixing by means of pressure clips with security hooks for ceiling installation. Requires PLRX plenum or CM mounting frame.

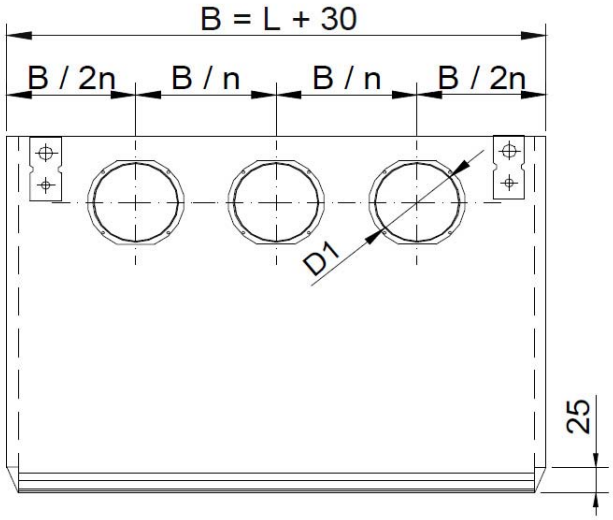
## PLRX Plenum

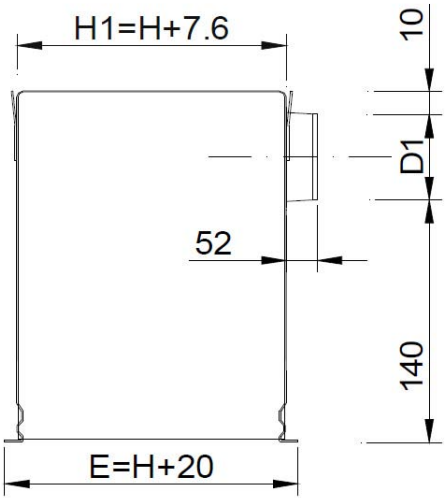
PLRX-T




PLRX-S

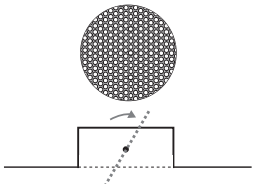



| Neck Diameter and Quantity (n x D) | | | | | | |
|---|---|---|---|---|---|---|
| L | | < 600 | < 900 | < 1000 | < 1200 | >= 1200 |
| H | 100 | 1x 98 | 2x 98 | 2x 98 | 2x 98 | 3x 98 |
| | 150 | 1x 123 | 2x 123 | 2x 123 | 2x 123 | 3x 123 |
| | 200 | 1x 198 | 1x 198 | 2x 198 | 2x 198 | 2x 198 |
| | 300 | 1x 248 | 1x 248 | 1x 248 | 2x 248 | 2x 248 |

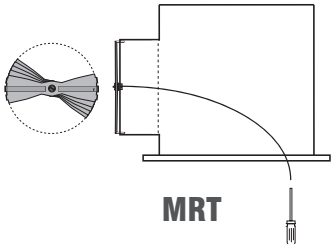
All dimensions in mm

## Integrated Air Volume Dampers



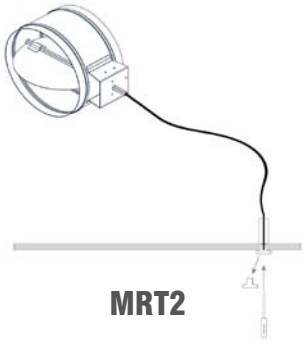
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

**Important Note: MRT, MRT2, EB and EB2 Damper Options are only available for KOO with 2 rows (Height 200 mm and 300 mm).**

## Accessories

### EB-SP1

Single Connector Drywall Termination Fixture for EB dampers



### EB-AB8

Eight Connector Wall Bracket for EB dampers



### EB-SP8

Eight Connector Drywall Termination Fixture for EB dampers



### EB-REMOTE

Remote Control for EB dampers



| Balancing Position (optional) | | |
|---|---|---|
| | **1** | Straight - 0 Degrees (Default) |
| | **2** | 22 Degrees Spread |
| | **3** | 45 Degrees Spread |

| Mounting | | |
|---|---|---|
| | **S** | Invisible fixing by means of pressure clips |
| | **T** | Visible Screws |

| Finish | | |
|---|---|---|
| | **M9016** | Powder Coated White RAL 9016 |
| | **M9006** | Powder Coated Metallic Grey RAL 9006 |
| | **RAL xxxx** | Please Specify: |

| Plenum | | |
|---|---|---|
| | **PLRX-T** | Top (Back) connection |
| | **PLRX-S** | Side connection |

| Insulation | | |
|---|---|---|
| | **AL** | 1/2” Interior Accoustical Liner |
| | **R6** | 2” Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, cable thru drywall |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## LOF/LAIF Series

### Architectural Narrow Slot Diffusers

**Material |** Extruded aluminum

**Air Pattern |** Fix

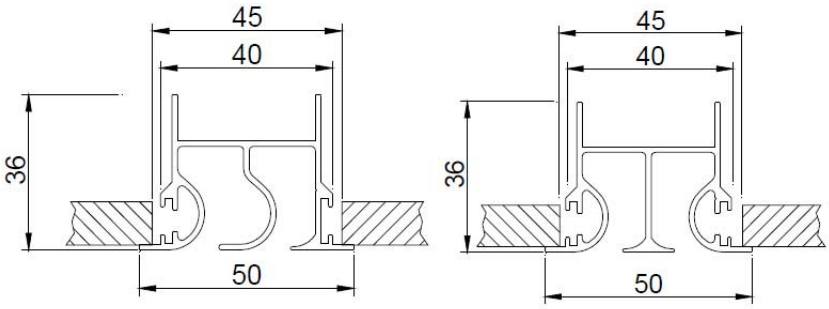
**Ceiling Types |** Open and Closed



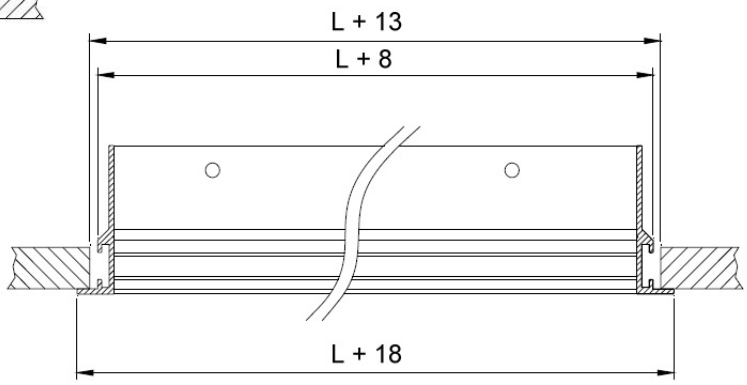
**LAIF**

**by MADEL®**

**PATENTED**

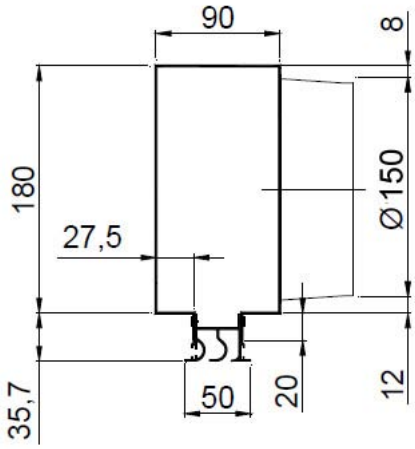


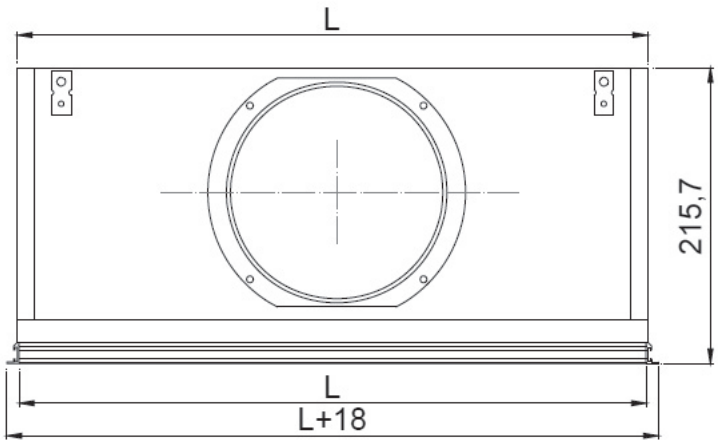

**LOF** **LAIF**




**LOF/LAIF**

## PLF Plenum



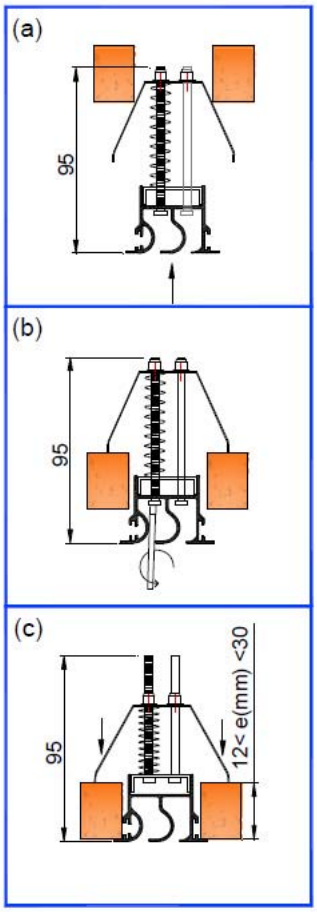

L = Length or List Size

Note: two 150 mm collars when >= 1500 mm

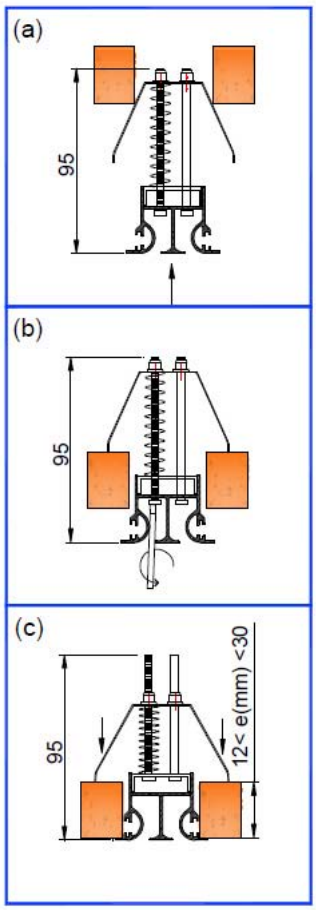
## PM Mounting Kit For LOF/LAIF

PM Mounting Kit greatly facilitates and accelerates the diffuser installation, and works with or without plenum.

LOF-AR (PM)

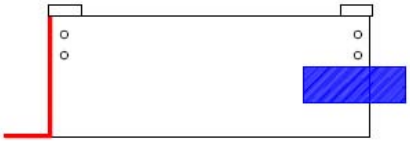



LAIF-AR (PM)

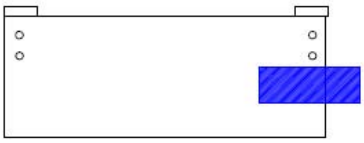



## Continuous Sections

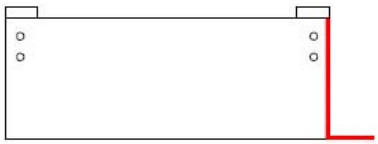
-ARI



-INT

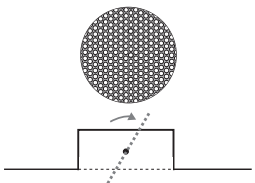


-ARD



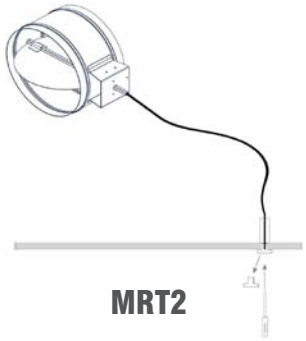
Maximum length for a single section is 2000 mm. Longer continuous diffusers must be divided into smaller sections.

## Integrated Air Volume Dampers



**R**

Perforated damper + air equalizer



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Select Model | | |
|---|---|---|
| | **LOF** | One-Way |
| | **LAIF** | Two-Way |

| Listed L (inches) |
|---|
| |

| End Borders | | |
|---|---|---|
| | **AR** | Two End Borders |
| | **ARI** | Left End Border Only |
| | **ARD** | Right End Border Only |
| | **INT** | No End Border (Central Sections) |

| Mounting | | |
|---|---|---|
| | **PM** | Concealed Spring Clips (LOOK-CM only) |
| | **X** | No Mounting |

| Finish | | |
|---|---|---|
| | **/M9016** | Powder Coated White RAL 9016 |
| | **/M9010** | Powder Coated Off White RAL 9010 |
| | **/M9005** | Powder Coated Black RAL 9005 |
| | **/RAL xxxx** | Other (specify) : |

| Plenum | | |
|---|---|---|
| | **PLF** | Plenum for LOF/LAIF |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT2** | Manually operated, drywall termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

| Insulation | | |
|---|---|---|
| | **R6** | 2” (50mm) Exterior R6 Thermal Insulation |

**Project:**

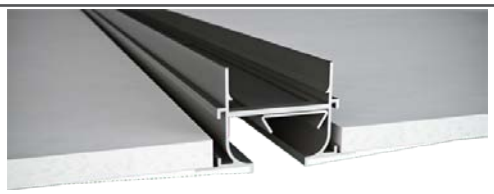
**Engineer:**

**Architect:**

**Contractor:**

## LOOK Series

### Hidden Linear Slot Diffuser



**Material |** Extruded aluminum and extruded PVC sectored deflection vanes

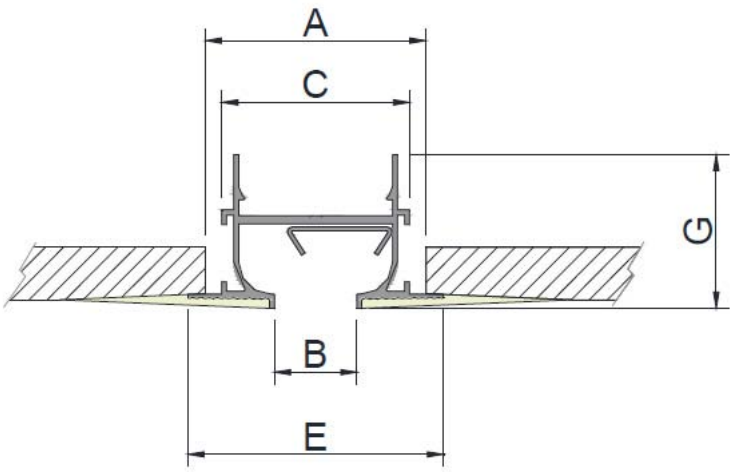
**Air Pattern |** Adjustable

**Ceiling Types |** Open and Closed

**LOOK**
by MADEL®

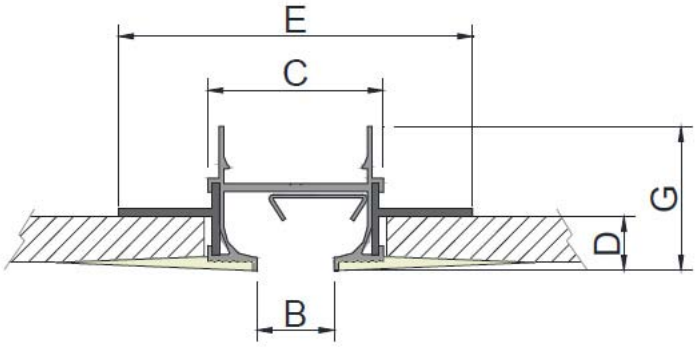
## LOOK-CM

| Slot Width | | A | B | C | G | E |
|---|---|---|---|---|---|---|
| | **20** | 2 11/64" | 3/4" | 1 27/32" | 1 1/2" | 2 1/2" |
| | **30** | 3 5/16" | 1 3/16" | 2 63/64" | 1 25/32" | 3 53/64" |
| | **40** | 3 45/64" | 1 1/2" | 3 25/64" | 1 25/32" | 4 7/32" |




## LOOK-SM

| Slot Width | | B | C | D | G | E |
|---|---|---|---|---|---|---|
| | **20** | 3/4" | 1 27/32" | 35/64" | 1 1/2" | 3 23/32" |
| | **30** | 1 3/16" | 2 63/64" | 35/64" | 1 25/32" | 4 55/64" |
| | **40** | 1 1/2" | 3 25/64" | 35/64" | 1 25/32" | 5 1/4" |




## Continuous Sections




Maximum length for a single section is 78". Longer continuous diffusers must be divided into smaller sections.





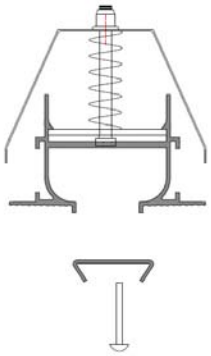




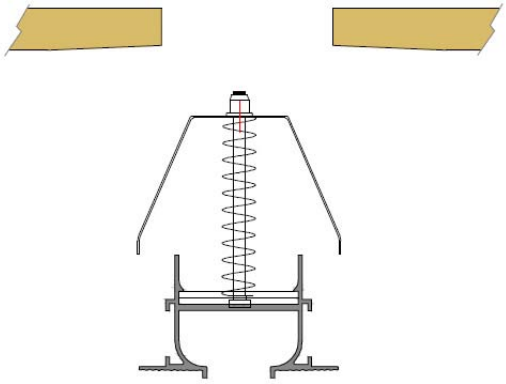
## PM Mounting Kit For LOOK-CM

PM Mounting Kit greatly facilitates and accelerates the diffuser installation, and works with or without plenum. Only for LOOK-CM.

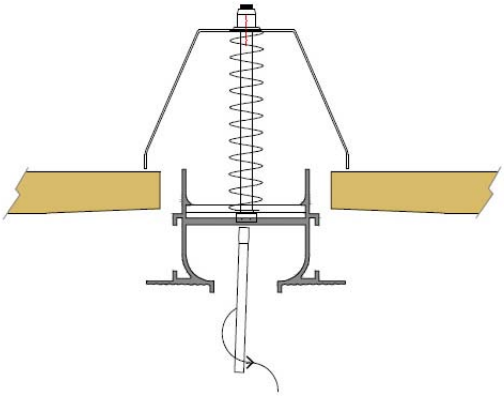
**PATENTED**



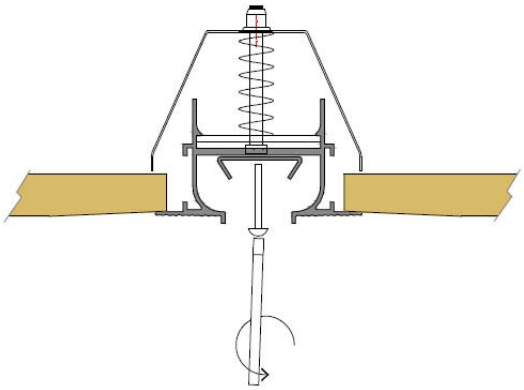
1. Remove deflector



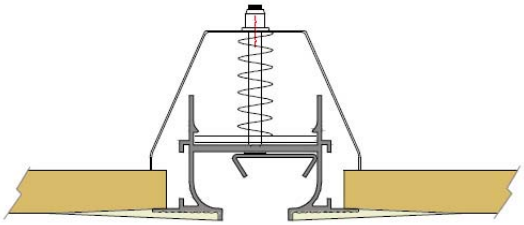
2. Insert in ceiling



3. Tighten clip with screwdriver



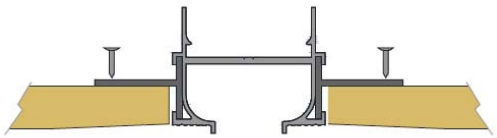
4. Reinstall deflector



4. Adjust deflector for desired airflow

## L Bracket For LOOK-SM

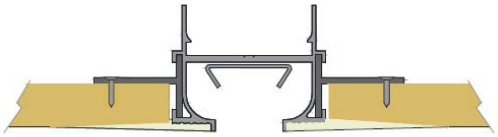
L Brackets works with or without plenum. Only for LOOK-SM.



1. Adjust bracket

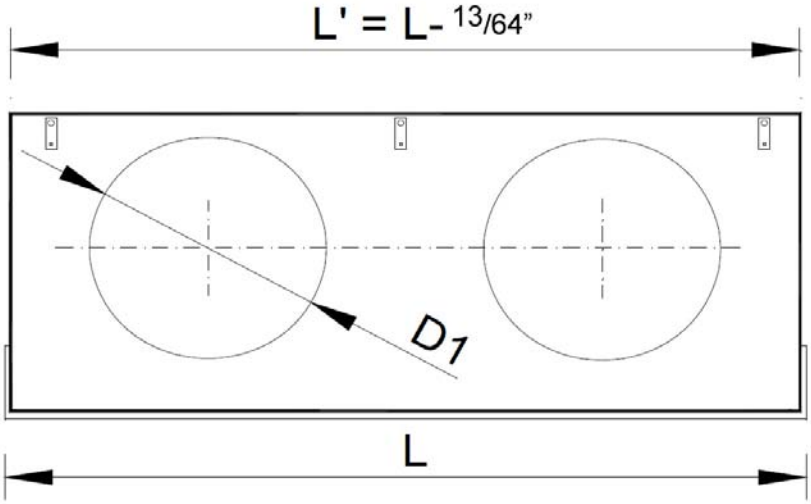


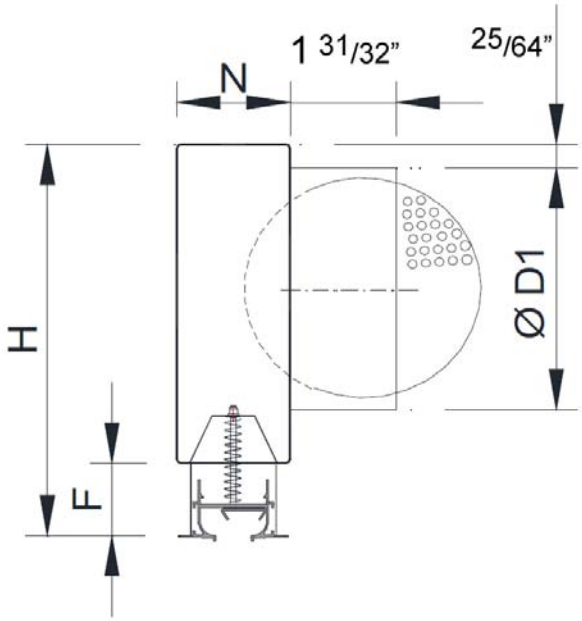
2. Tighten screws



3. Install and adjust deflector

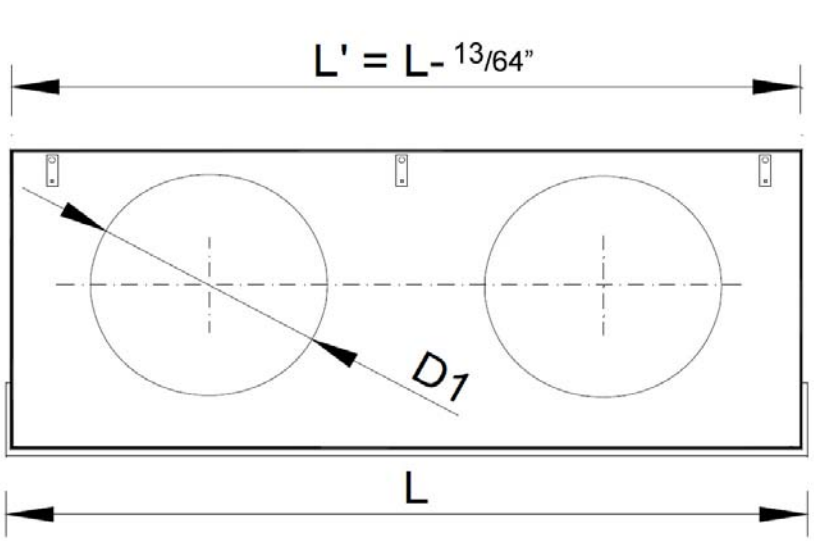
## PLOK-CM Plenum

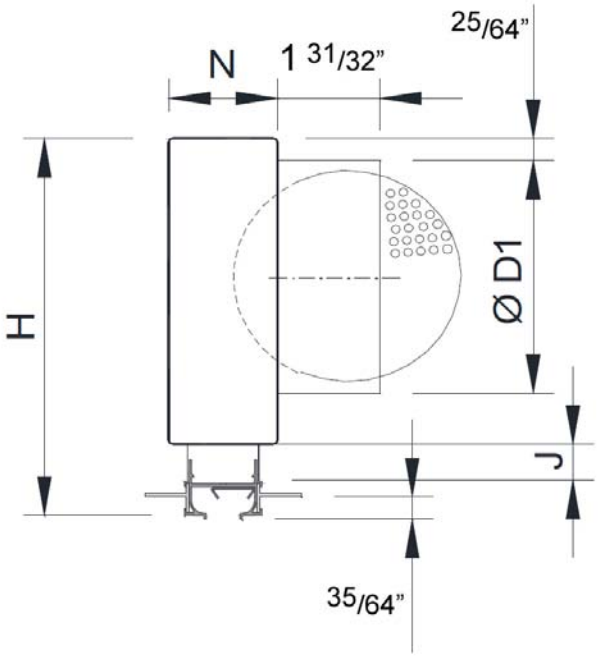



| Slot Width | | N | F | L ≤ 20" | | L ≤ 48" | | L ≤ 60" | | L ≤ 78" | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H | D1 | H | D1 | H | D1 | H | D1 |
| | **20** | 2 23/32" | 1 27/64" | 10 5/64" | 1x 6" | 10 5/64" | 1x 6" | 10 5/64" | 1x 6" | 10 5/64" | 2x 6" |
| | **30** | 3 55/64" | 1 21/32" | 10 5/64" | 1x 6" | 10 5/64" | 1x 6" | 10 5/64" | 1x 6" | 10 5/64" | 2x 6" |
| | **40** | 4 1/4" | 1 21/32" | 10 5/64" | 1x 6" | 11 21/32" | 1x 8" | 11 21/32" | 2x 8" | 11 21/32" | 2x 8" |

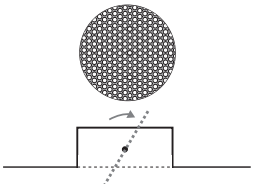
## PLOK-SM Plenum



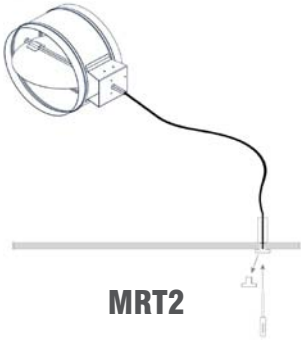

| Slot Width | | N | J | L ≤ 20" | | L ≤ 48" | | L ≤ 60" | | L ≤ 78" | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H | D1 | H | D1 | H | D1 | H | D1 |
| | **20** | 2 31/64" | 9/16" | 10 5/64" | 1x 6" | 10 5/64" | 1x 6" | 10 5/64" | 1x 6" | 10 5/64" | 2x 6" |
| | **30** | 3 5/8" | 51/64" | 10 5/64" | 1x 6" | 10 5/64" | 1x 6" | 10 5/64" | 1x 6" | 10 5/64" | 2x 6" |
| | **40** | 4 1/64" | 51/64" | 10 5/64" | 1x 6" | 11 21/32" | 1x 8" | 11 21/32" | 2x 8" | 11 21/32" | 2x 8" |

## Integrated Air Volume Dampers



**R**

Perforated damper + air equalizer



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

# SUBMITTAL

## LOOK



| Select Model | | |
|---|---|---|
| ✓ | **LOOK** | Hidden Linear Slot Diffuser |

| Flange | | |
|---|---|---|
| | **CM** | Large Flange |
| | **SM** | Short Flange |

| End Borders | | |
|---|---|---|
| | **AR** | Two End Borders |
| | **ARI** | Left End Border Only |
| | **ARD** | Right End Border Only |
| | **INT** | No End Border (Central Sections) |

| Mounting | | |
|---|---|---|
| | **PM** | Concealed Spring Clips (LOOK-CM only) |
| | **L** | L Brackets (LOOK-SM only) |

| Finish | | |
|---|---|---|
| | **/M9016** | Powder Coated White RAL 9016 |
| | **/M9010** | Powder Coated Off White RAL 9010 |
| | **/M9005** | Powder Coated Black RAL 9005 |
| | **/RAL xxxx** | Other (specify) : |

| Plenum | | |
|---|---|---|
| | **PLOK-CM** | Plenum for LOOK-CM |
| | **PLOK-SM** | Plenum for LOOK-SM |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT2** | Manually operated, drywall termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

| Insulation | | |
|---|---|---|
| | **R6** | 2" (50mm) Exterior R6 Thermal Insulation |

| Airflow Balancing (Optional) | | |
|---|---|---|
| | **W1** | 1 Way |
| | **V** | Vertical |

| Listed L (inches) |
|---|
| |

| Slot Width | | |
|---|---|---|
| | **20** | 3/4" |
| | **30** | 1 3/16" |
| | **40** | 1 1/2" |

**Project:**

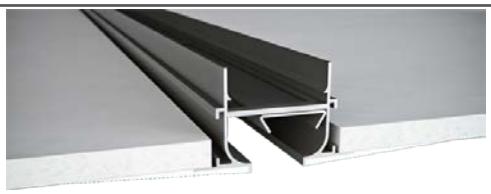
**Engineer:**

**Architect:**

**Contractor:**

## LOOK Series

## Hidden Linear Slot Diffuser



**Material |** Extruded aluminum and extruded PVC sectored deflection vanes

**Air Pattern |** Adjustable

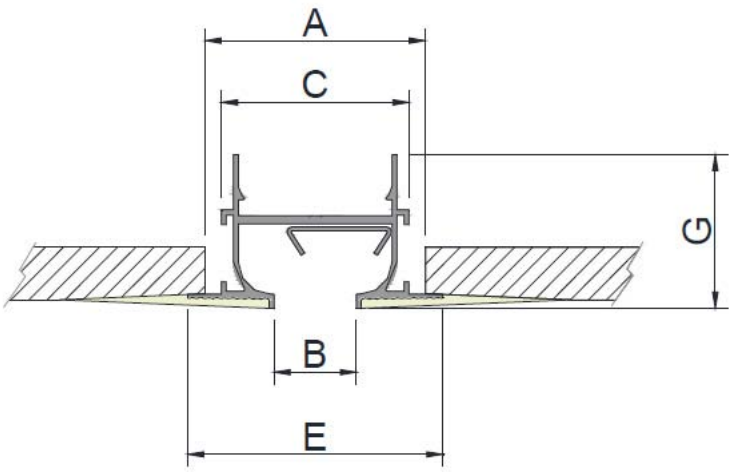
**Ceiling Types |** Open and Closed

**LOOK**
by MADEL®

### LOOK-CM

| Slot Width | | A | B | C | G | E |
|---|---|---|---|---|---|---|
| | **20** | 55 | 20 | 47 | 38.2 | 63.5 |
| | **30** | 84 | 30 | 76 | 45.2 | 97.3 |
| | **40** | 94 | 40 | 86 | 45.2 | 107.3 |

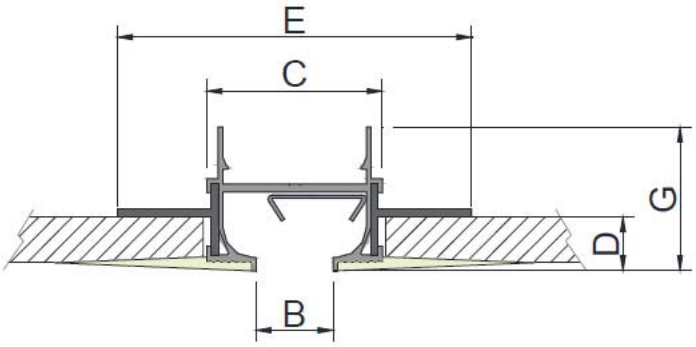
All dimensions in mm




### LOOK-SM

| Slot Width | | B | C | D | G | E |
|---|---|---|---|---|---|---|
| | **20** | 20 | 47 | 14 | 38.2 | 94.3 |
| | **30** | 30 | 76 | 14 | 45.2 | 123.5 |
| | **40** | 40 | 86 | 14 | 45.2 | 133.5 |

All dimensions in mm




### Continuous Sections




Maximum length for a single section is 2 meters. Longer continuous diffusers must be divided into smaller sections.





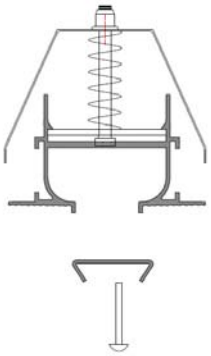




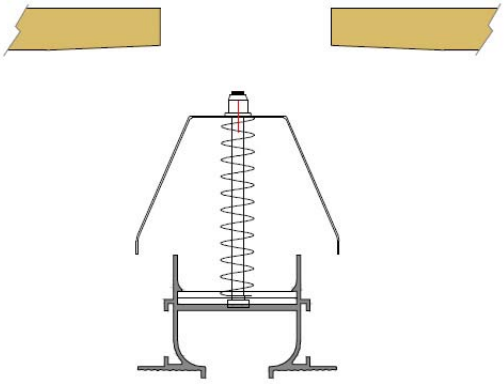
## PM Mounting Kit For LOOK-CM

PM Mounting Kit greatly facilitates and accelerates the diffuser installation, and works with or without plenum. Only for LOOK-CM.

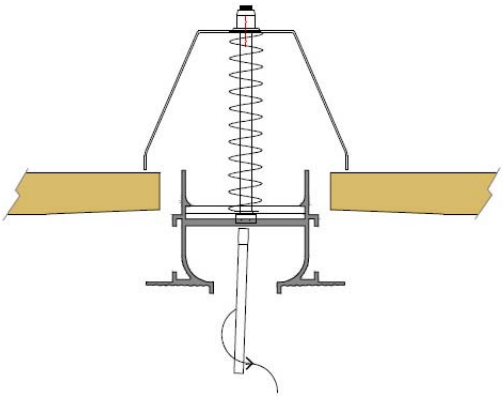
**PATENTED**



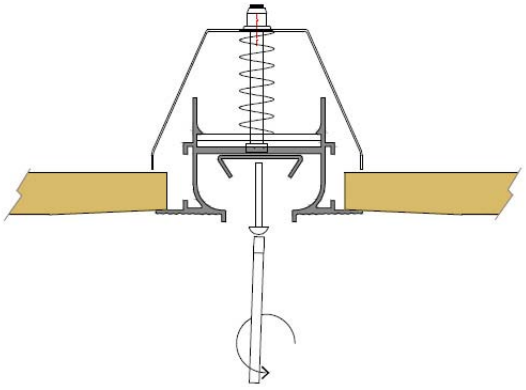
1. Remove deflector



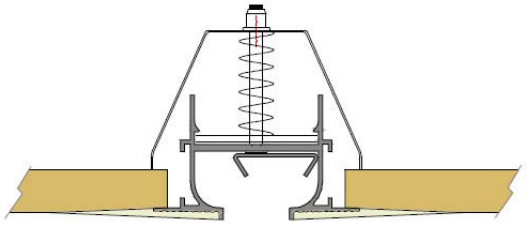
2. Insert in ceiling



3. Tighten clip with screwdriver



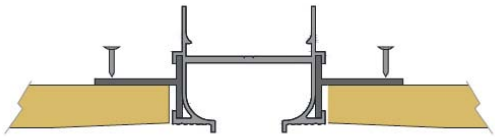
4. Reinstall deflector



4. Adjust deflector for desired airflow

## L Bracket For LOOK-SM

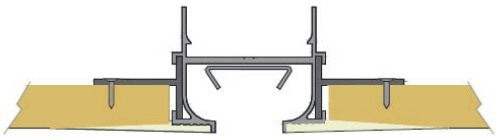
L Brackets works with or without plenum. Only for LOOK-SM.



1. Adjust bracket

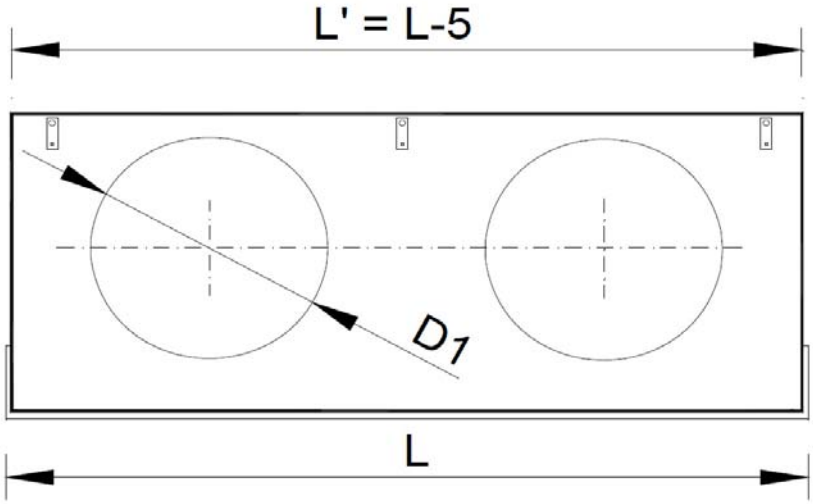


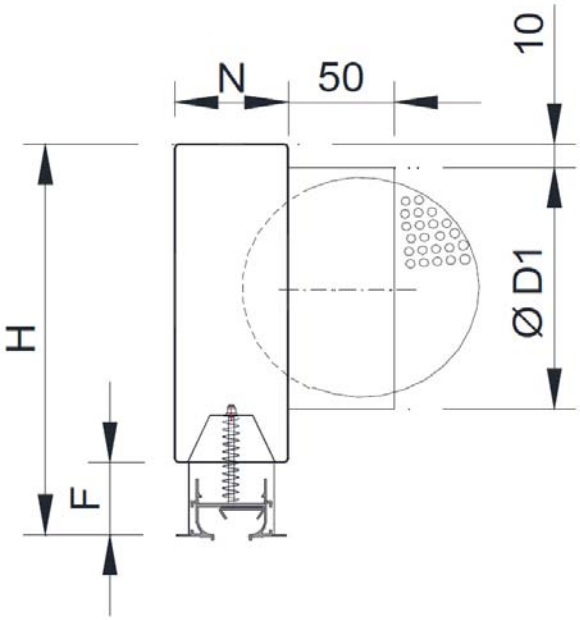
2. Tighten screws



3. Install and adjust deflector

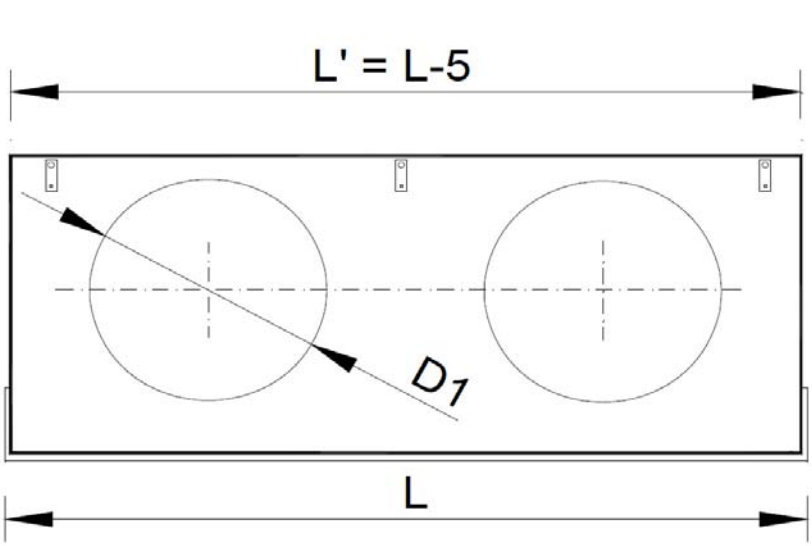
## PLOK-CM Plenum

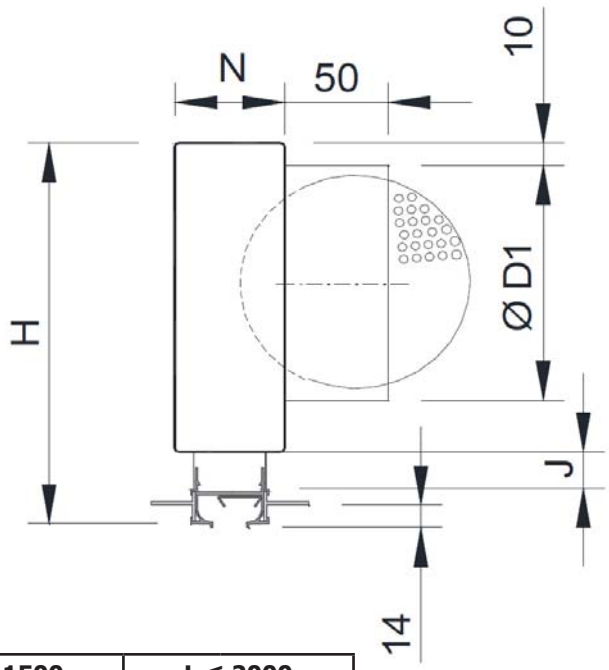



| Slot Width | | N | F | L ≤ 500 | | L ≤ 1200 | | L ≤ 1500 | | L ≤ 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H | D1 | H | D1 | H | D1 | H | D1 |
| | **20** | 69 | 36 | 256 | 1x 148 | 256 | 1x 148 | 256 | 1x 148 | 256 | 2x 148 |
| | **30** | 98 | 42 | 256 | 1x 148 | 256 | 1x 148 | 256 | 1x 148 | 256 | 2x 148 |
| | **40** | 108 | 42 | 256 | 1x 148 | 296 | 1x 198 | 296 | 2x 198 | 296 | 2x 198 |

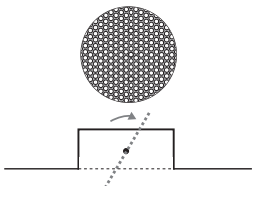
## PLOK-SM Plenum



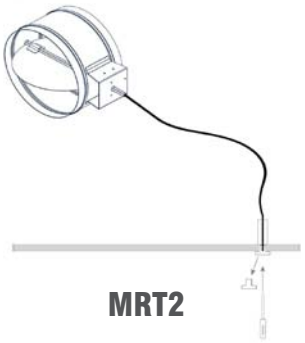

| Slot Width | | N | J | L ≤ 500 | | L ≤ 1200 | | L ≤ 1500 | | L ≤ 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H | D1 | H | D1 | H | D1 | H | D1 |
| | **20** | 63 | 14.3 | 256 | 1x 148 | 256 | 1x 148 | 256 | 1x 148 | 256 | 2x 148 |
| | **30** | 92 | 20.3 | 256 | 1x 148 | 256 | 1x 148 | 256 | 1x 148 | 256 | 2x 148 |
| | **40** | 102 | 20.3 | 256 | 1x 148 | 296 | 1x 198 | 296 | 2x 198 | 296 | 2x 198 |

## Integrated Air Volume Dampers



**R**

Perforated damper + air equalizer



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

# SUBMITTAL

## LOOK (METRIC)



| Select Model | | |
|---|---|---|
| ✓ | **LOOK** | Hidden Linear Slot Diffuser |

| Flange | | |
|---|---|---|
| | **CM** | Large Flange |
| | **SM** | Short Flange |

| End Borders | | |
|---|---|---|
| | **AR** | Two End Borders |
| | **ARI** | Left End Border Only |
| | **ARD** | Right End Border Only |
| | **INT** | No End Border (Central Sections) |

| Mounting | | |
|---|---|---|
| | **PM** | Concealed Spring Clips (LOOK-CM only) |
| | **L** | L Brackets (LOOK-SM only) |

| Finish | | |
|---|---|---|
| | **/M9016** | Powder Coated White RAL 9016 |
| | **/M9010** | Powder Coated Off White RAL 9010 |
| | **/M9005** | Powder Coated Black RAL 9005 |
| | **/RAL xxxx** | Other (specify) : |

| Plenum | | |
|---|---|---|
| | **PLOK-CM** | Plenum for LOOK-CM |
| | **PLOK-SM** | Plenum for LOOK-SM |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT2** | Manually operated, drywall termination fixture |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

| Insulation | | |
|---|---|---|
| | **R6** | 2” (50mm) Exterior R6 Thermal Insulation |

| Airflow Balancing (Optional) | | |
|---|---|---|
| | **W1** | 1 Way |
| | **V** | Vertical |

| Listed L (inches) |
|---|
| |

| Slot Width | | |
|---|---|---|
| | **20** | 20 mm |
| | **30** | 30 mm |
| | **40** | 40 mm |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

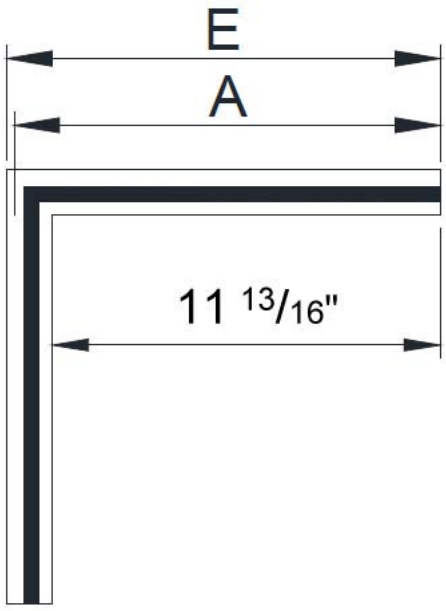
# LOOK-A90 Series

## Inactive 90° Angle for LOOK Hidden Slot Diffuser

**Material |** Extruded aluminum frame and galvanized steel deflector

**Air Pattern |** Adjustable

**Ceiling Types |** Open and Closed




| Slot Width | | E | A |
|---|---|---|---|
| | **20 (3/4")** | 14 21/64" | 14 9/64" |
| | **30 (1 3/16")** | 15 5/8" | 15 25/64" |
| | **40 (1 1/2")** | 16 1/32" | 15 25/32" |

| Select Model | |
|---|---|
| ✓ | **LOOK-A90** |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Powder Coated Off White RAL 9010 |
| | Powder Coated Black RAL 9005 |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

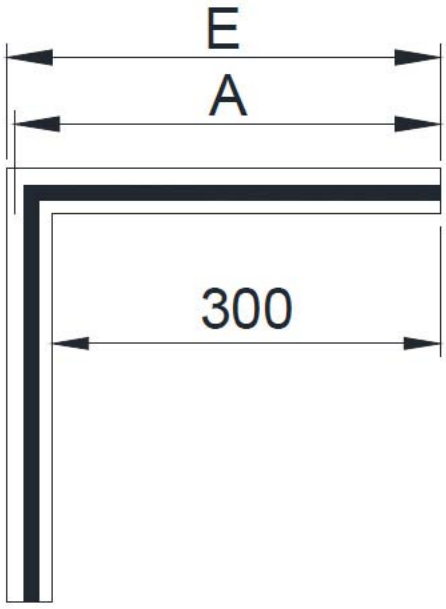
# LOOK-A90 Series

## Inactive 90° Angle for LOOK Hidden Slot Diffuser

**Material |** Extruded aluminum frame and galvanized steel deflector

**Air Pattern |** Adjustable

**Ceiling Types |** Open and Closed




| Slot Width | | E | A |
|---|---|---|---|
| | **20** | 364 | 359 |
| | **30** | 397 | 391 |
| | **40** | 407 | 401 |

All dimensions in mm

| Select Model | |
|---|---|
| ✓ | **LOOK-A90** |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Powder Coated Off White RAL 9010 |
| | Powder Coated Black RAL 9005 |
| | Other RAL (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## LSD Series

## High Induction Linear Slot Diffuser



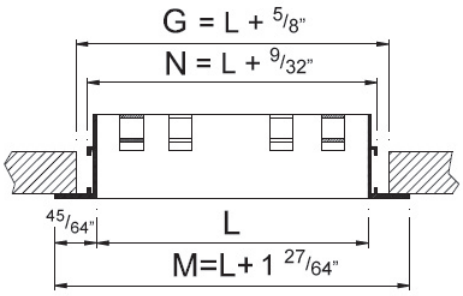
**LSD**

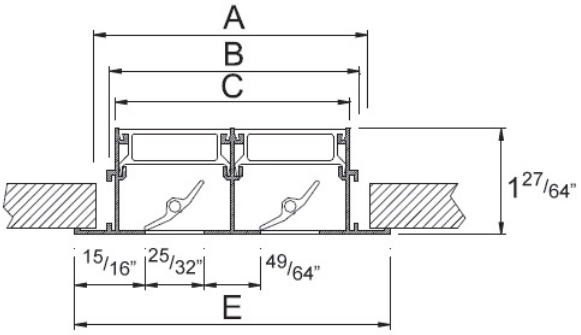
**by MADEL®**

**Material |** Extruded aluminum and extruded PVC sectored deflection vanes

**Air Pattern |** Adjustable

**Ceiling Types |** Open and Closed

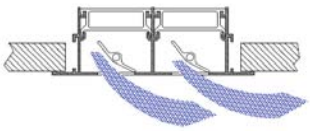


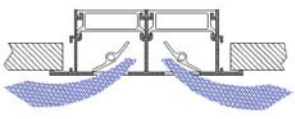

| Select Length | | | | |
|---|---|---|---|---|
| ✓ | **Standard Length** | **L** | **G** | **M** |
| | Standard 36″ | 35 7/16″ | 36 1/16″ | 36 27/32″ |
| | Standard 48″ | 46 19/64″ | 46 59/64″ | 47 3/4″ |
| | Standard 60″ | 59 1/16″ | 59 11/16″ | 60 15/32″ |
| | Standard 72″ | 70 55/64″ | 71 1/2″ | 72 9/32″ |
| | Custom (specify) : | | L + 5/8″ | L + 1 27/64″ |

| Select Number of Slots | | | | | |
|---|---|---|---|---|---|
| ✓ | **Nb Slots** | **E** | **A** | **B** | **C** |
| | **1** | 2 43/64″ | 2 11/64″ | 1 27/32″ | 1 19/32″ |
| | **2** | 4 7/32″ | 3 47/64″ | 3 25/64″ | 3 9/64″ |
| | **3** | 5 49/64″ | 5 9/32″ | 4 15/16″ | 4 45/64″ |
| | **4** | 7 5/16″ | 6 13/16″ | 6 31/64″ | 6 1/4″ |

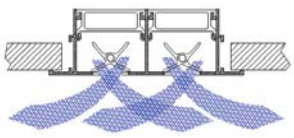
## Airflow Balancing



**1 Way**



**2 Way**



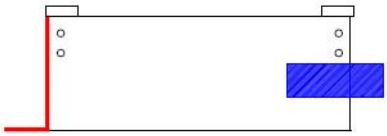
**2 Way Alternate (Default)**



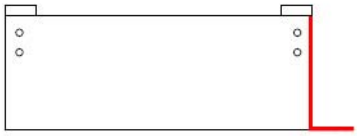
**Vertical**

## Continuous Lengths

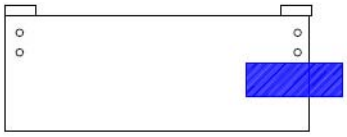
LSD-ARI Left Section (1 alignment strip, 1 end border)



LSD-ARD Right Section (no alignment strip, 1 end border)

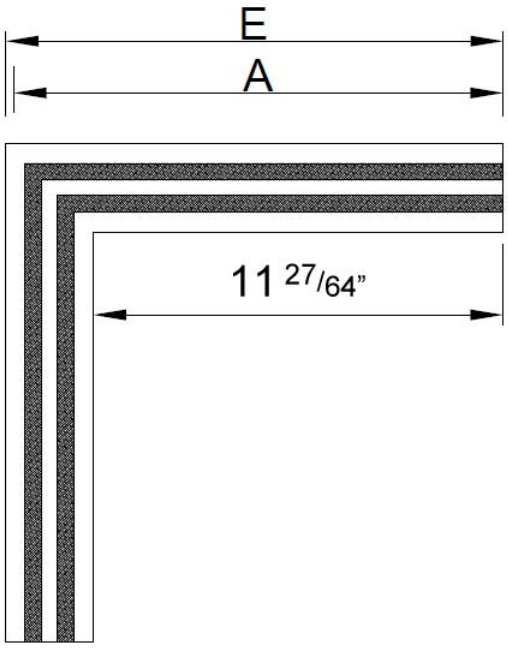


LSD-INT Interior Section (1 alignment strip, no end border)

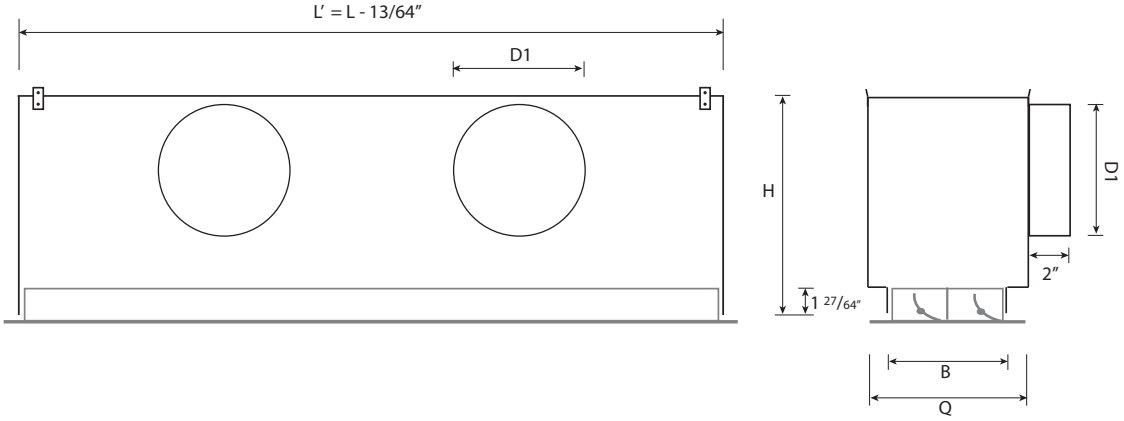


## LSD-A90 - Inactive 90° Angle

| Model | Nb of Slots | E | A |
|---|---|---|---|
| LSD-A90 1 | 1 | 14 31/64” | 14 3/32” |
| LSD-A90 2 | 2 | 16 1/32" | 15 5/8" |
| LSD-A90 3 | 3 | 17 19/32" | 17 13/64" |
| LSD-A90 4 | 4 | 19 9/64" | 18 47/64" |



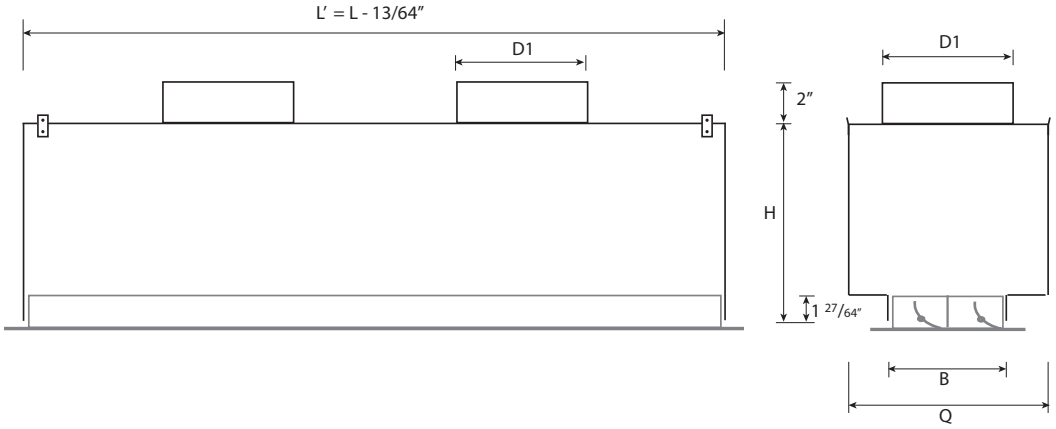
## PLSD Plenum (Side Connection)




| PLSD Plenum | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nb Slots | | H | B | Q | D1<br>L ≤ 19 11/16" | D1<br>L ≤ 39 3/8" | D1<br>L ≤ 47 1/4" | D1<br>L ≤ 59 1/16" | D1<br>L = 78 47/64" |
| | 1 | 10 5/64" | 1 27/32" | 2 23/32" | 1x 6"D | 1x 6"D | 1x 6"D | 1x 6"D | 2x 6"D |
| | 2 | 10 5/64" | 3 25/64" | 4 1/4" | 1x 6"D | 1x 6"D | 1x 6"D | 2x 6"D | 2x 6"D |
| | 3 | 11 21/32" | 4 15/16" | 5 25/32" | 1x 8"D | 1x 8"D | 2x 8"D | 2x 8"D | 2x 8"D |
| | 4 | 11 21/32" | 6 31/64" | 7 21/64" | 1x 8"D | 1x 8"D | 2x 8"D | 2x 8"D | 2x 8"D |

For different number or diameter of collars, please order PLSDSP

## PLSD-T Plenum (Top Connection)

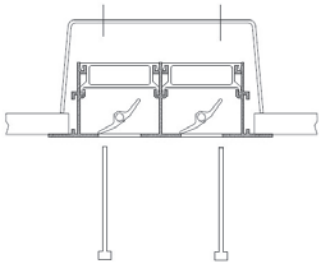



| PLSD-T Plenum | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nb Slots | | H | B | Q | D1<br>L ≤ 19 11/16" | D1<br>L ≤ 39 3/8" | D1<br>L ≤ 47 1/4" | D1<br>L ≤ 59 1/16" | D1<br>L = 78 47/64" |
| | 1 | 8" | 1 27/32" | 6 7/8" | 1x 6"D | 1x 6"D | 1x 6"D | 1x 6"D | 2x 6"D |
| | 2 | 8" | 3 25/64" | 6 7/8" | 1x 6"D | 1x 6"D | 1x 6"D | 2x 6"D | 2x 6"D |
| | 3 | 10" | 4 15/16" | 8 7/8" | 1x 8"D | 1x 8"D | 2x 8"D | 2x 8"D | 2x 8"D |
| | 4 | 10" | 6 31/64" | 8 7/8" | 1x 8"D | 1x 8"D | 2x 8"D | 2x 8"D | 2x 8"D |

For different number or diameter of collars, please order PLSDSP-T

## PM Mounting Kit

PM Mounting Kit consists of C shaped clips with long screws. Recommended for installation without plenum.

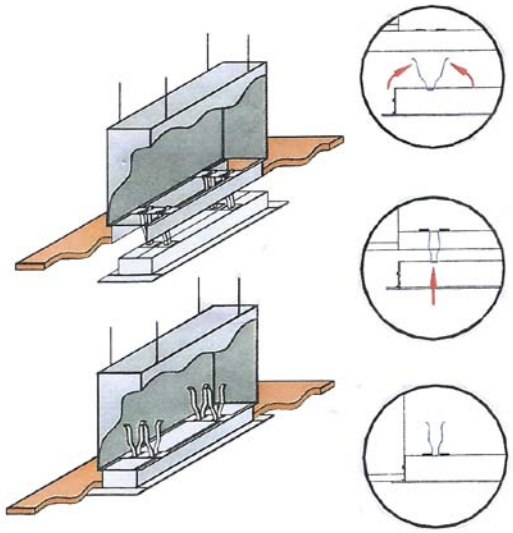


## PL Hidden Mounting System

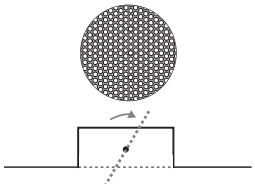
PL Hidden Mounting System consists of spring clips attached to the diffuser and special brackets attached to the plenum.

The clips have a two steps profile. The hooks must first be inserted into the brackets. The hooks secure the product in place, even when submitted to intense vibrations, making it safe for ceiling installation.

The second step only requires to push the diffuser until it lays flush with the gypsum or plenum opening. The spring pressure maintains the product in place.

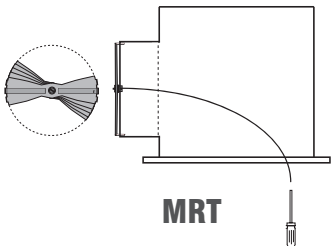


## Integrated Air Volume Dampers



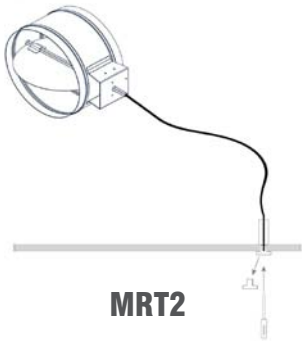
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Diffuser Face | | |
|---|---|---|
| | **AR** | Two End Borders |
| | **ARI** | Left End Border Only |
| | **ARD** | Right End Border Only |
| | **INT** | No End Border (Central Sections) |

| Airflow Balancing (Optional) | | |
|---|---|---|
| | **W1** | 1 Way |
| | **W2** | 2 Way |
| | **W2A** | 2 Way Alternate (Default) |
| | **V** | Vertical |

| Mounting | | |
|---|---|---|
| | **PL** | Concealed Spring Clips (requires PLSD) |
| | **PM** | Concealed U Clip |
| | **T** | Visible Screws |

| Sectored Vanes Color | | |
|---|---|---|
| | **AN** | Black |
| | **AB** | White |

| Finish | | |
|---|---|---|
| | **/M9016** | Powder Coated White RAL 9016 (standard) |
| | **/AA** | Anodized in matt silver with black vanes |
| | **/RAL xxxx** | Other (specify) : |

| Plenum | | | Nb Collar(s) | Diameter |
|---|---|---|---|---|
| | **PLSD** | Side connection & hidden spring clips attachment system | | |
| | **PLSD-T** | Top connection & hidden spring clips attachment system | | |
| | **PLSDSP** | Special plenum with specific collar(s) size(s), side connection | | |
| | **PLSDSP-T** | Special plenum with specific collar(s) size(s), top connection | | |

| Neck-Installed Air Volume Damper | | | Cable Length |
|---|---|---|---|
| | **R** | Perforated air volume damper/equalizer | |
| | **MRT** | Manually operated, cable through face | |
| | **MRT2** | Manually operated, drywall termination fixture | |
| | **EB** | Electro-balanced, battery powered, cable through face | |
| | **EB2** | Electro-balanced, battery powered, termination fixture | |

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **ALC** | Closed Cell Acoustical Insulation |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Air Equalizing Grid | | |
|---|---|---|
| | **EQ** | Perforated plate / air equalizer |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# LSD Series
## High Induction Linear Slot Diffuser

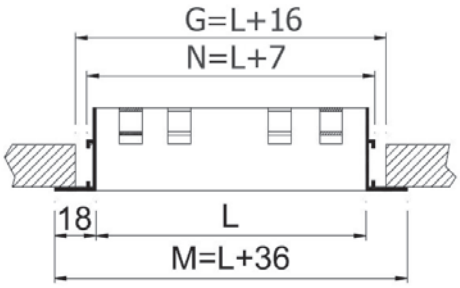


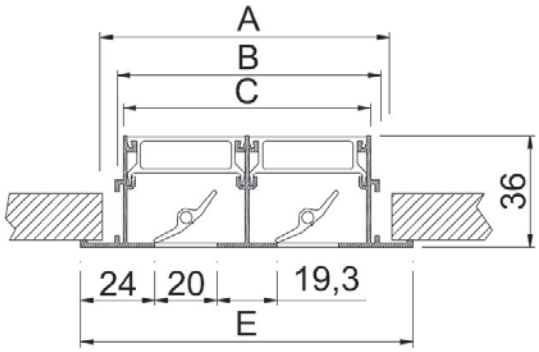
**LSD**
by MADEL®

**Material |** Extruded aluminum and extruded PVC sectored deflection vanes

**Air Pattern |** Adjustable

**Ceiling Types |** Open and Closed



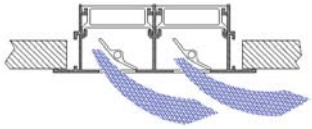

| Select Length | | | | |
|---|---|---|---|---|
| ✓ | **Standard Length** | **L** | **G** | **M** |
| | 900 | 900 | 916 | 936 |
| | 1176 | 1176 | 1192 | 1212 |
| | 1200 | 1200 | 1216 | 1236 |
| | 1500 | 1500 | 1516 | 1536 |
| | 1800 | 1800 | 1816 | 1836 |
| | 2000 | 2000 | 2016 | 2036 |
| | Custom (specify) : | | L + 16 | L + 36 |

All dimensions in mm

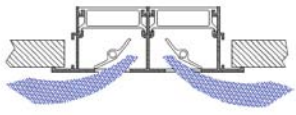
| Select Number of Slots | | | | | |
|---|---|---|---|---|---|
| ✓ | **Nb Slots** | **E** | **A** | **B** | **C** |
| | **1** | 68 | 55 | 46.7 | 40.5 |
| | **2** | 107.3 | 95 | 86.1 | 79.9 |
| | **3** | 146.6 | 134 | 125.5 | 119.3 |
| | **4** | 185.9 | 173 | 164.9 | 158.7 |

All dimensions in mm

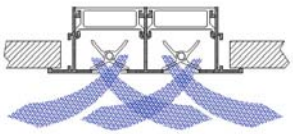
## Airflow Balancing



**1 Way**



**2 Way**



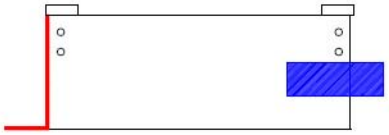
**2 Way Alternate (Default)**



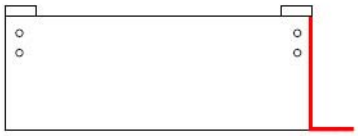
**Vertical**

## Continuous Lengths

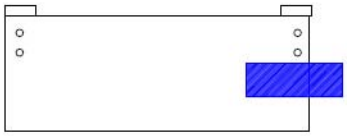
LSD-ARI Left Section (1 alignment strip, 1 end border)



LSD-ARD Right Section (no alignment strip, 1 end border)

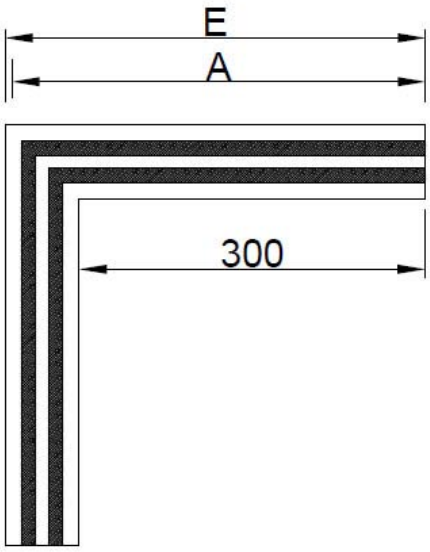


LSD-INT Interior Section (1 alignment strip, no end border)

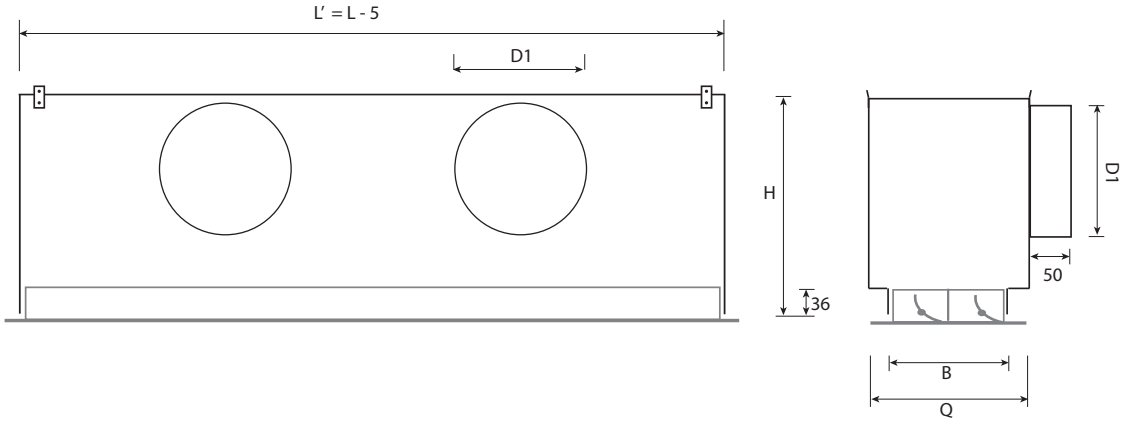


## LSD-A90 - Inactive 90° Angle

| Model | Nb of Slots | E | A |
|---|---|---|---|
| LSD-A90 1 | 1 | 368 mm | 358 mm |
| LSD-A90 2 | 2 | 407 mm | 397 mm |
| LSD-A90 3 | 3 | 447 mm | 437 mm |
| LSD-A90 4 | 4 | 486 mm | 476 mm |



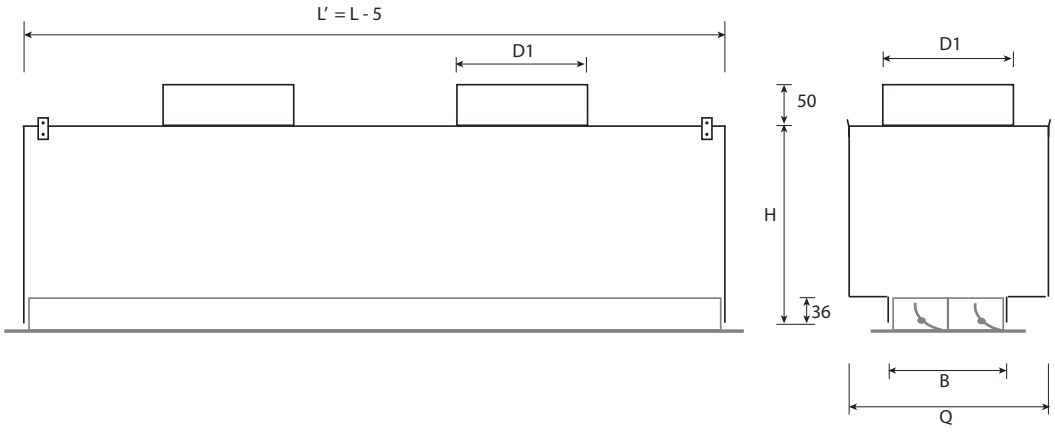
## PLSD Plenum (Side Connection)




| PLSD Plenum | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nb Slots | | H | B | Q | D1 (L ≤ 500) | D1 (L ≤ 1000) | D1 (L ≤ 1200) | D1 (L ≤ 1500) | D1 (L ≤ 2000) |
| | 1 | 256 | 46.7 | 69 | 1x 148 | 1x 148 | 1x 148 | 1x 148 | 2x 148 |
| | 2 | 256 | 86.1 | 108 | 1x 148 | 1x 148 | 1x 148 | 2x 148 | 2x 148 |
| | 3 | 296 | 125.5 | 147 | 1x 198 | 1x 198 | 2x 198 | 2x 198 | 2x 198 |
| | 4 | 296 | 164.9 | 186 | 1x 198 | 1x 198 | 2x 198 | 2x 198 | 2x 198 |

For different number or diameter of collars, please order PLSDSP

## PLSD-T Plenum (Top Connection)

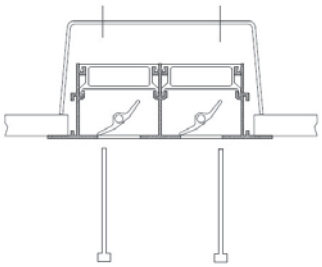



| PLSD-T Plenum | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nb Slots | | H | B | Q | D1 (L ≤ 500) | D1 (L ≤ 1000) | D1 (L ≤ 1200) | D1 (L ≤ 1500) | D1 (L ≤ 2000) |
| | 1 | 203 | 46.7 | 175 | 1x 148 | 1x 148 | 1x 148 | 1x 148 | 2x 148 |
| | 2 | 203 | 86.1 | 175 | 1x 148 | 1x 148 | 1x 148 | 2x 148 | 2x 148 |
| | 3 | 254 | 125.5 | 225 | 1x 198 | 1x 198 | 2x 198 | 2x 198 | 2x 198 |
| | 4 | 254 | 164.9 | 225 | 1x 198 | 1x 198 | 2x 198 | 2x 198 | 2x 198 |

For different number or diameter of collars, please order PLSDSP-T

## PM Mounting Kit

PM Mounting Kit consists of C shaped clips with long screws. Recommended for installation without plenum.

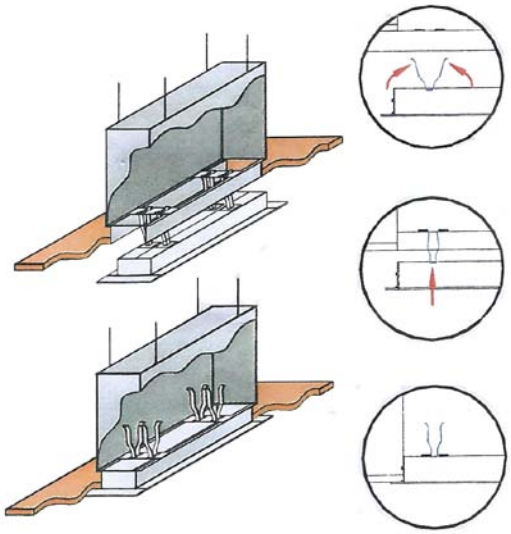


## PL Hidden Mounting System

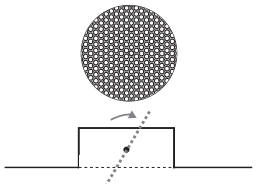
PL Hidden Mounting System consists of spring clips attached to the diffuser and special brackets attached to the plenum.

The clips have a two steps profile. The hooks must first be inserted into the brackets. The hooks secure the product in place, even when submitted to intense vibrations, making it safe for ceiling installation.

The second step only requires to push the diffuser until it lays flush with the gypsum or plenum opening. The spring pressure maintains the product in place.

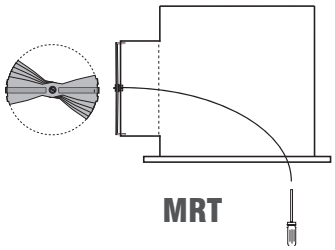


## Integrated Air Volume Dampers



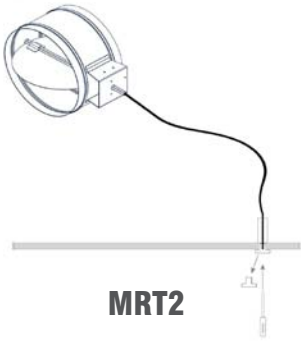
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Diffuser Face | | |
|---|---|---|
| | **LSD-AR** | Two End Borders |
| | **LSD-ARI** | Left End Border Only |
| | **LSD-ARD** | Right End Border Only |
| | **LSD-INT** | No End Border (Central Sections) |

| Airflow Balancing (Optional) | | |
|---|---|---|
| | **W1** | 1 Way |
| | **W2** | 2 Way |
| | **W2A** | 2 Way Alternate (Default) |
| | **V** | Vertical |

| Mounting | | |
|---|---|---|
| | **PL** | Concealed Spring Clips (requires PLSD) |
| | **PM** | Concealed U Clip |
| | **T** | Visible Screws |

| Sectored Vanes Color | | |
|---|---|---|
| | **AN** | Black |
| | **AB** | White |

| Finish | | |
|---|---|---|
| | **/M9016** | Powder Coated White RAL 9016 (standard) |
| | **/AA** | Anodized in matt silver with black vanes |
| | **/RAL xxxx** | Other (specify) : |

| Plenum | | | Nb Collar(s) | Diameter |
|---|---|---|---|---|
| | **PLSD** | Side connection & hidden spring clips attachment system | | |
| | **PLSD-T** | Top connection & hidden spring clips attachment system | | |
| | **PLSDSP** | Special plenum with specific collar(s) size(s), side connection | | |
| | **PLSDSP-T** | Special plenum with specific collar(s) size(s), top connection | | |

| Neck-Installed Air Volume Damper | | | Cable Length |
|---|---|---|---|
| | **R** | Perforated air volume damper/equalizer | |
| | **MRT** | Manually operated, cable through face | |
| | **MRT2** | Manually operated, drywall termination fixture | |
| | **EB** | Electro-balanced, battery powered, cable through face | |
| | **EB2** | Electro-balanced, battery powered, termination fixture | |

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" (13mm) Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **ALC** | Closed Cell Acoustical Insulation |
| | **R6** | 2" (50mm) Exterior R6 Thermal Insulation |

| Air Equalizing Grid | | |
|---|---|---|
| | **EQ** | Perforated plate / air equalizer |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

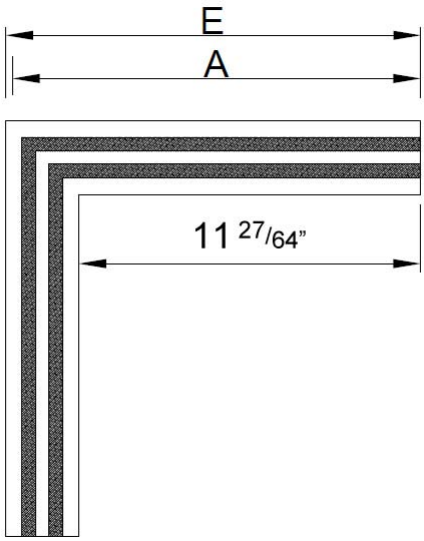
# LSD-A90 Series

## Inactive 90° Angle for Linear Sectored Slot Diffusers

**Material |** Extruded aluminum and extruded PVC sectored deflection vanes

**Air Pattern |** Adjustable

**Ceiling Types |** Open and Closed




| Nb of Slots | | E | A |
|---|---|---|---|
| | **1** | 14 31/64" | 14 3/32" |
| | **2** | 16 1/32" | 15 5/8" |
| | **3** | 17 19/32" | 17 13/64" |
| | **4** | 19 9/64" | 18 47/64" |

| Select Model | |
|---|---|
| ✓ | **LSD-A90** |

| Sectored Vanes Color | |
|---|---|
| | Black (/AN) |
| | White (/AB) |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Anodized in matt silver with black vanes |
| | Other (specify) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

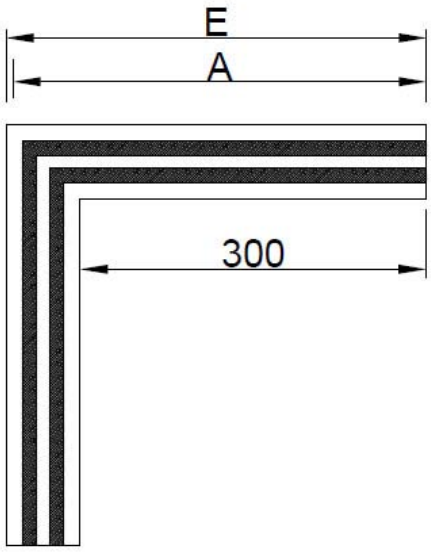
# LSD-A90 Series

## Inactive 90° Angle for Linear Sectored Slot Diffusers

**Material |** Extruded aluminum and extruded PVC sectored deflection vanes

**Air Pattern |** Adjustable

**Ceiling Types |** Open and Closed




| Nb of Slots | | E | A |
|---|---|---|---|
| | **1** | 368 | 358 |
| | **2** | 407 | 397 |
| | **3** | 447 | 437 |
| | **4** | 486 | 476 |

| Select Model | |
|---|---|
| ✓ | **LSD-A90** |

| Sectored Vanes Color | |
|---|---|
| | Black (/AN) |
| | White (/AB) |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Anodized in matt silver with black vanes |
| | Other (specify) : |

**Project:**

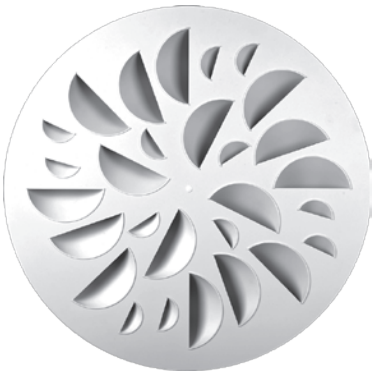
**Engineer:**

**Architect:**

**Contractor:**

# NEX-C Series

## Concave Elements Architectural Round Swirl Diffuser



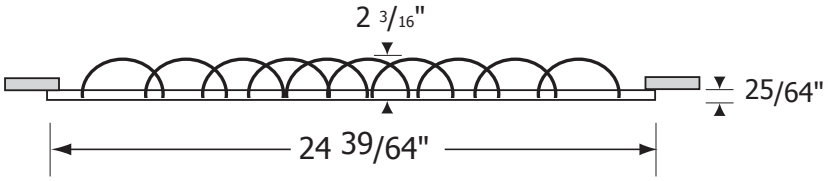
**NEX-C**
**by MADEL®**

**PATENTED**

**Material |** Powder coated stamped heavy gauge steel face with ABS elements and galvanized steel plenum.

**Air Pattern |** Fix high induction swirl pattern.

**Ceiling Types |** Open and Closed.

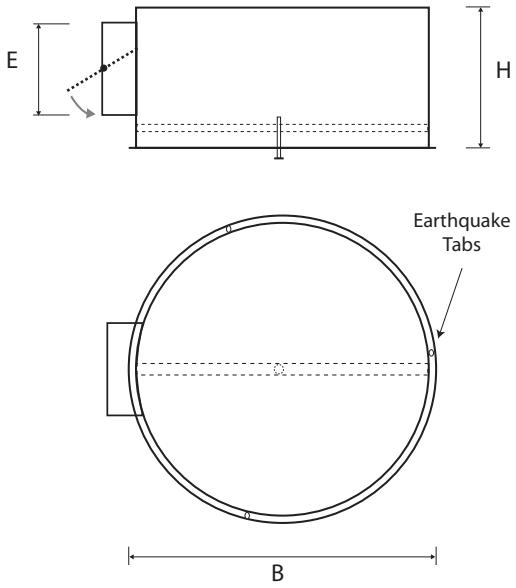



| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | NEX-C 25 | | NEX-C 625 |

| Select Elements Color | |
|---|---|
| | White Elements (Standard) |
| | Lavender Blue (/EL) |
| | Pistachio Green (/EV) |
| | Night (/EN) |
| | Red (/ER) |

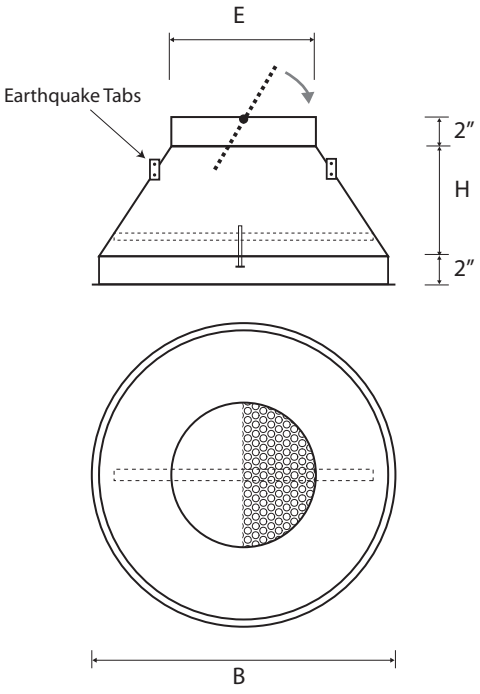
| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other (specify) : |

## Plenum




### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.




### PERFAIR-CT

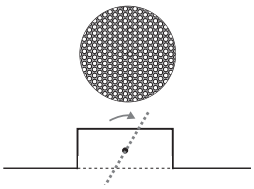
Conical with top duct connection, ideal for open ceilings with visible duct.

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 1205** | 5 | 11 3/8 | 4 7/8 | 9 |
| | **PERFAIR-CS 1206** | 6 | 11 3/8 | 5 7/8 | 9 |
| | **PERFAIR-CS 1208** | 8 | 11 3/8 | 7 7/8 | 9 |
| | **PERFAIR-CS 1606** | 6 | 15 1/4 | 5 7/8 | 10 |
| | **PERFAIR-CS 1608** | 8 | 15 1/4 | 7 7/8 | 10 |
| | **PERFAIR-CS 2006** | 6 | 19 | 5 7/8 | 12 |
| | **PERFAIR-CS 2008** | 8 | 19 | 7 7/8 | 12 |
| | **PERFAIR-CS 2010** | 10 | 19 | 9 7/8 | 12 |
| | **PERFAIR-CS 2506** | 6 | 24 | 5 7/8 | 13 |
| | **PERFAIR-CS 2508** | 8 | 24 | 7 7/8 | 13 |
| | **PERFAIR-CS 2510** | 10 | 24 | 9 7/8 | 13 |
| | **PERFAIR-CS 2512** | 12 | 24 | 11 7/8 | 13 |
| | **PERFAIR-CS 3312** | 12 | 33 | 11 7/8 | 16 |

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 1205** | 5 | 11 3/8 | 4 7/8 | 6 |
| | **PERFAIR-CT 1206** | 6 | 11 3/8 | 5 7/8 | 6 |
| | **PERFAIR-CT 1208** | 8 | 11 3/8 | 7 7/8 | 6 |
| | **PERFAIR-CT 1606** | 6 | 15 1/4 | 5 7/8 | 6 |
| | **PERFAIR-CT 1608** | 8 | 15 1/4 | 7 7/8 | 6 |
| | **PERFAIR-CT 2006** | 6 | 19 | 5 7/8 | 8 |
| | **PERFAIR-CT 2008** | 8 | 19 | 7 7/8 | 8 |
| | **PERFAIR-CT 2010** | 10 | 19 | 9 7/8 | 8 |
| | **PERFAIR-CT 2506** | 6 | 24 | 5 7/8 | 8 |
| | **PERFAIR-CT 2508** | 8 | 24 | 7 7/8 | 8 |
| | **PERFAIR-CT 2510** | 10 | 24 | 9 7/8 | 8 |
| | **PERFAIR-CT 2512** | 12 | 24 | 11 7/8 | 8 |
| | **PERFAIR-CT 3312** | 12 | 33 | 11 7/8 | 12 |

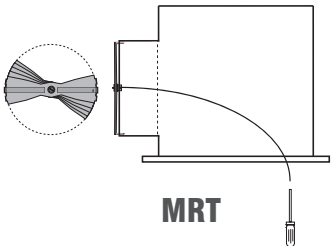
All dimensions in inches

## Air Volume Dampers



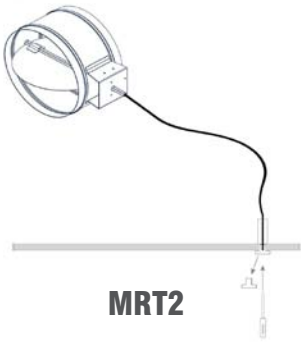
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## NEX-ALU-C Series
## Concave Elements Architectural Aluminum Round Swirl Diffuser



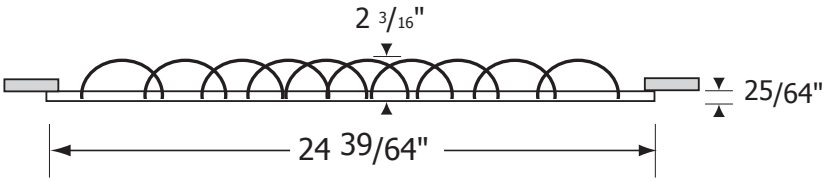
**NEX-ALU-C**
**by MADEL®**

**PATENTED**

**Material |** Powder coated stamped heavy gauge aluminum face and ABS diffusion elements and galvanized steel plenum.

**Air Pattern |** Fix high induction swirl pattern.

**Ceiling Types |** Open and Closed.

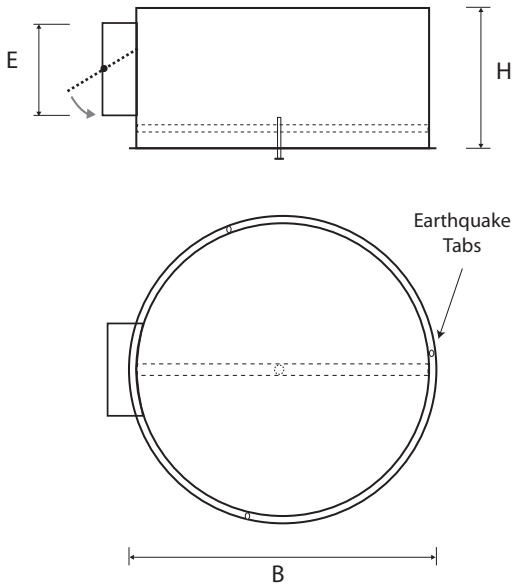



| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | NEX-ALU-C 25 | | NEX-ALU-C 625 |

| Select Elements Color | |
|---|---|
| | White Elements (Standard) |
| | Lavender Blue (/EL) |
| | Pistachio Green (/EV) |
| | Night (/EN) |
| | Red (/ER) |

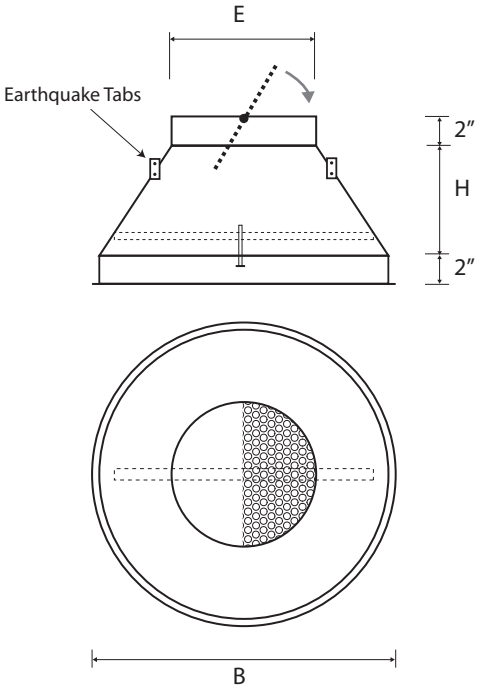
| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other (specify) : |

## Plenum




### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.




### PERFAIR-CT

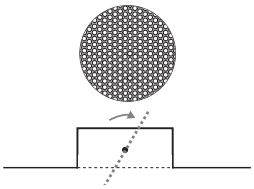
Conical with top duct connection, ideal for open ceilings with visible duct.

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 1205** | 5 | 11 3/8 | 4 7/8 | 9 |
| | **PERFAIR-CS 1206** | 6 | 11 3/8 | 5 7/8 | 9 |
| | **PERFAIR-CS 1208** | 8 | 11 3/8 | 7 7/8 | 9 |
| | **PERFAIR-CS 1606** | 6 | 15 1/4 | 5 7/8 | 10 |
| | **PERFAIR-CS 1608** | 8 | 15 1/4 | 7 7/8 | 10 |
| | **PERFAIR-CS 2006** | 6 | 19 | 5 7/8 | 12 |
| | **PERFAIR-CS 2008** | 8 | 19 | 7 7/8 | 12 |
| | **PERFAIR-CS 2010** | 10 | 19 | 9 7/8 | 12 |
| | **PERFAIR-CS 2506** | 6 | 24 | 5 7/8 | 13 |
| | **PERFAIR-CS 2508** | 8 | 24 | 7 7/8 | 13 |
| | **PERFAIR-CS 2510** | 10 | 24 | 9 7/8 | 13 |
| | **PERFAIR-CS 2512** | 12 | 24 | 11 7/8 | 13 |
| | **PERFAIR-CS 3312** | 12 | 33 | 11 7/8 | 16 |

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 1205** | 5 | 11 3/8 | 4 7/8 | 6 |
| | **PERFAIR-CT 1206** | 6 | 11 3/8 | 5 7/8 | 6 |
| | **PERFAIR-CT 1208** | 8 | 11 3/8 | 7 7/8 | 6 |
| | **PERFAIR-CT 1606** | 6 | 15 1/4 | 5 7/8 | 6 |
| | **PERFAIR-CT 1608** | 8 | 15 1/4 | 7 7/8 | 6 |
| | **PERFAIR-CT 2006** | 6 | 19 | 5 7/8 | 8 |
| | **PERFAIR-CT 2008** | 8 | 19 | 7 7/8 | 8 |
| | **PERFAIR-CT 2010** | 10 | 19 | 9 7/8 | 8 |
| | **PERFAIR-CT 2506** | 6 | 24 | 5 7/8 | 8 |
| | **PERFAIR-CT 2508** | 8 | 24 | 7 7/8 | 8 |
| | **PERFAIR-CT 2510** | 10 | 24 | 9 7/8 | 8 |
| | **PERFAIR-CT 2512** | 12 | 24 | 11 7/8 | 8 |
| | **PERFAIR-CT 3312** | 12 | 33 | 11 7/8 | 12 |

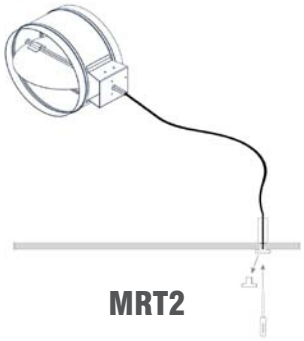
All dimensions in inches

## Air Volume Dampers



**R**

Perforated damper + air equalizer



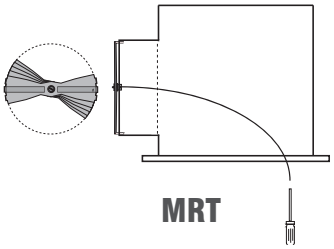
**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**EB**

Battery operated electro-balance damper with remote control, cable through face

| | Insulation | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| | Neck-Installed Air Volume Damper | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| | Cable Length (MRT2 or EB2) |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## NEX-S Series

## Concave Elements Architectural Square Swirl Diffuser



**NEX-S**

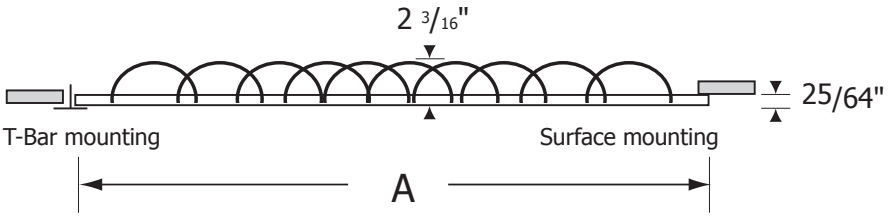
**by MADEL®**

**PATENTED**

**Material |** Powder coated stamped heavy gauge steel face with ABS diffusion elements and galvanized steel plenum.

**Air Pattern |** Fix high induction swirl pattern.

**Ceiling Types |** False, Open and Closed.

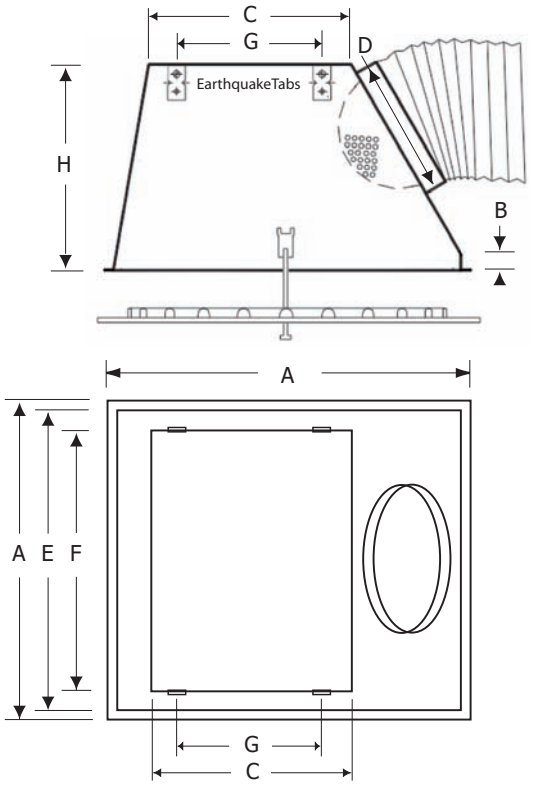



| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | **Imperial** | **A** | ✓ | **Metric** | **A** |
| | NEX-S 12 | 11 3/4" | | NEX-S 300 | 295 mm |
| | NEX-S 24 | 23 3/4" | | NEX-S 610 | 605 mm |

| Select Elements Color | |
|---|---|
| | White Elements (Standard) |
| | Lavender Blue (/EL) |
| | Pistachio Green (/EV) |
| | Night (/EN) |
| | Red (/ER) |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

## Plenum



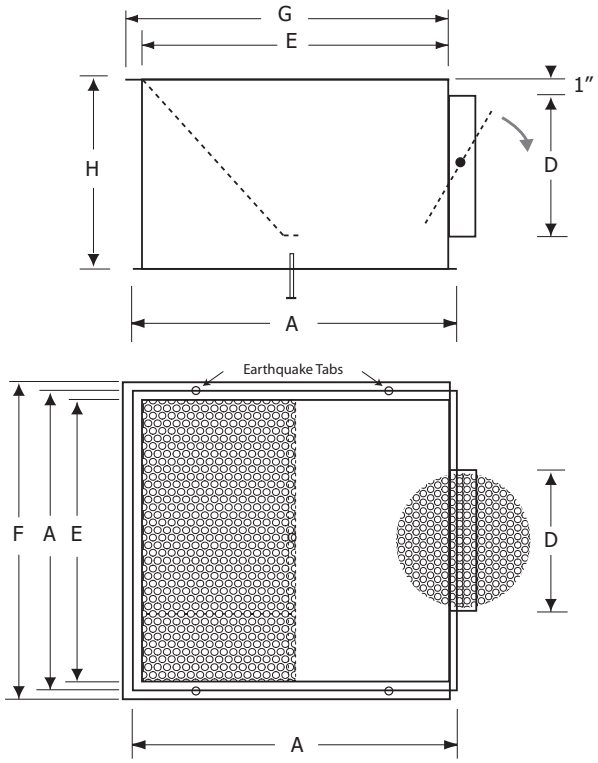

### PERFAIR-SS

Trapezoidal with side duct connection, recommended for closed ceilings and false ceilings.

| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B | C | D | E | F | G | H |
| | **PERFAIR-SS 1205** | 5 | 11 1/2 | 1 | 5 3/4 | 4 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1206** | 6 | 11 1/2 | 1 | 5 3/4 | 5 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1208** | 8 | 11 1/2 | 1 | 5 3/4 | 7 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 12 |
| | **PERFAIR-SS 1608** | 8 | 15 3/8 | 1 | 7 1/2 | 7 7/8 | 14 5/8 | 13 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2010** | 10 | 19 1/4 | 1 | 8 1/2 | 9 7/8 | 18 5/8 | 17 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2405** | 5 | 23 1/2 | 1 | 10 1/2 | 4 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2406** | 6 | 23 1/2 | 1 | 10 1/2 | 5 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2408** | 8 | 23 1/2 | 1 | 10 1/2 | 7 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2410** | 10 | 23 1/2 | 1 | 10 1/2 | 9 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2412** | 12 | 23 1/2 | 1 | 10 1/2 | 11 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |

All dimensions in inches

## Plenum (continued)



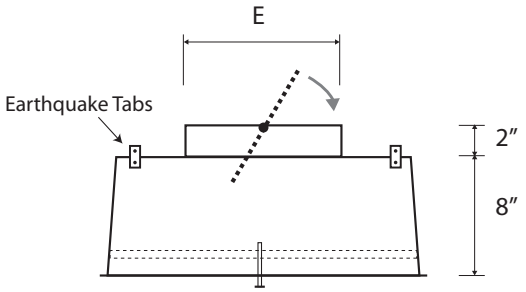

### PERFAIR-SSS

Rectangular with side connection, recommended for open ceilings with rigid duct entering from the side.

| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | D | E | F | G | H |
| | **PERFAIR-SSS 1205** | 5 | 11 1/2 | 4 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1206** | 6 | 11 1/2 | 5 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1208** | 8 | 11 1/2 | 7 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1608** | 8 | 15 3/8 | 7 7/8 | 14 5/8 | 16 5/8 | 15 5/8 | 12 |
| | **PERFAIR-SSS 2010** | 10 | 19 1/4 | 9 7/8 | 18 5/8 | 21 5/8 | 19 5/8 | 14 |
| | **PERFAIR-SSS 2405** | 5 | 23 1/2 | 4 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2406** | 6 | 23 1/2 | 5 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2408** | 8 | 23 1/2 | 7 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2410** | 10 | 23 1/2 | 9 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2412** | 12 | 23 1/2 | 11 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |

All dimensions in inches

## Plenum (continued)

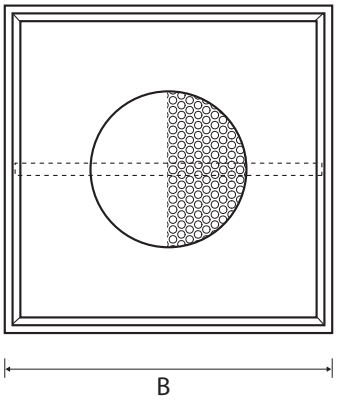



### PERFAIR-ST

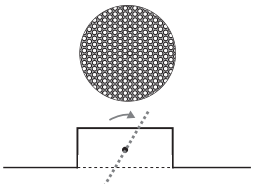
Top duct connection, recommended for open ceilings with visible duct.

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E |
| | **PERFAIR-ST 1206** | 6 | 11 1/2 | 5 7/8 |
| | **PERFAIR-ST 1208** | 8 | 11 1/2 | 7 7/8 |
| | **PERFAIR-ST 2406** | 6 | 23 1/2 | 5 7/8 |
| | **PERFAIR-ST 2408** | 8 | 23 1/2 | 7 7/8 |
| | **PERFAIR-ST 2410** | 10 | 23 1/2 | 9 7/8 |
| | **PERFAIR-ST 2412** | 12 | 23 1/2 | 11 7/8 |

All dimensions in inches

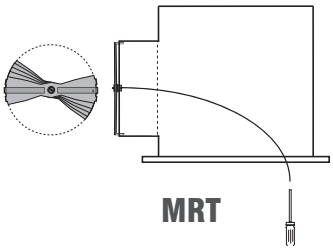



## Air Volume Dampers



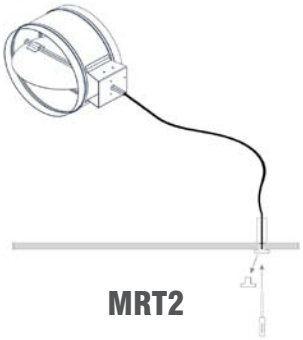
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2” Interior Accoustical Liner |
| | **AL1** | 1” Interior Accoustical Liner |
| | **R6** | 2” Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## NEX-ALU-S Series
## Concave Elements Architectural Aluminum Square Swirl Diffuser



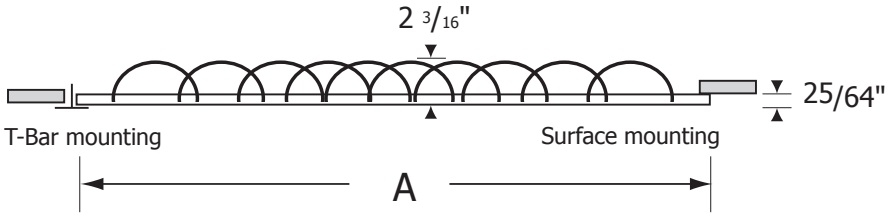
**NEX-ALU-S**
by MADEL®

**PATENTED**

**Material |** Powder coated stamped heavy gauge aluminum face with ABS elements and galvanized steel plenum.

**Air Pattern |** Fix high induction swirl pattern.

**Ceiling Types |** False, Open and Closed.

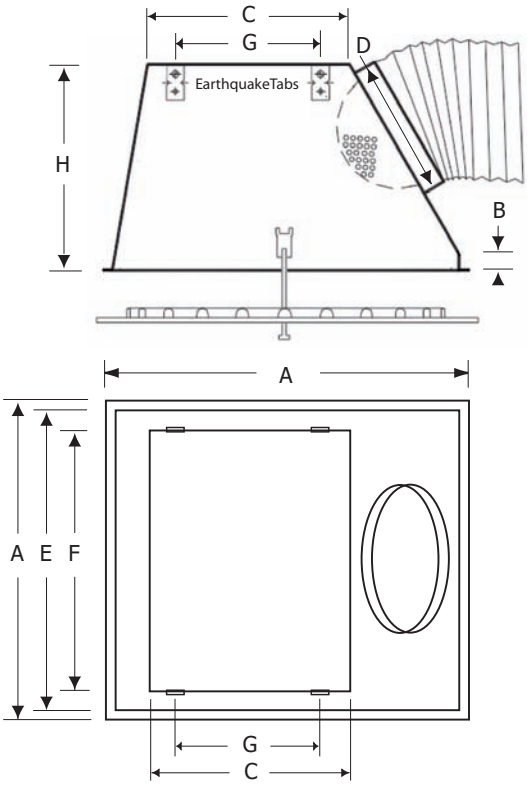



| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | **Imperial** | **A** | ✓ | **Metric** | **A** |
| | NEX-ALU-S 12 | 11 3/4" | | NEX-ALU-S 300 | 295 mm |
| | NEX-ALU-S 24 | 23 3/4" | | NEX-ALU-S 610 | 605 mm |

| Select Elements Color | |
|---|---|
| | White Elements (Standard) |
| | Lavender Blue (/EL) |
| | Pistachio Green (/EV) |
| | Night (/EN) |
| | Red (/ER) |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL : |

## Plenum



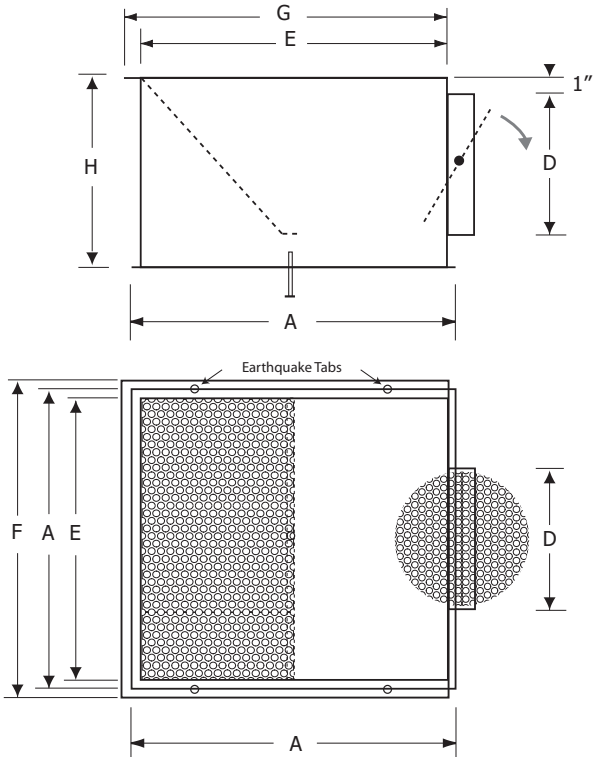

### PERFAIR-SS

Trapezoidal with side duct connection, recommended for closed ceilings and false ceilings.

| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B | C | D | E | F | G | H |
| | **PERFAIR-SS 1205** | 5 | 11 1/2 | 1 | 5 3/4 | 4 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1206** | 6 | 11 1/2 | 1 | 5 3/4 | 5 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1208** | 8 | 11 1/2 | 1 | 5 3/4 | 7 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 12 |
| | **PERFAIR-SS 1608** | 8 | 15 3/8 | 1 | 7 1/2 | 7 7/8 | 14 5/8 | 13 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2010** | 10 | 19 1/4 | 1 | 8 1/2 | 9 7/8 | 18 5/8 | 17 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2405** | 5 | 23 1/2 | 1 | 10 1/2 | 4 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2406** | 6 | 23 1/2 | 1 | 10 1/2 | 5 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2408** | 8 | 23 1/2 | 1 | 10 1/2 | 7 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2410** | 10 | 23 1/2 | 1 | 10 1/2 | 9 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2412** | 12 | 23 1/2 | 1 | 10 1/2 | 11 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |

All dimensions in inches

## Plenum (continued)



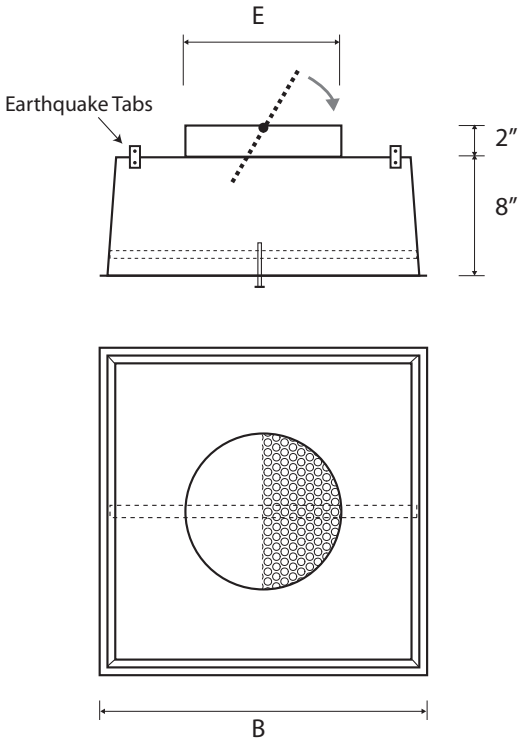

### PERFAIR-SSS

Rectangular with side connection, recommended for open ceilings with rigid duct entering from the side.

| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | D | E | F | G | H |
| | **PERFAIR-SSS 1205** | 5 | 11 1/2 | 4 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1206** | 6 | 11 1/2 | 5 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1208** | 8 | 11 1/2 | 7 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1608** | 8 | 15 3/8 | 7 7/8 | 14 5/8 | 16 5/8 | 15 5/8 | 12 |
| | **PERFAIR-SSS 2010** | 10 | 19 1/4 | 9 7/8 | 18 5/8 | 21 5/8 | 19 5/8 | 14 |
| | **PERFAIR-SSS 2405** | 5 | 23 1/2 | 4 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2406** | 6 | 23 1/2 | 5 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2408** | 8 | 23 1/2 | 7 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2410** | 10 | 23 1/2 | 9 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2412** | 12 | 23 1/2 | 11 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |

All dimensions in inches

## Plenum (continued)



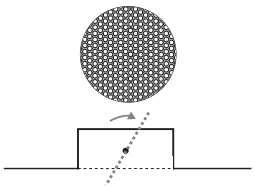

### PERFAIR-ST

Top duct connection, recommended for open ceilings with visible duct.

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E |
| | **PERFAIR-ST 1206** | 6 | 11 1/2 | 5 7/8 |
| | **PERFAIR-ST 1208** | 8 | 11 1/2 | 7 7/8 |
| | **PERFAIR-ST 2406** | 6 | 23 1/2 | 5 7/8 |
| | **PERFAIR-ST 2408** | 8 | 23 1/2 | 7 7/8 |
| | **PERFAIR-ST 2410** | 10 | 23 1/2 | 9 7/8 |
| | **PERFAIR-ST 2412** | 12 | 23 1/2 | 11 7/8 |

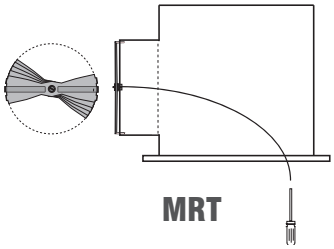
All dimensions in inches

## Air Volume Damper



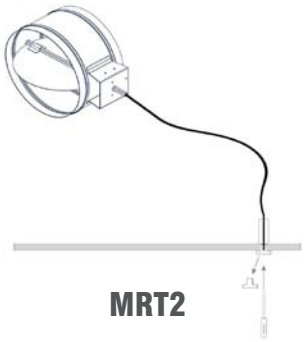
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2” Interior Accoustical Liner |
| | **AL1** | 1” Interior Accoustical Liner |
| | **R6** | 2” Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## OTO-C Series

### Curved Slots Architectural Round Swirl Diffuser



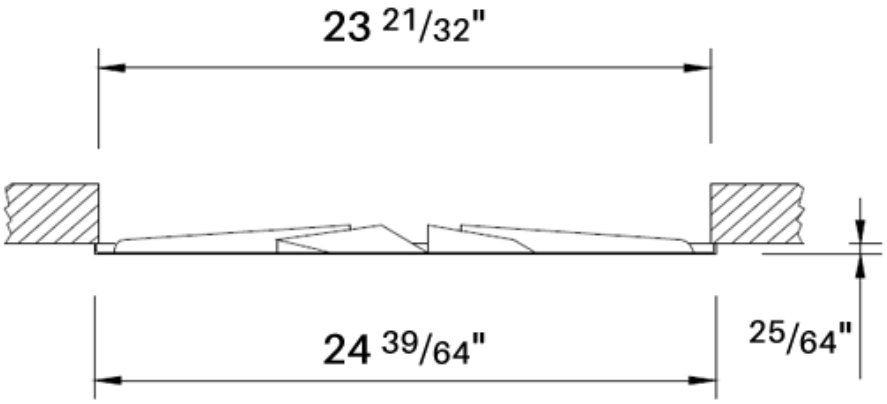
**OTO-C**
by MADEL®

**PATENTED**

**Material |** Powder coated stamped heavy gauge steel, galvanized steel plenum.

**Air Pattern |** Fixed horizontal swirl.

**Ceiling Types |** Open and Closed.

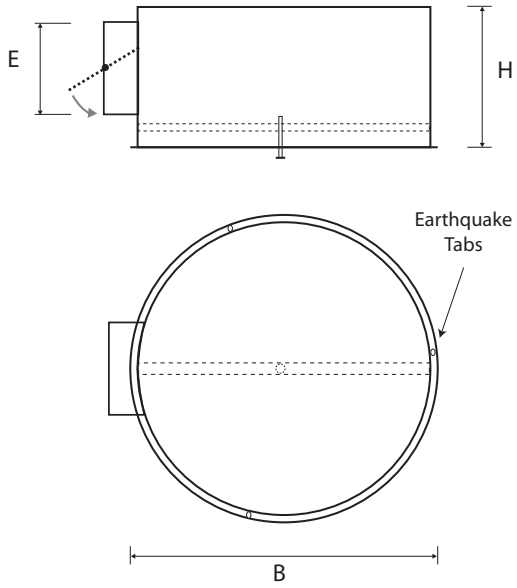



| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | OTO-C 25 | | OTO-C 625 |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

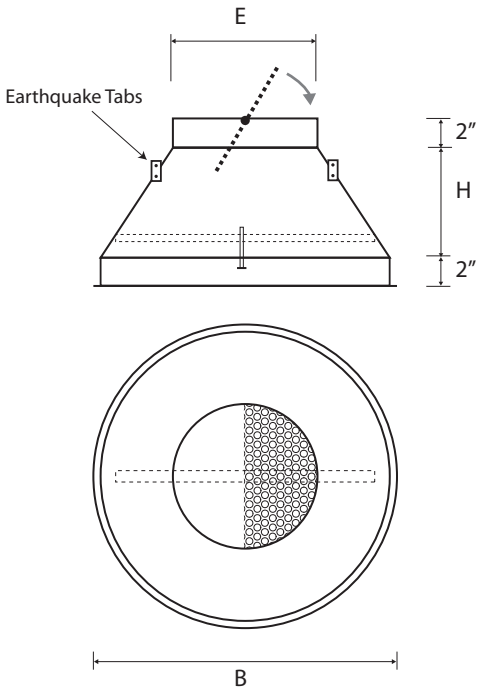
**Matching PERFAIR plenum ordered separately.**

## Plenum




### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.




### PERFAIR-CT

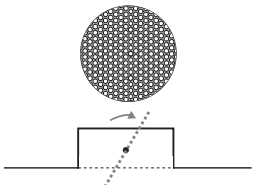
Conical with top duct connection, ideal for open ceilings with visible duct.

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | PERFAIR-CS 1205 | 5 | 11 3/8 | 4 7/8 | 9 |
| | PERFAIR-CS 1206 | 6 | 11 3/8 | 5 7/8 | 9 |
| | PERFAIR-CS 1208 | 8 | 11 3/8 | 7 7/8 | 9 |
| | PERFAIR-CS 1606 | 6 | 15 1/4 | 5 7/8 | 10 |
| | PERFAIR-CS 1608 | 8 | 15 1/4 | 7 7/8 | 10 |
| | PERFAIR-CS 2006 | 6 | 19 | 5 7/8 | 12 |
| | PERFAIR-CS 2008 | 8 | 19 | 7 7/8 | 12 |
| | PERFAIR-CS 2010 | 10 | 19 | 9 7/8 | 12 |
| | PERFAIR-CS 2506 | 6 | 24 | 5 7/8 | 13 |
| | PERFAIR-CS 2508 | 8 | 24 | 7 7/8 | 13 |
| | PERFAIR-CS 2510 | 10 | 24 | 9 7/8 | 13 |
| | PERFAIR-CS 2512 | 12 | 24 | 11 7/8 | 13 |
| | PERFAIR-CS 3312 | 12 | 33 | 11 7/8 | 16 |

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | PERFAIR-CT 1205 | 5 | 11 3/8 | 4 7/8 | 6 |
| | PERFAIR-CT 1206 | 6 | 11 3/8 | 5 7/8 | 6 |
| | PERFAIR-CT 1208 | 8 | 11 3/8 | 7 7/8 | 6 |
| | PERFAIR-CT 1606 | 6 | 15 1/4 | 5 7/8 | 6 |
| | PERFAIR-CT 1608 | 8 | 15 1/4 | 7 7/8 | 6 |
| | PERFAIR-CT 2006 | 6 | 19 | 5 7/8 | 8 |
| | PERFAIR-CT 2008 | 8 | 19 | 7 7/8 | 8 |
| | PERFAIR-CT 2010 | 10 | 19 | 9 7/8 | 8 |
| | PERFAIR-CT 2506 | 6 | 24 | 5 7/8 | 8 |
| | PERFAIR-CT 2508 | 8 | 24 | 7 7/8 | 8 |
| | PERFAIR-CT 2510 | 10 | 24 | 9 7/8 | 8 |
| | PERFAIR-CT 2512 | 12 | 24 | 11 7/8 | 8 |
| | PERFAIR-CT 3312 | 12 | 33 | 11 7/8 | 12 |

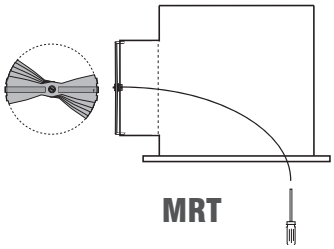
All dimensions in inches

## Air Volume Dampers



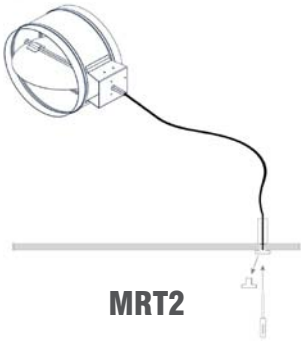
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## OTO-S Series

### Curved Slots Architectural Square Swirl Diffuser

**Materials |** Powder coated stamped heavy gauge steel, galvanized steel plenum.

**Air Pattern |** Fixed horizontal swirl.

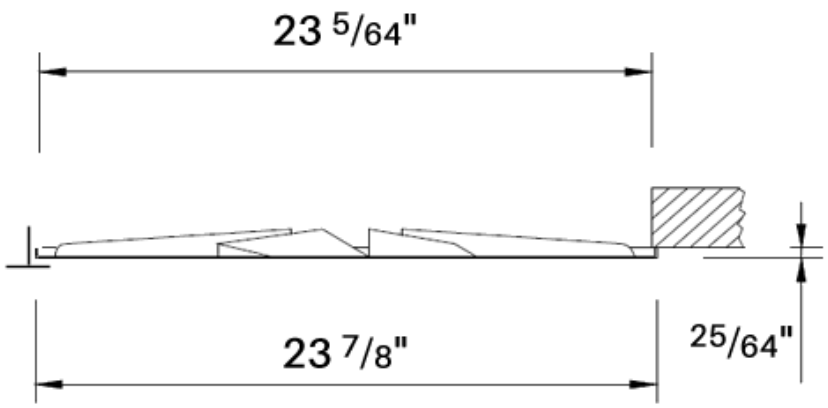
**Ceiling Types |** False, Open and Closed.



**OTO-S**

by MADEL®

**PATENTED**

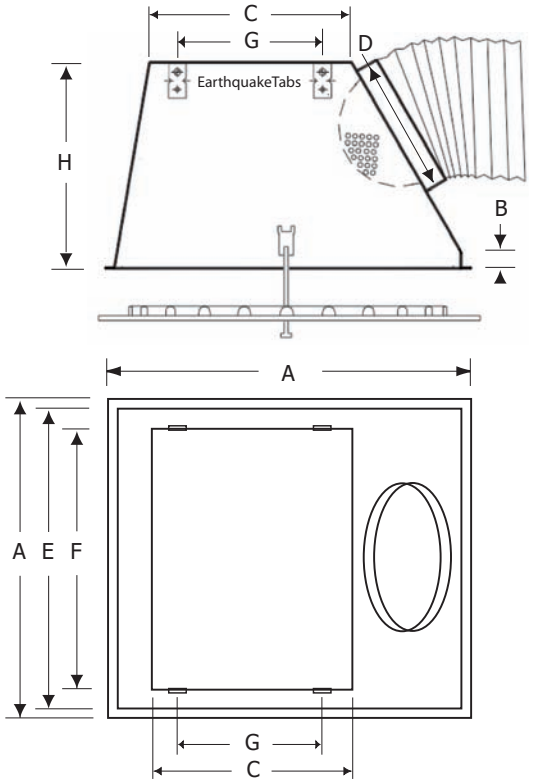



| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | OTO-S 24 | | OTO-S 610 |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

**Matching PERFAIR plenum ordered separately.**

## Plenum



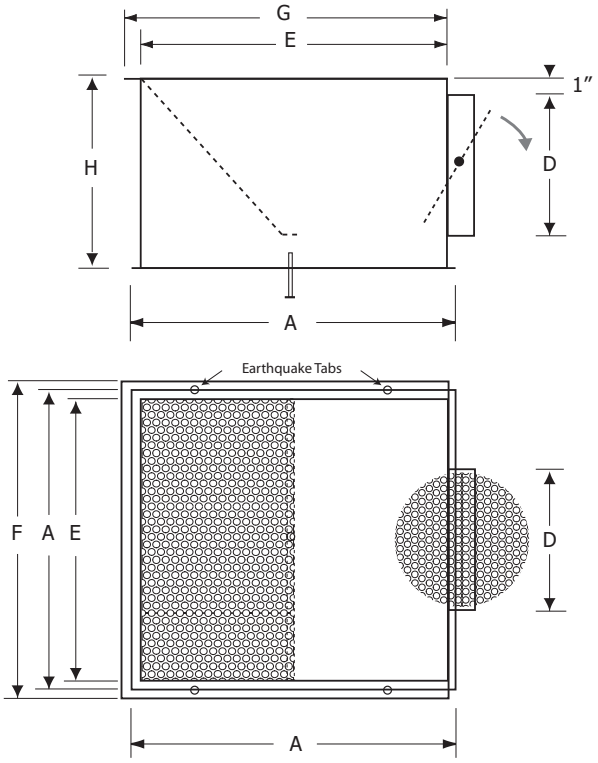

### PERFAIR-SS

Trapezoidal with side duct connection, recommended for closed ceilings and false ceilings.

| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B | C | D | E | F | G | H |
| | **PERFAIR-SS 1205** | 5 | 11 1/2 | 1 | 5 3/4 | 4 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1206** | 6 | 11 1/2 | 1 | 5 3/4 | 5 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1208** | 8 | 11 1/2 | 1 | 5 3/4 | 7 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 12 |
| | **PERFAIR-SS 1608** | 8 | 15 3/8 | 1 | 7 1/2 | 7 7/8 | 14 5/8 | 13 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2010** | 10 | 19 1/4 | 1 | 8 1/2 | 9 7/8 | 18 5/8 | 17 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2405** | 5 | 23 1/2 | 1 | 10 1/2 | 4 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2406** | 6 | 23 1/2 | 1 | 10 1/2 | 5 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2408** | 8 | 23 1/2 | 1 | 10 1/2 | 7 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2410** | 10 | 23 1/2 | 1 | 10 1/2 | 9 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2412** | 12 | 23 1/2 | 1 | 10 1/2 | 11 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |

All dimensions in inches

## Plenum (continued)




### PERFAIR-SSS

Rectangular with side connection, recommended for open ceilings with rigid duct entering from the side.

| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | D | E | F | G | H |
| | **PERFAIR-SSS 1205** | 5 | 11 1/2 | 4 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1206** | 6 | 11 1/2 | 5 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1208** | 8 | 11 1/2 | 7 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1608** | 8 | 15 3/8 | 7 7/8 | 14 5/8 | 16 5/8 | 15 5/8 | 12 |
| | **PERFAIR-SSS 2010** | 10 | 19 1/4 | 9 7/8 | 18 5/8 | 21 5/8 | 19 5/8 | 14 |
| | **PERFAIR-SSS 2405** | 5 | 23 1/2 | 4 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2406** | 6 | 23 1/2 | 5 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2408** | 8 | 23 1/2 | 7 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2410** | 10 | 23 1/2 | 9 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2412** | 12 | 23 1/2 | 11 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |

All dimensions in inches

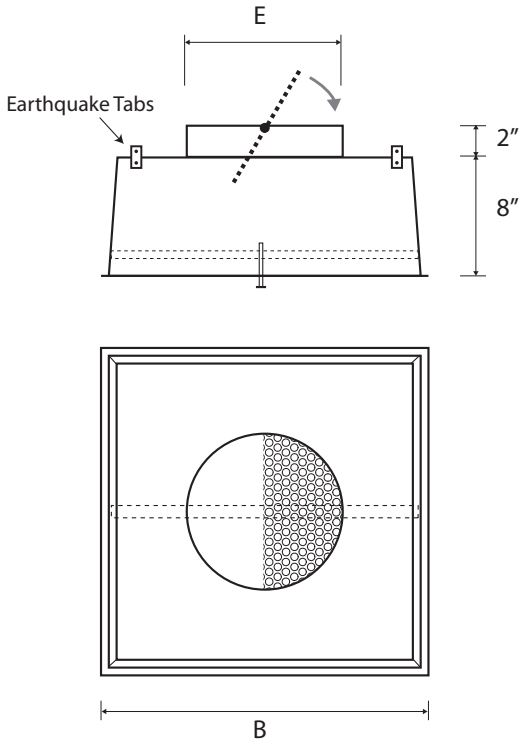
## Plenum (continued)

### PERFAIR-ST

Top duct connection, recommended for open ceilings with visible duct.

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E |
| | **PERFAIR-ST 1206** | 6 | 11 1/2 | 5 7/8 |
| | **PERFAIR-ST 1208** | 8 | 11 1/2 | 7 7/8 |
| | **PERFAIR-ST 2406** | 6 | 23 1/2 | 5 7/8 |
| | **PERFAIR-ST 2408** | 8 | 23 1/2 | 7 7/8 |
| | **PERFAIR-ST 2410** | 10 | 23 1/2 | 9 7/8 |
| | **PERFAIR-ST 2412** | 12 | 23 1/2 | 11 7/8 |

All dimensions in inches

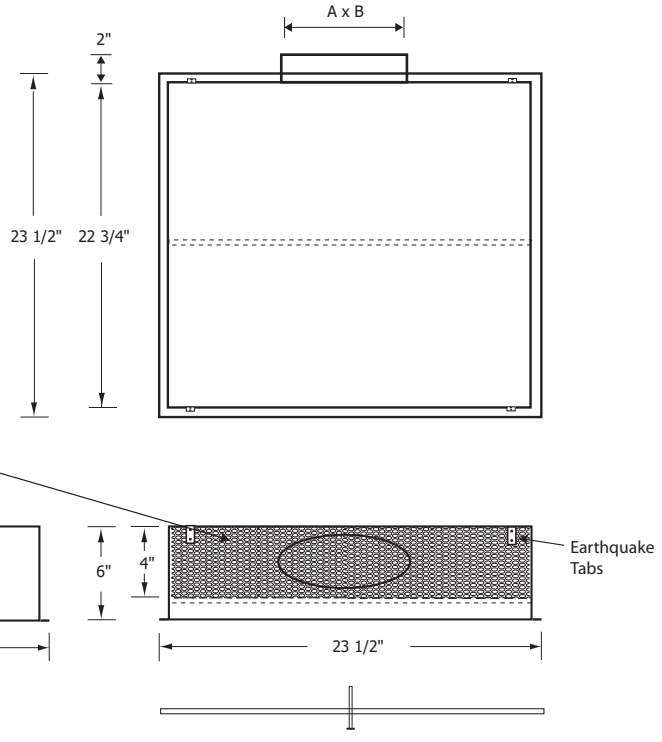



### PERFAIR-XS

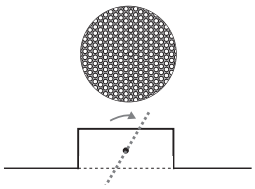
Compact plenum with side duct connection, recommended when height in the ceiling is between 6" and 14".

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B |
| | **PERFAIR-XS 2404** | 4 | 3 7/8 | 3 7/8 |
| | **PERFAIR-XS 2405** | 5 | 4 7/8 | 4 7/8 |
| | **PERFAIR-XS 2406** | 6 | 7 9/16 | 3 1/8 |
| | **PERFAIR-XS 2408** | 8 | 10 1/2 | 3 1/4 |

All dimensions in inches

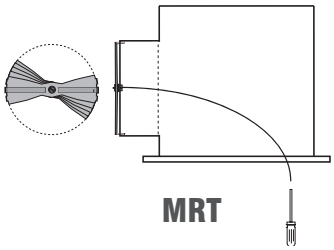


## Air Volume Damper



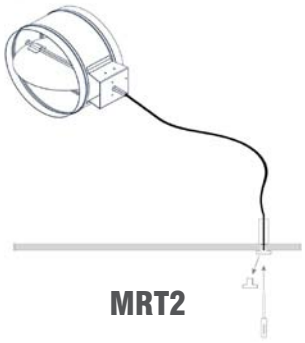
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| | Insulation | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| | Neck-Installed Air Volume Damper | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| | Cable Length (MRT2 or EB2) |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## PLAY-C Series

### Adjustable Sectors Round Diffusers

**Material |** Powder coated stamped heavy gauge steel, gavanized steel plenum.

**Air Pattern |** 100% horizontally adjustable.

**Ceiling Types |** Open and Closed.

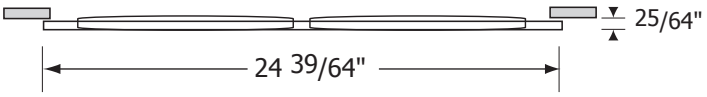


**PLAY-C**
**by MADEL®**

**PATENTED**

| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | PLAY-C 25 | | PLAY-C 625 |

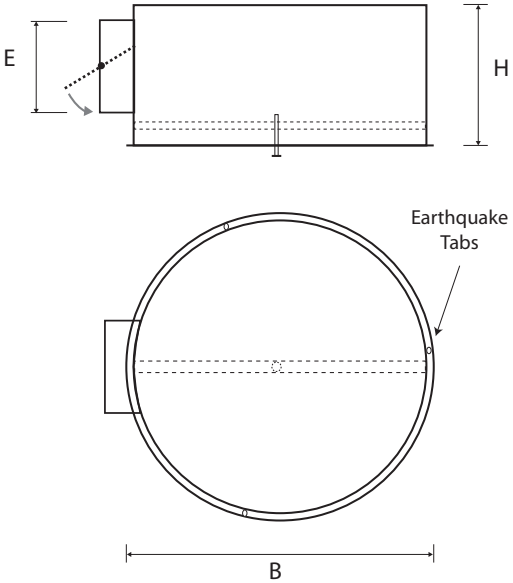
| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |




## Plenum

### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.



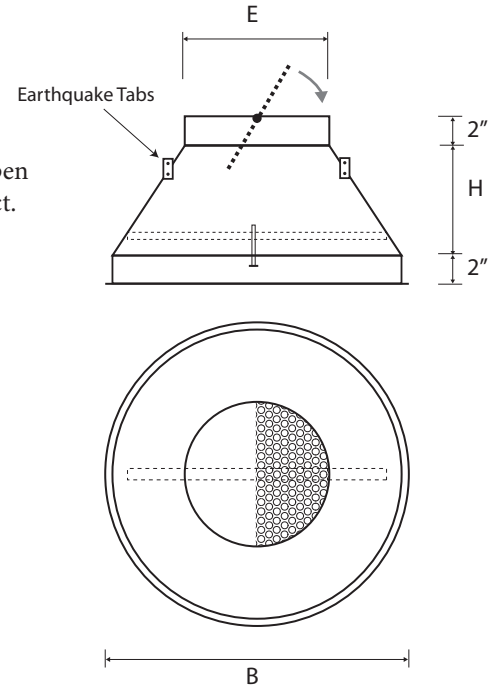

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | **Model** | **Duct Size** | **B** | **E** | **H** |
| | **PERFAIR-CS 1205** | 5 | 11 3/8 | 4 7/8 | 9 |
| | **PERFAIR-CS 1206** | 6 | 11 3/8 | 5 7/8 | 9 |
| | **PERFAIR-CS 1208** | 8 | 11 3/8 | 7 7/8 | 9 |
| | **PERFAIR-CS 1606** | 6 | 15 1/4 | 5 7/8 | 10 |
| | **PERFAIR-CS 1608** | 8 | 15 1/4 | 7 7/8 | 10 |
| | **PERFAIR-CS 2006** | 6 | 19 | 5 7/8 | 12 |
| | **PERFAIR-CS 2008** | 8 | 19 | 7 7/8 | 12 |
| | **PERFAIR-CS 2010** | 10 | 19 | 9 7/8 | 12 |
| | **PERFAIR-CS 2506** | 6 | 24 | 5 7/8 | 13 |
| | **PERFAIR-CS 2508** | 8 | 24 | 7 7/8 | 13 |
| | **PERFAIR-CS 2510** | 10 | 24 | 9 7/8 | 13 |
| | **PERFAIR-CS 2512** | 12 | 24 | 11 7/8 | 13 |
| | **PERFAIR-CS 3312** | 12 | 33 | 11 7/8 | 16 |

All dimensions in inches

## Plenum (continued)

### PERFAIR-CT

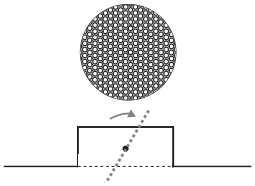
Conical with top duct connection, ideal for open ceilings with visible duct.




| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 1205** | 5 | 11 3/8 | 4 7/8 | 6 |
| | **PERFAIR-CT 1206** | 6 | 11 3/8 | 5 7/8 | 6 |
| | **PERFAIR-CT 1208** | 8 | 11 3/8 | 7 7/8 | 6 |
| | **PERFAIR-CT 1606** | 6 | 15 1/4 | 5 7/8 | 6 |
| | **PERFAIR-CT 1608** | 8 | 15 1/4 | 7 7/8 | 6 |
| | **PERFAIR-CT 2006** | 6 | 19 | 5 7/8 | 8 |
| | **PERFAIR-CT 2008** | 8 | 19 | 7 7/8 | 8 |
| | **PERFAIR-CT 2010** | 10 | 19 | 9 7/8 | 8 |
| | **PERFAIR-CT 2506** | 6 | 24 | 5 7/8 | 8 |
| | **PERFAIR-CT 2508** | 8 | 24 | 7 7/8 | 8 |
| | **PERFAIR-CT 2510** | 10 | 24 | 9 7/8 | 8 |
| | **PERFAIR-CT 2512** | 12 | 24 | 11 7/8 | 8 |
| | **PERFAIR-CT 3312** | 12 | 33 | 11 7/8 | 12 |

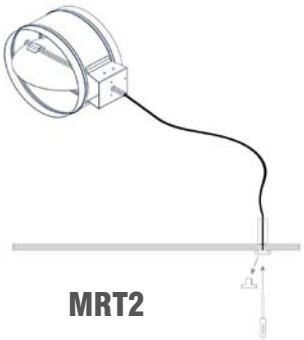
All dimensions in inches

## Air Volume Damper



**R**

Perforated damper + air equalizer



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2″ Interior Accoustical Liner |
| | **AL1** | 1″ Interior Accoustical Liner |
| | **R6** | 2″ Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT2** | Manually operated |
| | **EB2** | Electro-balanced, battery powered |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## PLAY-R Series
### Adjustable Sectors Rectangular Diffusers

**PATENTED**

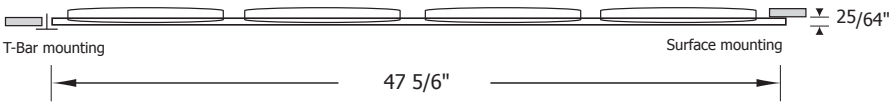


**PLAY-R**
by MADEL®

**Material |** Powder coated stamped heavy gauge steel, galvanized steel plenum.

**Air Pattern |** 100% horizontally adjustable.

**Ceiling Types |** False, Open and Closed.



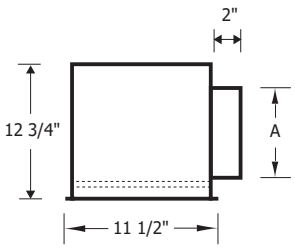

| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | PLAY-R 48 12 | | PLAY-R 1215 300 |

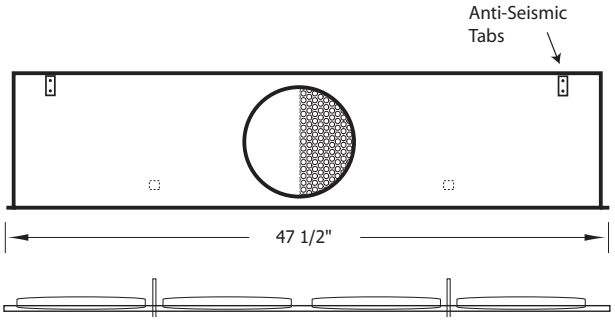
| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

## Plenum

### PERFAIR-RS

Side duct connection.



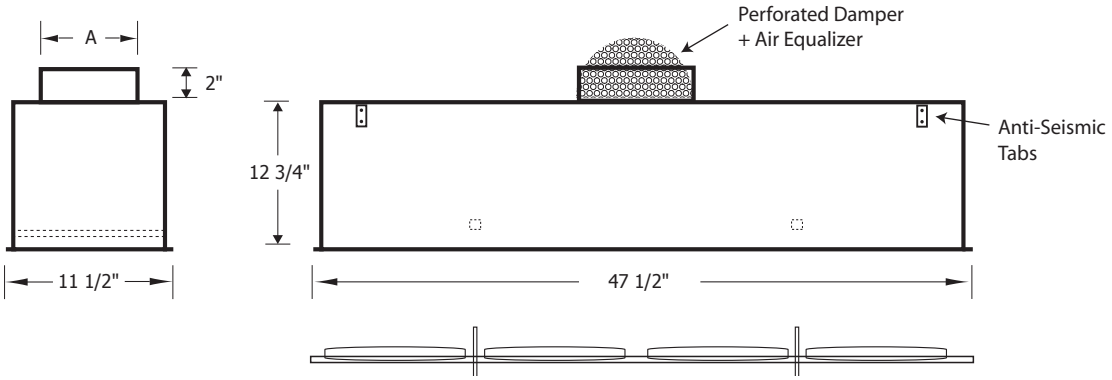

| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **Duct Size** | **A** |
| | **PERFAIR-RS 4812 06** | 6 | 5 7/8 |
| | **PERFAIR-RS 4812 08** | 8 | 7 7/8 |
| | **PERFAIR-RS 4812 10** | 10 | 9 7/8 |
| | **PERFAIR-RS 4812 12** | 12 | 11 7/8 |

All dimensions in inches

## Plenum (continued)

### PERFAIR-RT

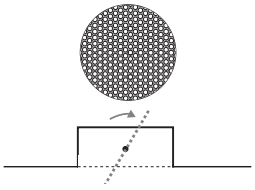
Top duct connection.




| Select Model | | | |
|---|---|---|---|
| ✓ | Model | Duct Size | A |
| | **PERFAIR-RT 4812 06** | 6 | 5 7/8 |
| | **PERFAIR-RT 4812 08** | 8 | 7 7/8 |
| | **PERFAIR-RT 4812 10** | 10 | 9 7/8 |

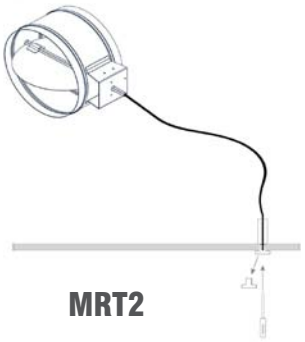
All dimensions in inches

## Air Volume Damper



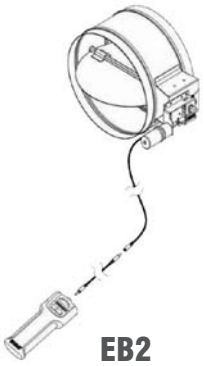
**R**

Perforated damper + air equalizer



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT2** | Manually operated |
| | **EB2** | Electro-balanced, battery powered |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

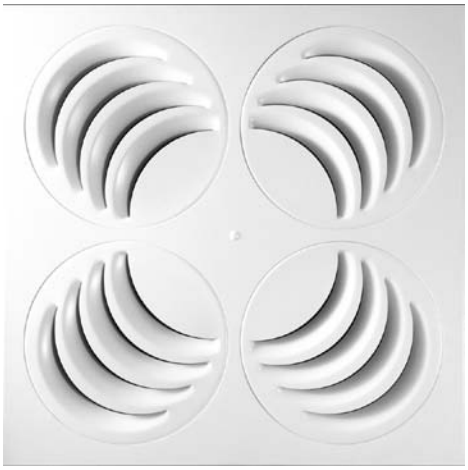
**Contractor:**

## PLAY-S Series
### Adjustable Sectors Square Diffuser

**Material |** Powder coated stamped heavy gauge steel, galvanized steel plenum.

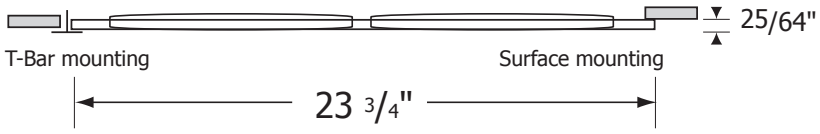
**Air Pattern |** 100% horizontally adjustable.

**Ceiling Types |** False, Open and Closed.



**PLAY-S**
by MADEL®

**PATENTED**



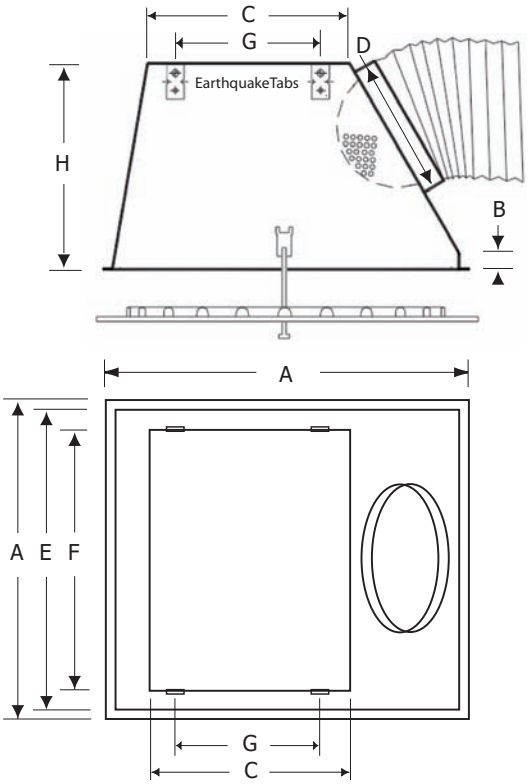

| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | PLAY-S 24 | | PLAY-S 610 |

| Configuration | |
|---|---|
| | Swirl (factory default) |
| | 4 Way |
| | 3 Way |
| | 2 Way Corner |
| | 2 Way Opposite |
| | 1 Way |
| | Downward |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

**Matching PERFAIR plenum ordered separately**

## Plenum



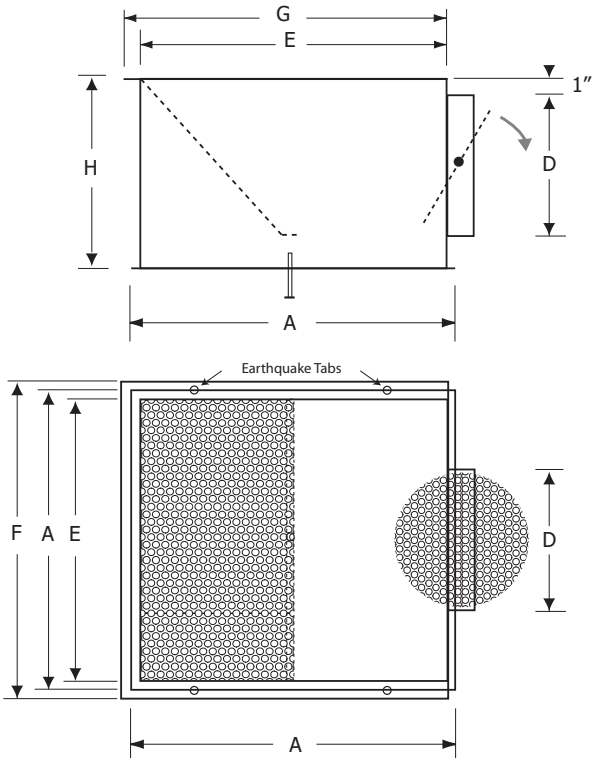

### PERFAIR-SS

Trapezoidal with side duct connection, recommended for closed ceilings and false ceilings.

| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B | C | D | E | F | G | H |
| | **PERFAIR-SS 1205** | 5 | 11 1/2 | 1 | 5 3/4 | 4 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1206** | 6 | 11 1/2 | 1 | 5 3/4 | 5 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1208** | 8 | 11 1/2 | 1 | 5 3/4 | 7 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 12 |
| | **PERFAIR-SS 1608** | 8 | 15 3/8 | 1 | 7 1/2 | 7 7/8 | 14 5/8 | 13 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2010** | 10 | 19 1/4 | 1 | 8 1/2 | 9 7/8 | 18 5/8 | 17 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2405** | 5 | 23 1/2 | 1 | 10 1/2 | 4 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2406** | 6 | 23 1/2 | 1 | 10 1/2 | 5 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2408** | 8 | 23 1/2 | 1 | 10 1/2 | 7 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2410** | 10 | 23 1/2 | 1 | 10 1/2 | 9 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2412** | 12 | 23 1/2 | 1 | 10 1/2 | 11 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |

All dimensions in inches

## Plenum (continued)



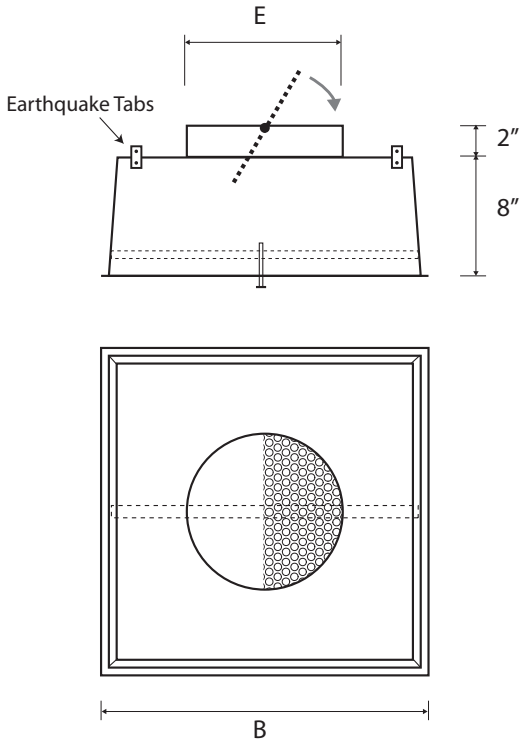

### PERFAIR-SSS

Rectangular with side connection, recommended for open ceilings with rigid duct entering from the side.

| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | D | E | F | G | H |
| | **PERFAIR-SSS 1205** | 5 | 11 1/2 | 4 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1206** | 6 | 11 1/2 | 5 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1208** | 8 | 11 1/2 | 7 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1608** | 8 | 15 3/8 | 7 7/8 | 14 5/8 | 16 5/8 | 15 5/8 | 12 |
| | **PERFAIR-SSS 2010** | 10 | 19 1/4 | 9 7/8 | 18 5/8 | 21 5/8 | 19 5/8 | 14 |
| | **PERFAIR-SSS 2405** | 5 | 23 1/2 | 4 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2406** | 6 | 23 1/2 | 5 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2408** | 8 | 23 1/2 | 7 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2410** | 10 | 23 1/2 | 9 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2412** | 12 | 23 1/2 | 11 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |

All dimensions in inches

## Plenum (continued)




### PERFAIR-ST

Top duct connection, recommended for open ceilings with visible duct.

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E |
| | **PERFAIR-ST 1206** | 6 | 11 1/2 | 5 7/8 |
| | **PERFAIR-ST 1208** | 8 | 11 1/2 | 7 7/8 |
| | **PERFAIR-ST 2406** | 6 | 23 1/2 | 5 7/8 |
| | **PERFAIR-ST 2408** | 8 | 23 1/2 | 7 7/8 |
| | **PERFAIR-ST 2410** | 10 | 23 1/2 | 9 7/8 |
| | **PERFAIR-ST 2412** | 12 | 23 1/2 | 11 7/8 |

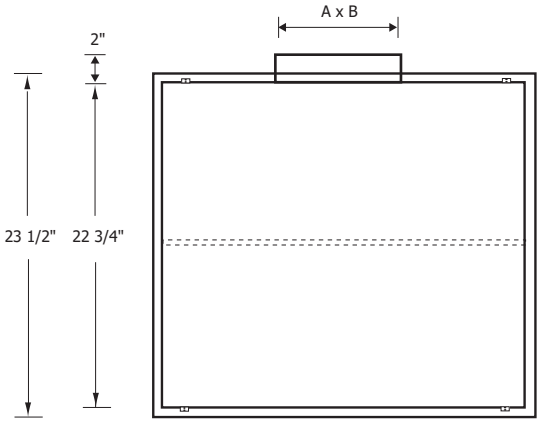
All dimensions in inches

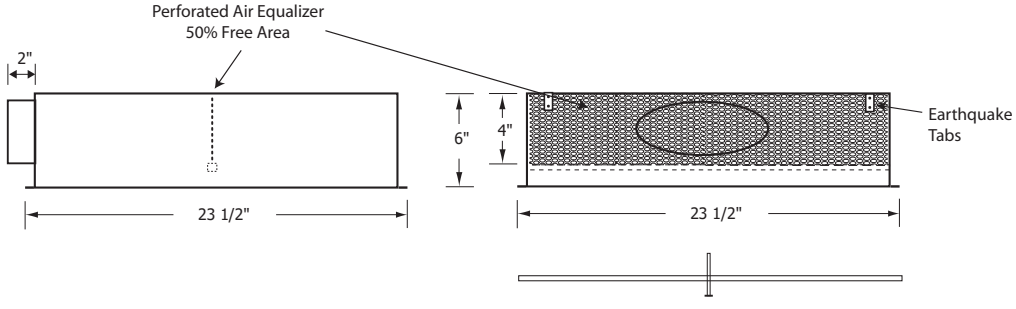
### PERFAIR-XS

Compact plenum with side duct connection, recommended when height in the ceiling is between 6” and 14”.

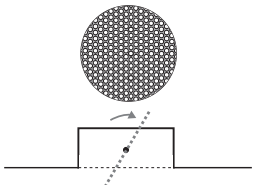
| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B |
| | **PERFAIR-XS 2404** | 4 | 3 7/8 | 3 7/8 |
| | **PERFAIR-XS 2405** | 5 | 4 7/8 | 4 7/8 |
| | **PERFAIR-XS 2406** | 6 | 7 9/16 | 3 1/8 |
| | **PERFAIR-XS 2408** | 8 | 10 1/2 | 3 1/4 |

All dimensions in inches



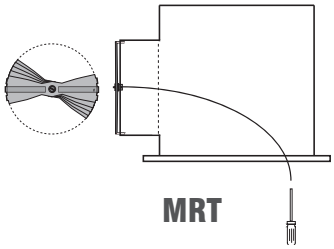



## Air Volume Damper



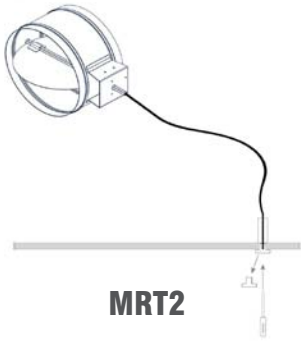
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2″ Interior Accoustical Liner |
| | **AL1** | 1″ Interior Accoustical Liner |
| | **R6** | 2″ Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

# RXO-C Series

## Round Stamped Steel Swirl Diffuser

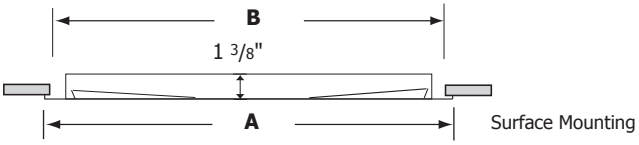
**Material |** Powder coated stamped heavy gauge steel, galvanized steel plenum

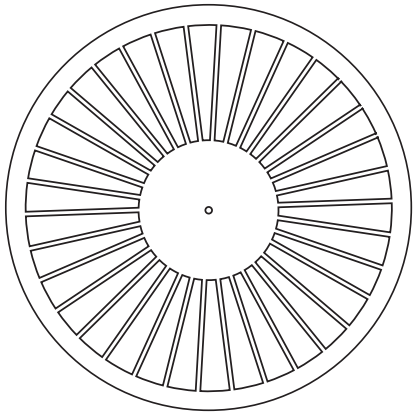
**Air Pattern |** Fix swirl pattern

**Ceiling Types |** Surface or Visible Duct



RXO-C



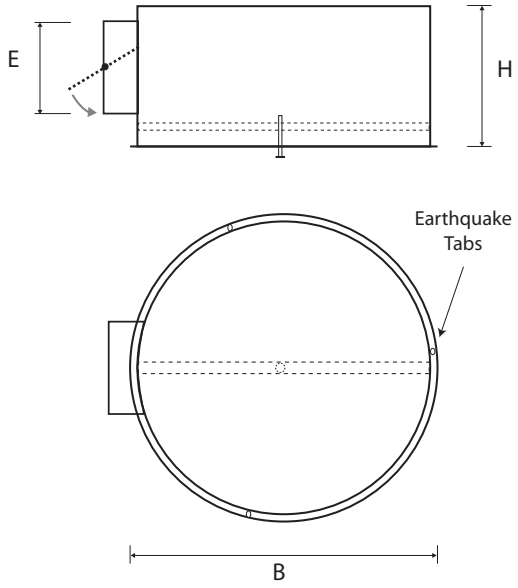



| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **A** | **B** |
| | RXO-C 16 | 15 3/4″ | 14 9/16″ |
| | RXO-C 20 | 19 31/64″ | 18 1/2″ |
| | RXO-C 25 | 24 13/32″ | 22 23/64″ |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

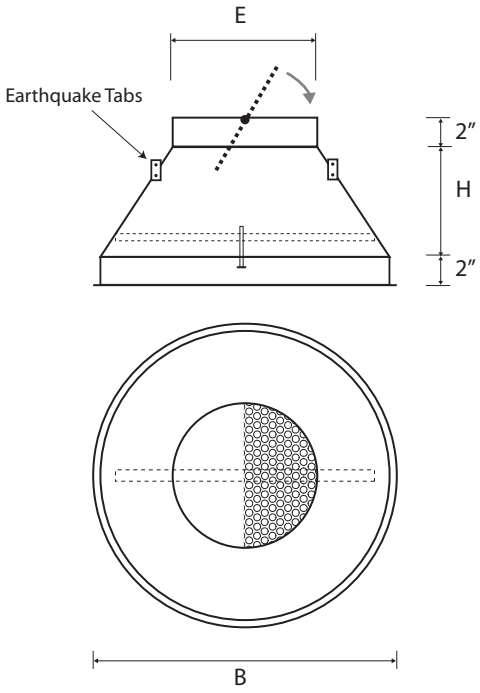
**Matching PERFAIR plenum ordered separately**

## Plenum




### PERFAIR-CS

Cylindrical with side duct connection, ideal for closed ceilings.




### PERFAIR-CT

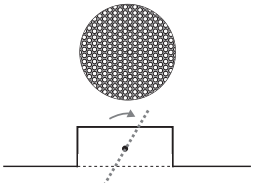
Conical with top duct connection, ideal for open ceilings with visible duct.

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 1205** | 5 | 11 3/8 | 4 7/8 | 9 |
| | **PERFAIR-CS 1206** | 6 | 11 3/8 | 5 7/8 | 9 |
| | **PERFAIR-CS 1208** | 8 | 11 3/8 | 7 7/8 | 9 |
| | **PERFAIR-CS 1606** | 6 | 15 1/4 | 5 7/8 | 10 |
| | **PERFAIR-CS 1608** | 8 | 15 1/4 | 7 7/8 | 10 |
| | **PERFAIR-CS 2006** | 6 | 19 | 5 7/8 | 12 |
| | **PERFAIR-CS 2008** | 8 | 19 | 7 7/8 | 12 |
| | **PERFAIR-CS 2010** | 10 | 19 | 9 7/8 | 12 |
| | **PERFAIR-CS 2506** | 6 | 24 | 5 7/8 | 13 |
| | **PERFAIR-CS 2508** | 8 | 24 | 7 7/8 | 13 |
| | **PERFAIR-CS 2510** | 10 | 24 | 9 7/8 | 13 |
| | **PERFAIR-CS 2512** | 12 | 24 | 11 7/8 | 13 |
| | **PERFAIR-CS 3312** | 12 | 33 | 11 7/8 | 16 |

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 1205** | 5 | 11 3/8 | 4 7/8 | 6 |
| | **PERFAIR-CT 1206** | 6 | 11 3/8 | 5 7/8 | 6 |
| | **PERFAIR-CT 1208** | 8 | 11 3/8 | 7 7/8 | 6 |
| | **PERFAIR-CT 1606** | 6 | 15 1/4 | 5 7/8 | 6 |
| | **PERFAIR-CT 1608** | 8 | 15 1/4 | 7 7/8 | 6 |
| | **PERFAIR-CT 2006** | 6 | 19 | 5 7/8 | 8 |
| | **PERFAIR-CT 2008** | 8 | 19 | 7 7/8 | 8 |
| | **PERFAIR-CT 2010** | 10 | 19 | 9 7/8 | 8 |
| | **PERFAIR-CT 2506** | 6 | 24 | 5 7/8 | 8 |
| | **PERFAIR-CT 2508** | 8 | 24 | 7 7/8 | 8 |
| | **PERFAIR-CT 2510** | 10 | 24 | 9 7/8 | 8 |
| | **PERFAIR-CT 2512** | 12 | 24 | 11 7/8 | 8 |
| | **PERFAIR-CT 3312** | 12 | 33 | 11 7/8 | 12 |

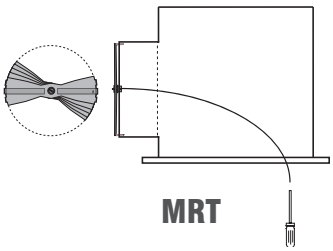
All dimensions in inches

## Air Volume Dampers



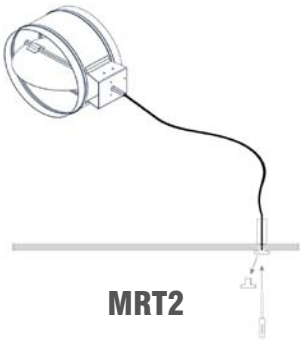
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## RXO-C (METRIC)

REV 1

## RXO-C Series
### Round Stamped Steel Swirl Diffuser

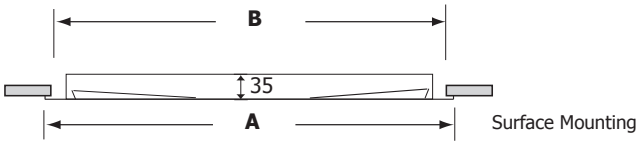


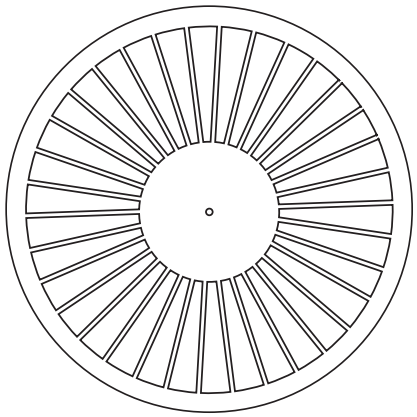
**RXO-C**

**Material |** Powder coated stamped heavy gauge steel

**Air Pattern |** Fix swirl pattern

**Ceiling Types |** Surface or Visible Duct



| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **A** | **B** |
| | RXO-C 400 | 400 mm | 370 mm |
| | RXO-C 500 | 500 mm | 470 mm |
| | RXO-C 625 | 625 mm | 568 mm |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

**Important! PERFAIR plenums required**

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

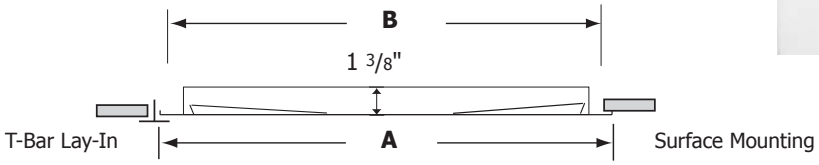
# RXO-S Series

## Square Stamped Steel Swirl Diffuser

**Material |** Powder coated stamped heavy gauge steel, galvanized steel plenum.

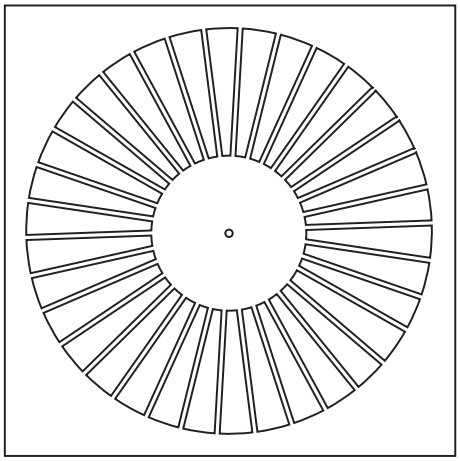
**Air Pattern |** Fix horizontal swirl pattern

**Ceiling Types |** All






RXO-S

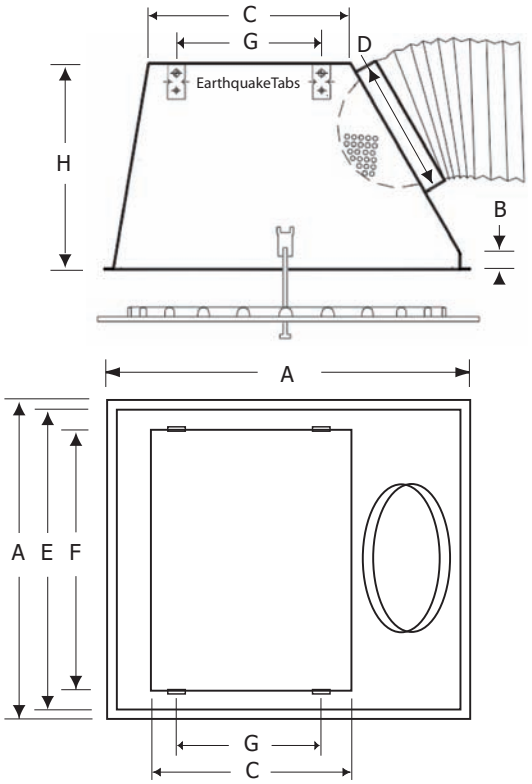


| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **A** | **B** |
| | RXO-S 16 | 15 35/64″ | 14 9/16″ |
| | RXO-S 20 | 19 31/64″ | 18 1/2″ |
| | RXO-S 24 | 23 3/4″ | 22 23/64″ |
| | RXO-S400 24 | 23 3/4″ | 22 23/64″ |
| | RXO-S500 24 | 23 3/4″ | 22 23/64″ |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

**Matching PERFAIR plenum ordered separately**

## Plenum



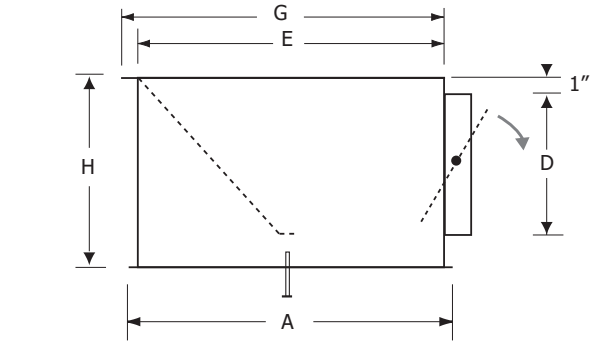

### PERFAIR-SS

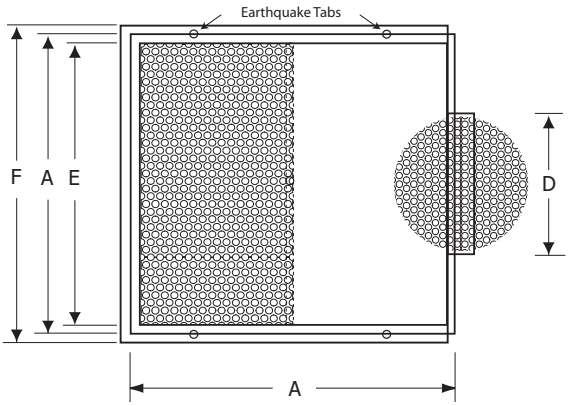
Trapezoidal with side duct connection, recommended for closed ceilings and false ceilings.

| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B | C | D | E | F | G | H |
| | **PERFAIR-SS 1205** | 5 | 11 1/2 | 1 | 5 3/4 | 4 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1206** | 6 | 11 1/2 | 1 | 5 3/4 | 5 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1208** | 8 | 11 1/2 | 1 | 5 3/4 | 7 7/8 | 10 3/4 | 10 1/2 | 6 5/8 | 12 |
| | **PERFAIR-SS 1608** | 8 | 15 3/8 | 1 | 7 1/2 | 7 7/8 | 14 5/8 | 13 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2010** | 10 | 19 1/4 | 1 | 8 1/2 | 9 7/8 | 18 5/8 | 17 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2405** | 5 | 23 1/2 | 1 | 10 1/2 | 4 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2406** | 6 | 23 1/2 | 1 | 10 1/2 | 5 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2408** | 8 | 23 1/2 | 1 | 10 1/2 | 7 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2410** | 10 | 23 1/2 | 1 | 10 1/2 | 9 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2412** | 12 | 23 1/2 | 1 | 10 1/2 | 11 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |

All dimensions in inches

## Plenum (continued)




### PERFAIR-SSS

Rectangular with side connection, recommended for open ceilings with rigid duct entering from the side.

| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | D | E | F | G | H |
| | **PERFAIR-SSS 1205** | 5 | 11 1/2 | 4 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1206** | 6 | 11 1/2 | 5 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1208** | 8 | 11 1/2 | 7 7/8 | 10 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1608** | 8 | 15 3/8 | 7 7/8 | 14 5/8 | 16 5/8 | 15 5/8 | 12 |
| | **PERFAIR-SSS 2010** | 10 | 19 1/4 | 9 7/8 | 18 5/8 | 21 5/8 | 19 5/8 | 14 |
| | **PERFAIR-SSS 2405** | 5 | 23 1/2 | 4 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2406** | 6 | 23 1/2 | 5 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2408** | 8 | 23 1/2 | 7 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2410** | 10 | 23 1/2 | 9 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2412** | 12 | 23 1/2 | 11 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |

All dimensions in inches

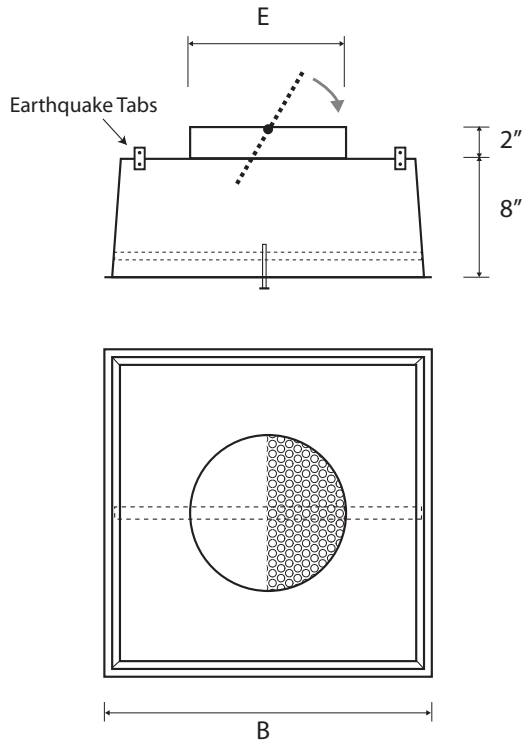
## Plenum (continued)

### PERFAIR-ST

Top duct connection, recommended for open ceilings with visible duct.

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E |
| | **PERFAIR-ST 1206** | 6 | 11 1/2 | 5 7/8 |
| | **PERFAIR-ST 1208** | 8 | 11 1/2 | 7 7/8 |
| | **PERFAIR-ST 2406** | 6 | 23 1/2 | 5 7/8 |
| | **PERFAIR-ST 2408** | 8 | 23 1/2 | 7 7/8 |
| | **PERFAIR-ST 2410** | 10 | 23 1/2 | 9 7/8 |
| | **PERFAIR-ST 2412** | 12 | 23 1/2 | 11 7/8 |

All dimensions in inches

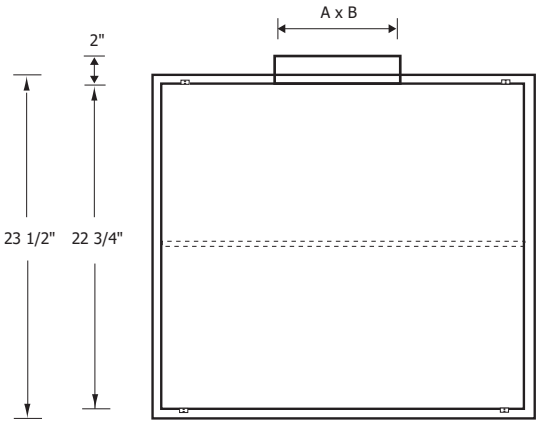


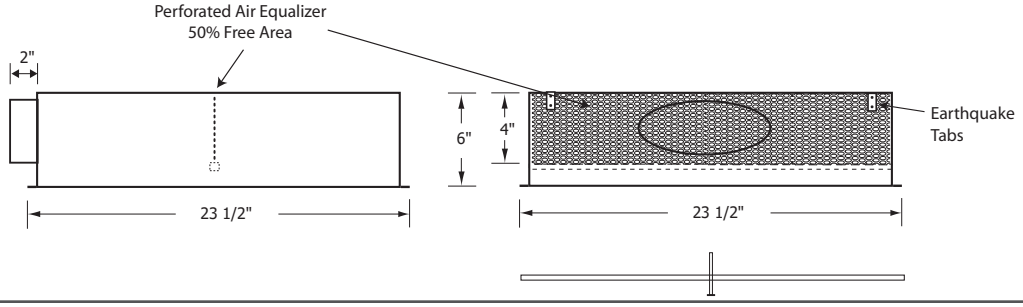

### PERFAIR-XS

Compact plenum with side duct connection, recommended when height in the ceiling is between 6" and 14".

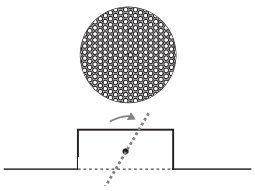
| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B |
| | **PERFAIR-XS 2404** | 4 | 3 7/8 | 3 7/8 |
| | **PERFAIR-XS 2405** | 5 | 4 7/8 | 4 7/8 |
| | **PERFAIR-XS 2406** | 6 | 7 9/16 | 3 1/8 |
| | **PERFAIR-XS 2408** | 8 | 10 1/2 | 3 1/4 |

All dimensions in inches



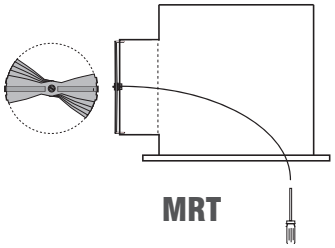



## Air Volume Damper



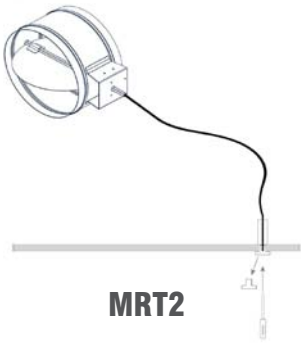
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## RXO-S (METRIC)

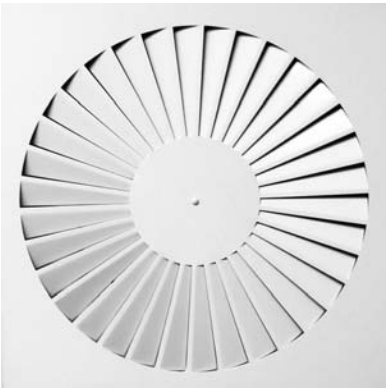
REV 2

## RXO-S Series
### Square Stamped Steel Swirl Diffuser

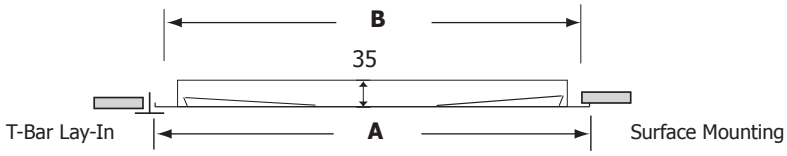
**Material |** Powder coated stamped heavy gauge steel

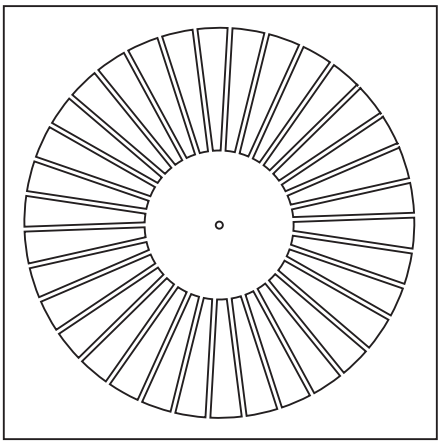
**Air Pattern |** Fix swirl pattern

**Ceiling Types |** All



RXO-S



| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **A** | **B** |
| | RXO-S 400 | 395 mm | 370 mm |
| | RXO-S 500 | 495 mm | 470 mm |
| | RXO-S 605 | 600 mm | 568 mm |
| | RXO-S400 605 | 600 mm | 568 mm |
| | RXO-S500 605 | 600 mm | 568 mm |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

**Important! PERFAIR plenums required**

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

## RXO-S-ALU Series
### Square Stamped Aluminum Swirl Diffuser

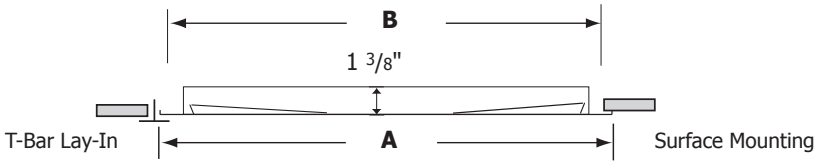
**Material |** Powder coated stamped heavy gauge aluminum

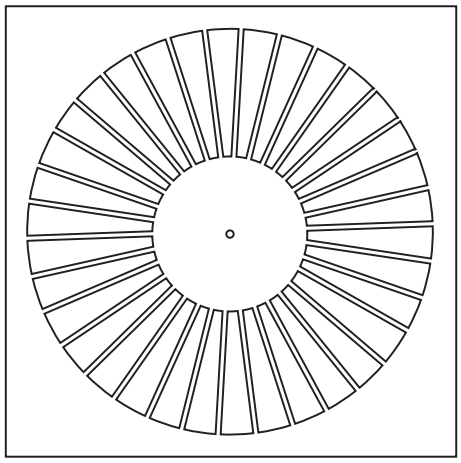
**Air Pattern |** Fix swirl pattern

**Ceiling Types |** All



**RXO-S-ALU**



| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **A** | **B** |
| | RXO-S-ALU 24 | 23 3/4" | 22 23/64" |

| Select Finish | |
|---|---|
| | Powder Coated White RAL 9016 |
| | Other RAL: |

**Important! PERFAIR plenums required**

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

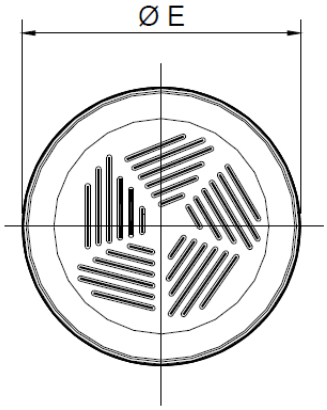
## TAU Series
### Aluminum Floor Diffuser

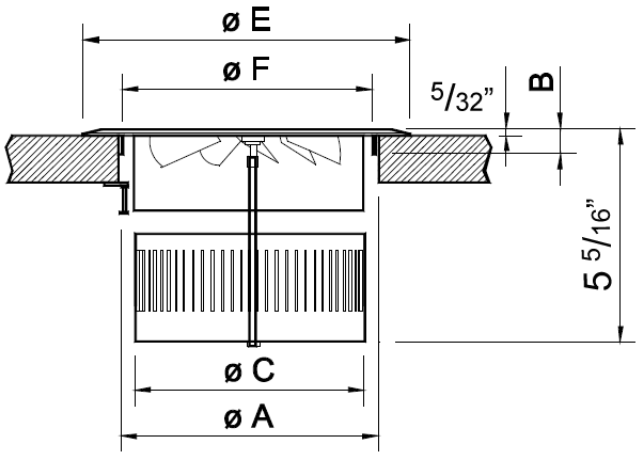


TAU

**Material |** Aluminum

**Air Pattern |** Adjustable pattern




| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | **Model** | **A** | **E** | **F** | **C** | **B** |
| | TAU 06 | 5 29/32″ | 7 31/64" | 5 33/64" | 5 13/64" | 3/4" |
| | TAU 08 | 7 7/8″ | 9 29/64" | 7 31/64" | 7 11/64" | 3/4" |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## TAU (METRIC)

REV 0

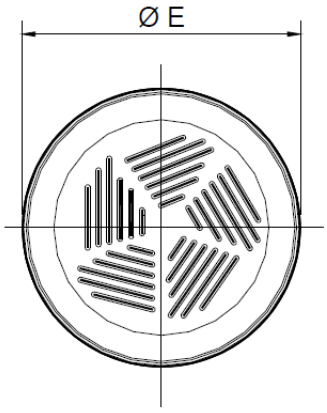
## TAU Series
### Aluminum Floor Diffuser

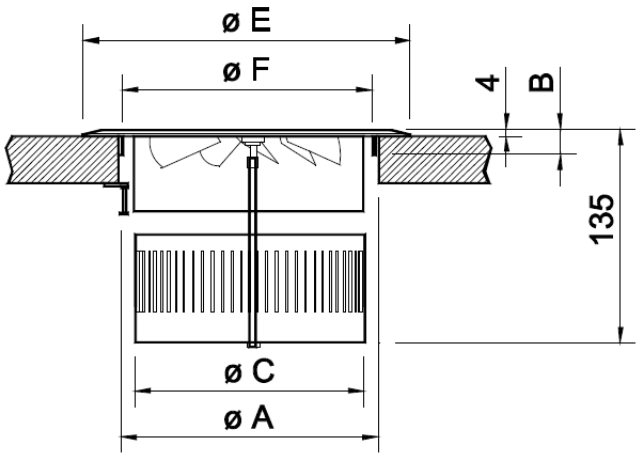
**Material |** Aluminum

**Air Pattern |** Adjustable pattern



TAU




| Select Model | | | | | | |
|---|---|---|---|---|---|---|
| ✓ | **Model** | **A** | **E** | **F** | **C** | **B** |
| | TAU 150 | 150 mm | 190 mm | 140 mm | 132 mm | 19 mm |
| | TAU 200 | 200 mm | 240 mm | 190 mm | 182 mm | 19 mm |

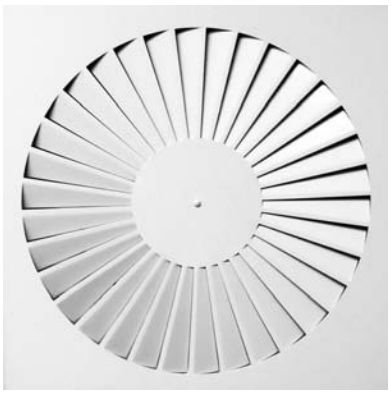
**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## TWIST Series
### Stamped Steel Swirl Diffuser With Integral Plenum

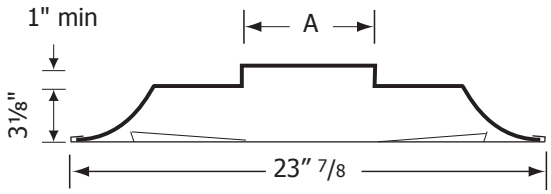


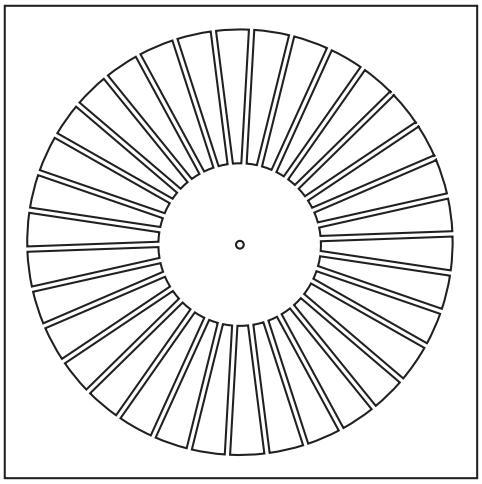
**TWIST**

**Material |** Powder coated stamped heavy gauge steel

**Air Pattern |** Fix horizontal swirl pattern

**Ceiling Types |** False



| Select Model | | |
|---|---|---|
| ✓ | **Model** | **A** |
| | TWIST 2406 | 5" 7/8 |
| | TWIST 2408 | 7" 7/8 |
| | TWIST 2410 | 9" 7/8 |
| | TWIST 2412 | 11" 7/8 |

| Select Options | |
|---|---|
| | R6 Thermal Insulation |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

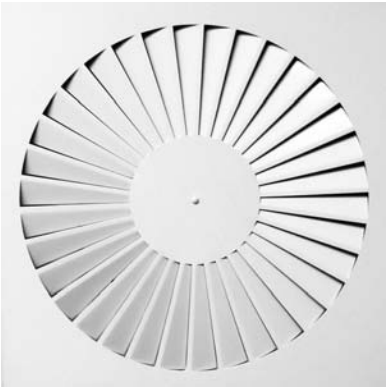
## TWIST-ALU Series

### Stamped Aluminum Swirl Diffuser With Integral Plenum

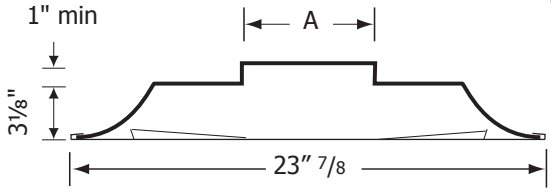
**Material |** Powder coated stamped heavy gauge aluminum

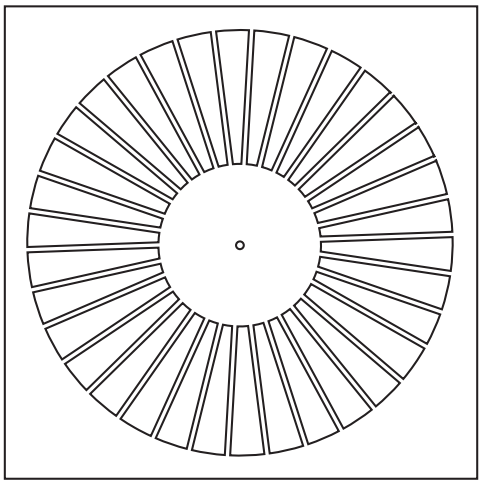
**Air Pattern |** Fix horizontal swirl pattern

**Ceiling Types |** False



TWIST-ALU



| Select Model | | |
|---|---|---|
| ✓ | **Model** | **A** |
| | TWIST-ALU 2406 | 5" 7/8 |
| | TWIST-ALU 2408 | 7" 7/8 |
| | TWIST-ALU 2410 | 9" 7/8 |
| | TWIST-ALU 2412 | 11" 7/8 |

| Select Options | |
|---|---|
| | R6 Thermal Insulation |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## TWIST-CUT Series

### Stamped Swirl Diffusers, Pre-Scored Insulated Back

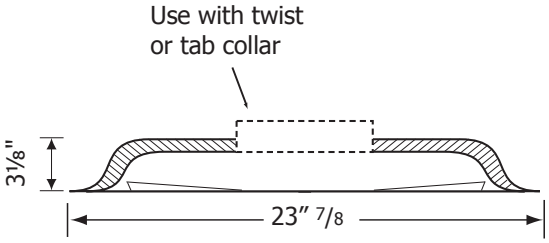


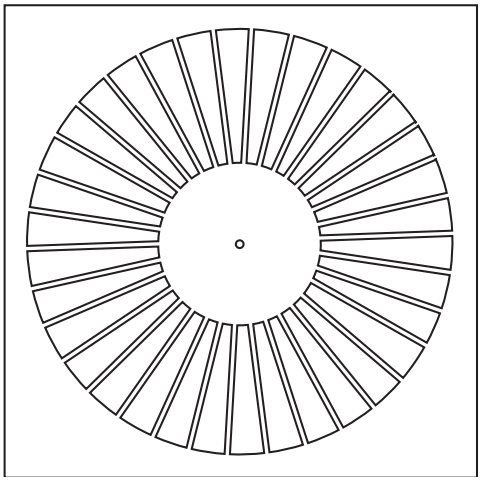
TWIST-CUT

**Material |** Powder coated stamped heavy gauge steel face with pre-scored molded fiberglass back.

**Air Pattern |** Fix swirl pattern.

**Ceiling Types |** False.



| Select Model | |
|---|---|
| ✓ | TWIST-CUT 24 |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## YIN Series
## Architectural Ceiling Return

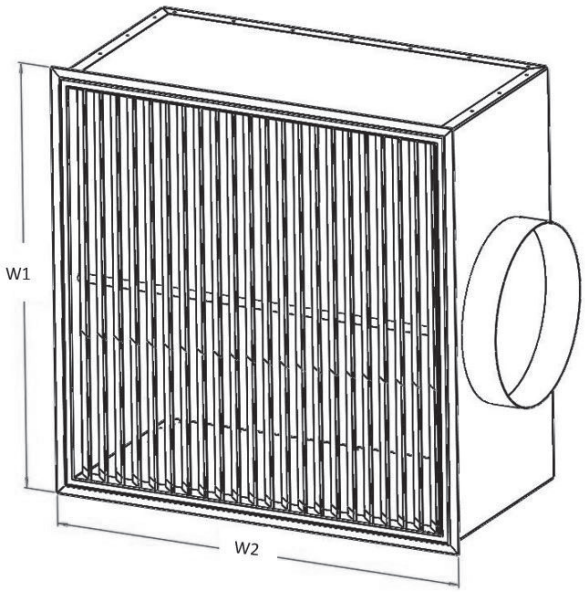
**Material |** Powder coated galvanized steel plenum and aluminum face

**Face |** Removable hinged face with magnetic lock, 45 degree louvers

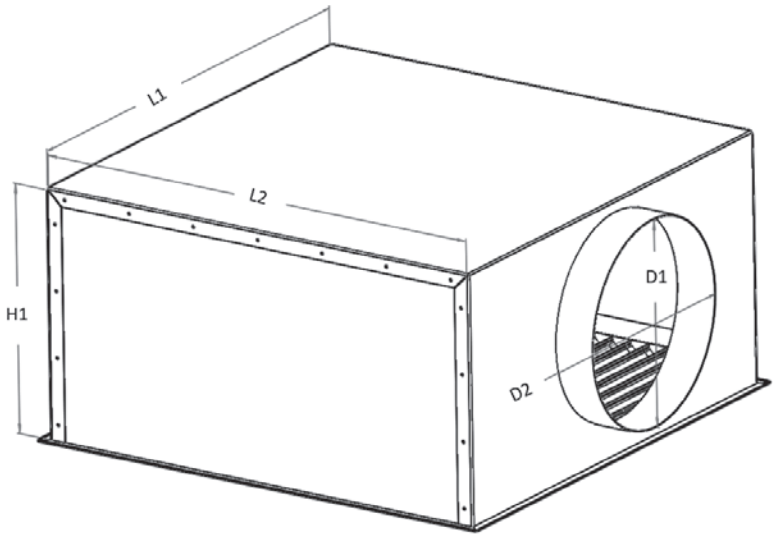
**Ceiling Types |** All



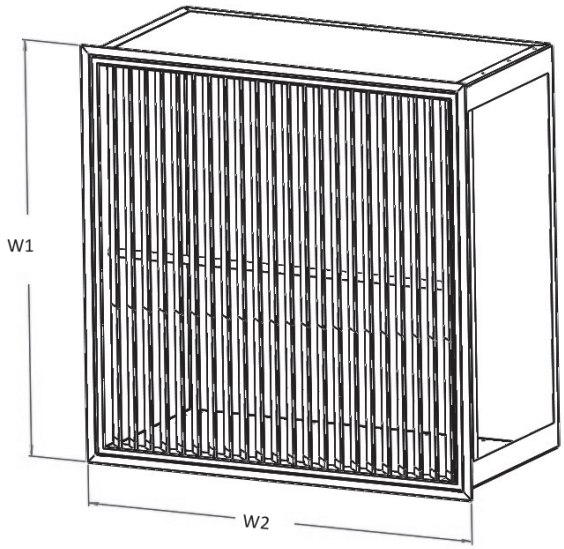
YIN



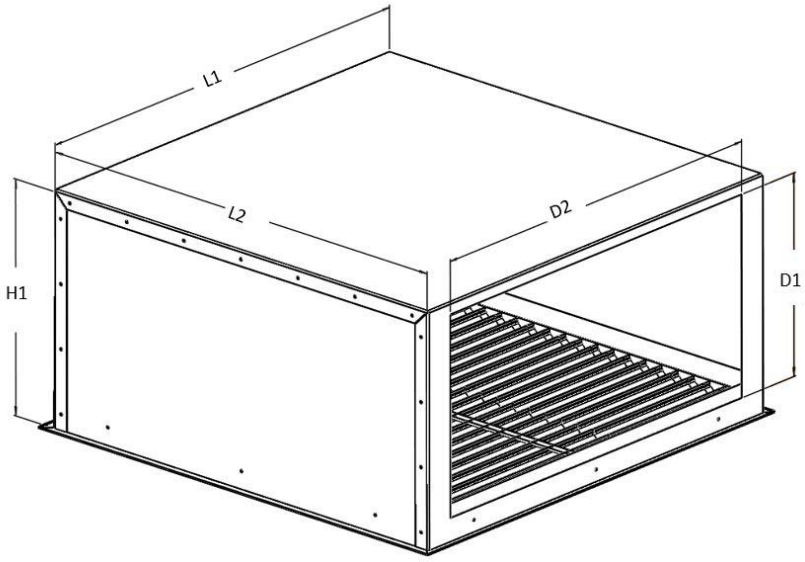

YIN 2410




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | **Model** | **W1** | **W2** | **L1** | **L2** | **H1** | **D1** | **D2** |
| | YIN 2410 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 11″ 7/8 | 9″ 7/8 | 9″ 7/8 |
| | YIN 2412 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 11″ 7/8 | 7″ 7/8 | 15″ 7/8 |
| | YIN 2416 | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 11″ 7/8 | 9″ 7/8 | 21″ 7/8 |




YIN 2400




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | **Model** | **W1** | **W2** | **L1** | **L2** | **H1** | **D1** | **D2** |
| | YIN 2400* | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 11″ 7/8 | 10″ (1) | 20″ (1) |

***YIN 2400 for non ducted ceiling plenum applications has no collar and a rectangular opening**

| Select Options | |
|---|---|
| | R6 Thermal Insulation |

| Select Interior Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

| Select Face Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

## FLYIN Series

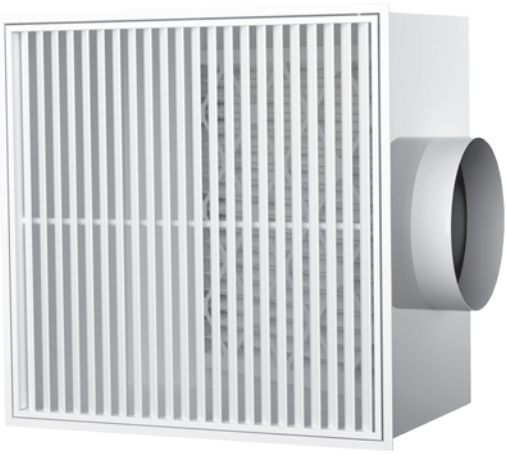
### Architectural Filter Ceiling Return

**Material |** Powder coated galvanized steel plenum and aluminum face

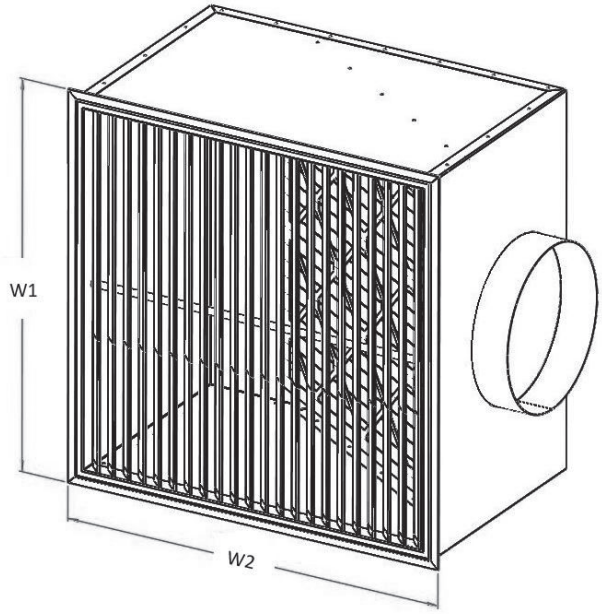
**Face |** Removable hinged face with magnetic lock, 45 degree louvers

**Filter |** 20" x 20" x 2" MERV-9 Filter included

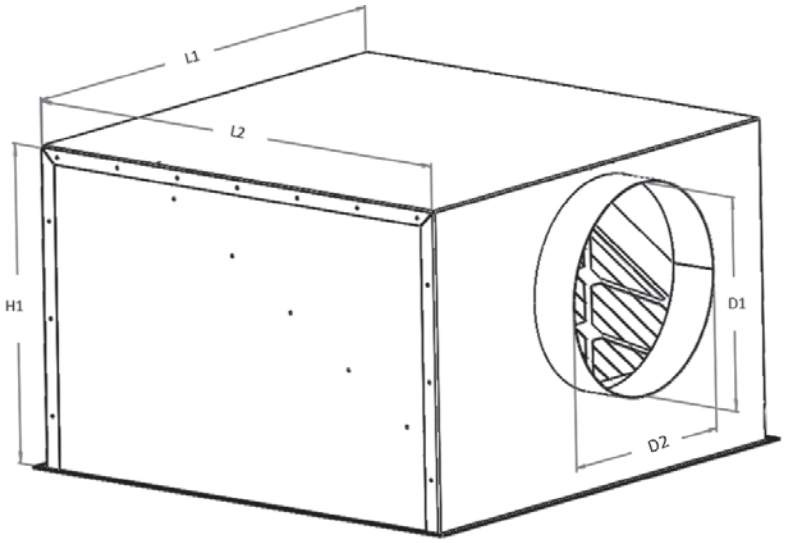
**Ceiling Types |** All



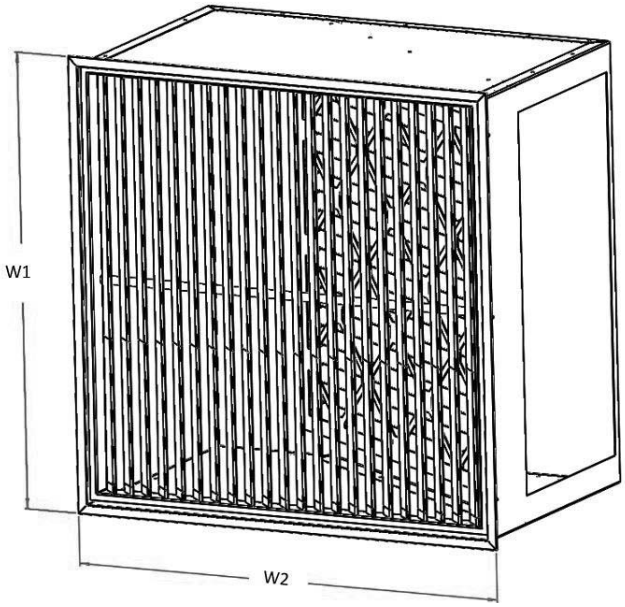
FLYIN



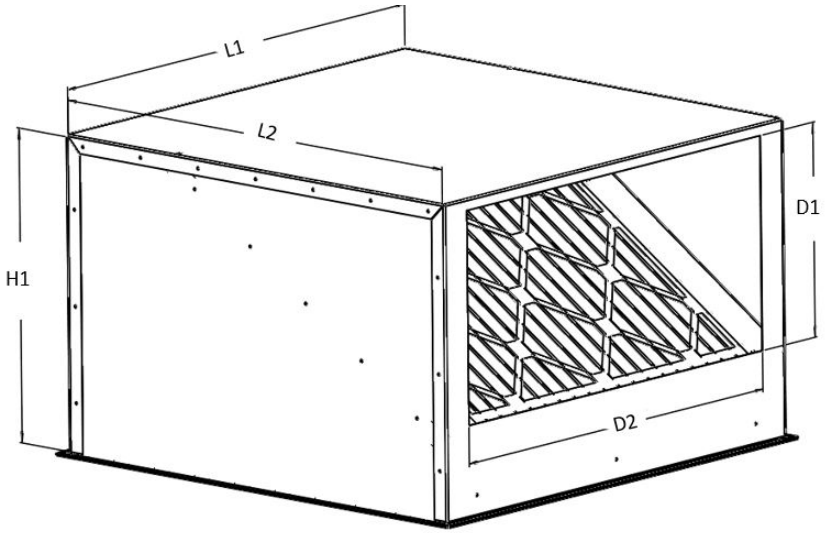

FLYIN 2410




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | **Model** | **W1** | **W2** | **L1** | **L2** | **H1** | **D1** | **D2** |
| | FLYIN 2410 | 23" 7/8 | 23" 7/8 | 22" 7/8 | 22" 15/16 | 14" 7/8 | 9" 7/8 | 9" 7/8 |
| | FLYIN 2412 | 23" 7/8 | 23" 7/8 | 22" 7/8 | 22" 15/16 | 14" 7/8 | 7" 7/8 | 15" 7/8 |
| | FLYIN 2416 | 23" 7/8 | 23" 7/8 | 22" 7/8 | 22" 15/16 | 14" 7/8 | 9" 7/8 | 21" 7/8 |




FLYIN 2400




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | **Model** | **W1** | **W2** | **L1** | **L2** | **H1** | **D1** | **D2** |
| | FLYIN 2400* | 23″ 7/8 | 23″ 7/8 | 22″ 7/8 | 22″ 15/16 | 14″ 7/8 | 10″ (1) | 20″ (1) |

***FLYIN 2400 for non ducted ceiling plenum applications has no collar and a rectangular opening**

| Select Options | |
|---|---|
| | R6 Thermal Insulation |

| Select Interior Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

| Select Face Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

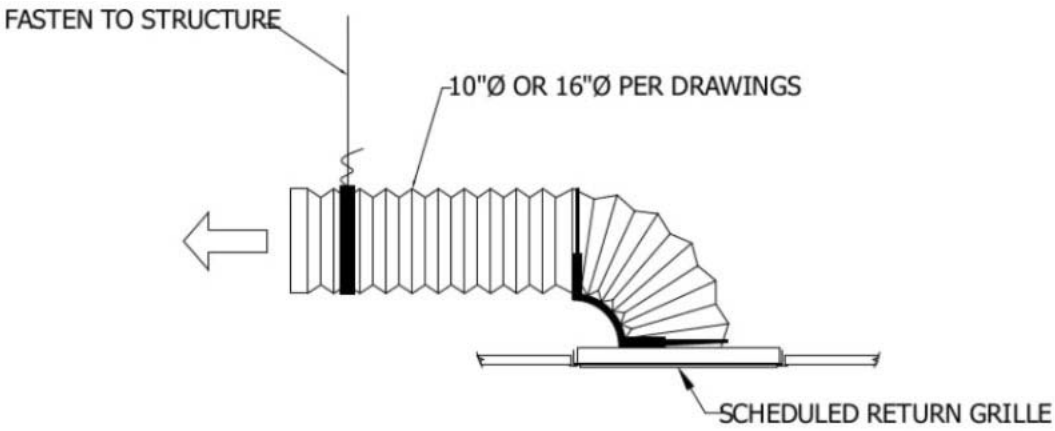
**Contractor:**

# FLEXABOOT Series

## Flexible Acoustical Sound Boot for Return Air Grilles



FLEXABOOT




NOTE: INSTALL FLEXABOOT ACOUSTICAL RETURN AIR BOOT ASSEMBLIES ON ALL RETURN GRILLES AS INDICATED ON DRAWINGS.

RETURN AIR BOOT DETAIL
NOT TO SCALE

| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **Dia** | **Length** |
| | FLEXABOOT 10 | 10″ | 72″ |
| | FLEXABOOT 16 | 16″ | 72″ |

**Project:**
**Engineer:**
**Architect:**
**Contractor:**

## FLEXRIGHT Series

### Flexible Duct 90 Degree Angle Support Brace



FLEXRIGHT



| Select Model | | |
|---|---|---|
| ✓ | Model | Dia |
| | FLEXRIGHT | 4″-16″ |

| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

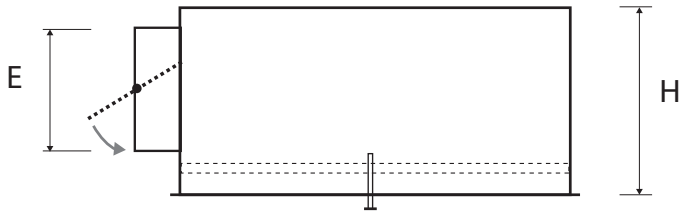
## PERFAIR-CS Series

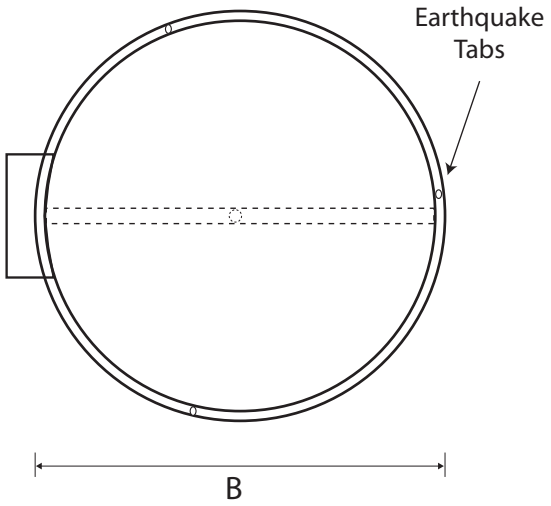
### High Performance Plenum for Round Diffusers

### Cynlindrical, Side Connection

**Material |** heavy gauge galvanized steel

**Matching Faces |** AXO-C, AXO-CY, NEX-C, OTO-C, PLAY-C, RXO-C



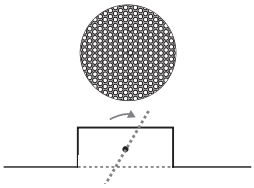

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 1205** | 5 | 11 3/8 | 4 7/8 | 9 |
| | **PERFAIR-CS 1206** | 6 | 11 3/8 | 5 7/8 | 9 |
| | **PERFAIR-CS 1208** | 8 | 11 3/8 | 7 7/8 | 9 |
| | **PERFAIR-CS 1606** | 6 | 15 1/4 | 5 7/8 | 10 |
| | **PERFAIR-CS 1608** | 8 | 15 1/4 | 7 7/8 | 10 |
| | **PERFAIR-CS 2006** | 6 | 19 | 5 7/8 | 12 |
| | **PERFAIR-CS 2008** | 8 | 19 | 7 7/8 | 12 |
| | **PERFAIR-CS 2010** | 10 | 19 | 9 7/8 | 12 |
| | **PERFAIR-CS 2506** | 6 | 24 | 5 7/8 | 13 |
| | **PERFAIR-CS 2508** | 8 | 24 | 7 7/8 | 13 |
| | **PERFAIR-CS 2510** | 10 | 24 | 9 7/8 | 13 |
| | **PERFAIR-CS 2512** | 12 | 24 | 11 7/8 | 13 |
| | **PERFAIR-CS 3312** | 12 | 33 | 11 7/8 | 16 |

All dimensions in inches

| Select Model - Metric | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CS 300 125** | 125 | 295 | 123 | 225 |
| | **PERFAIR-CS 300 150** | 150 | 295 | 148 | 225 |
| | **PERFAIR-CS 300 200** | 200 | 295 | 198 | 225 |
| | **PERFAIR-CS 400 150** | 150 | 395 | 148 | 250 |
| | **PERFAIR-CS 400 200** | 200 | 395 | 198 | 250 |
| | **PERFAIR-CS 500 150** | 150 | 495 | 148 | 300 |
| | **PERFAIR-CS 500 200** | 200 | 495 | 198 | 300 |
| | **PERFAIR-CS 500 250** | 250 | 495 | 248 | 300 |
| | **PERFAIR-CS 625 150** | 150 | 620 | 148 | 350 |
| | **PERFAIR-CS 625 200** | 200 | 620 | 198 | 350 |
| | **PERFAIR-CS 625 250** | 250 | 620 | 248 | 350 |
| | **PERFAIR-CS 625 300** | 300 | 620 | 298 | 350 |
| | **PERFAIR-CS 825 300** | 300 | 820 | 298 | 415 |

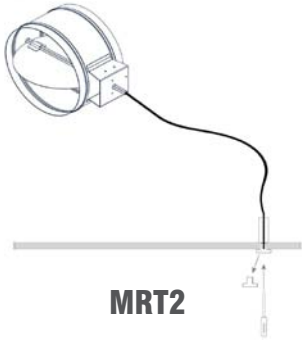
All dimensions in mm

## Integrated Air Volume Dampers



**R**

Perforated damper + air equalizer



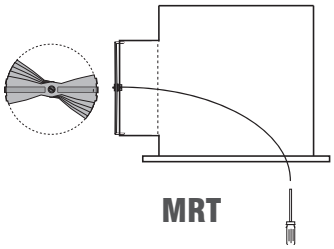
**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**EB**

Battery operated electro-balance damper with remote control, cable through face

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

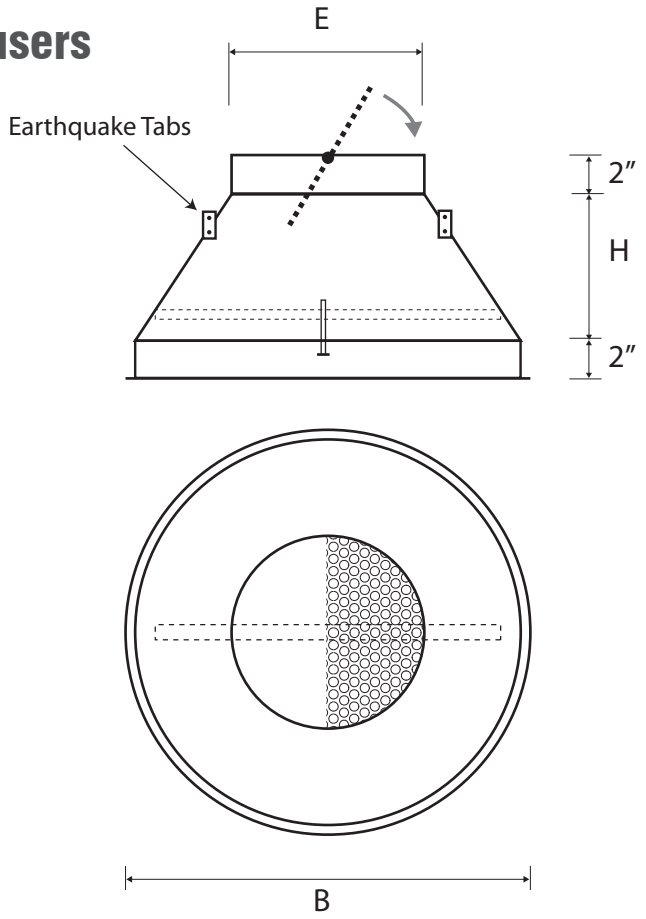
## PERFAIR-CT Series

### High Performance Plenum for Round Diffusers

### Conical, Top Connection

**Material |** heavy gauge galvanized steel.

**Matching Faces |** AXO-C, AXO-CY, NEX-C, OTO-C, PLAY-C, RXO-C



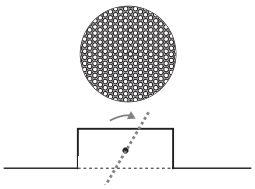

| Select Model - Imperial | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 1205** | 5 | 11 3/8 | 4 7/8 | 6 |
| | **PERFAIR-CT 1206** | 6 | 11 3/8 | 5 7/8 | 6 |
| | **PERFAIR-CT 1208** | 8 | 11 3/8 | 7 7/8 | 6 |
| | **PERFAIR-CT 1606** | 6 | 15 1/4 | 5 7/8 | 6 |
| | **PERFAIR-CT 1608** | 8 | 15 1/4 | 7 7/8 | 6 |
| | **PERFAIR-CT 2006** | 6 | 19 | 5 7/8 | 8 |
| | **PERFAIR-CT 2008** | 8 | 19 | 7 7/8 | 8 |
| | **PERFAIR-CT 2010** | 10 | 19 | 9 7/8 | 8 |
| | **PERFAIR-CT 2506** | 6 | 24 | 5 7/8 | 8 |
| | **PERFAIR-CT 2508** | 8 | 24 | 7 7/8 | 8 |
| | **PERFAIR-CT 2510** | 10 | 24 | 9 7/8 | 8 |
| | **PERFAIR-CT 2512** | 12 | 24 | 11 7/8 | 8 |
| | **PERFAIR-CT 3312** | 12 | 33 | 11 7/8 | 12 |

All dimensions in inches

| Select Model - Metric | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E | H |
| | **PERFAIR-CT 300 125** | 125 | 295 | 123 | 152 |
| | **PERFAIR-CT 300 150** | 150 | 295 | 148 | 152 |
| | **PERFAIR-CT 300 200** | 200 | 295 | 198 | 152 |
| | **PERFAIR-CT 400 150** | 150 | 395 | 148 | 152 |
| | **PERFAIR-CT 400 200** | 200 | 395 | 198 | 152 |
| | **PERFAIR-CT 500 150** | 150 | 495 | 148 | 203 |
| | **PERFAIR-CT 500 200** | 200 | 495 | 198 | 203 |
| | **PERFAIR-CT 500 250** | 250 | 495 | 248 | 203 |
| | **PERFAIR-CT 625 150** | 150 | 620 | 148 | 203 |
| | **PERFAIR-CT 625 200** | 200 | 620 | 198 | 203 |
| | **PERFAIR-CT 625 250** | 250 | 620 | 248 | 203 |
| | **PERFAIR-CT 625 300** | 300 | 620 | 298 | 203 |
| | **PERFAIR-CT 825 300** | 300 | 820 | 298 | 305 |

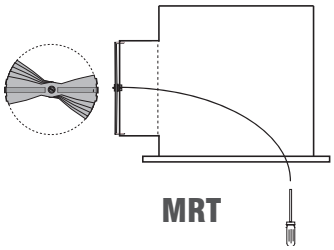
All dimensions in mm

## Integrated Air Volume Dampers



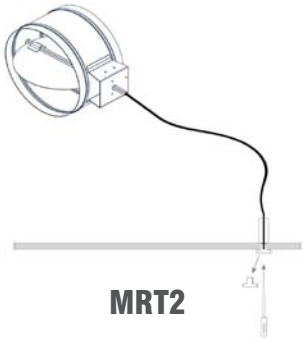
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

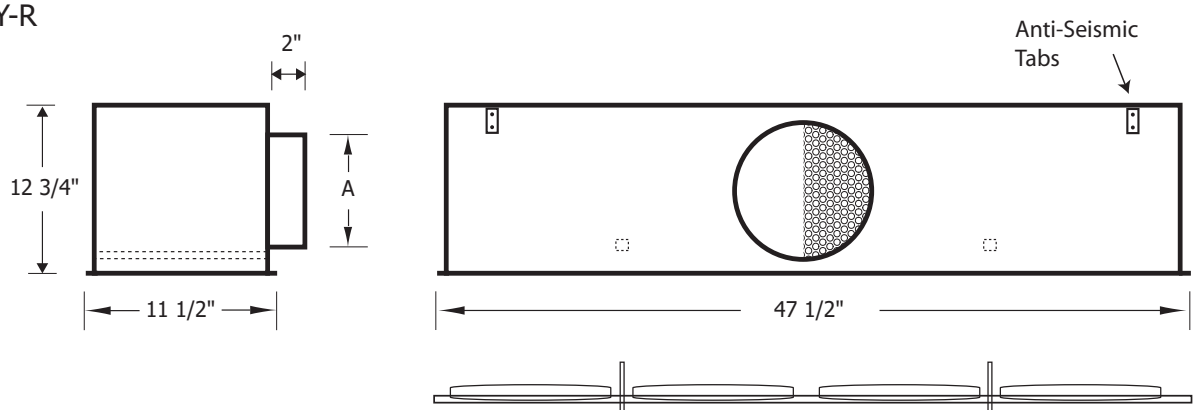
## PERFAIR-RS REV 5

# PERFAIR-RS Series

## High Performance Plenum for Rectangular Diffusers, Side Connection

**Material |** heavy gauge galvanized steel

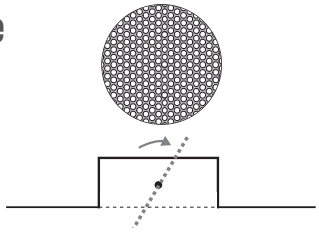
**Matching Faces |** PLAY-R




| Select Model | | | |
|---|---|---|---|
| ✓ | Model | Duct Size | A |
| | **PERFAIR-RS 4812 06** | 6 | 5 7/8 |
| | **PERFAIR-RS 4812 08** | 8 | 7 7/8 |
| | **PERFAIR-RS 4812 10** | 10 | 9 7/8 |
| | **PERFAIR-RS 4812 12** | 12 | 11 7/8 |

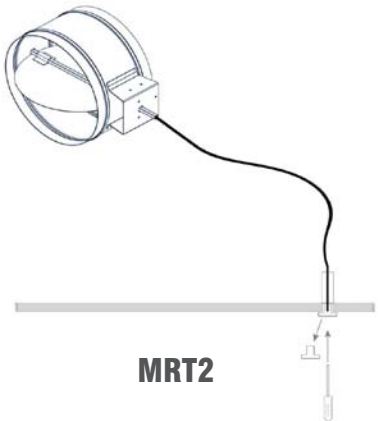
All dimensions in inches

## Integrated Air Volume Dampers



**Standard**

Perforated damper + air equalizer



**MRT2**

Manually operated damper, cable outside the plenum and thru drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

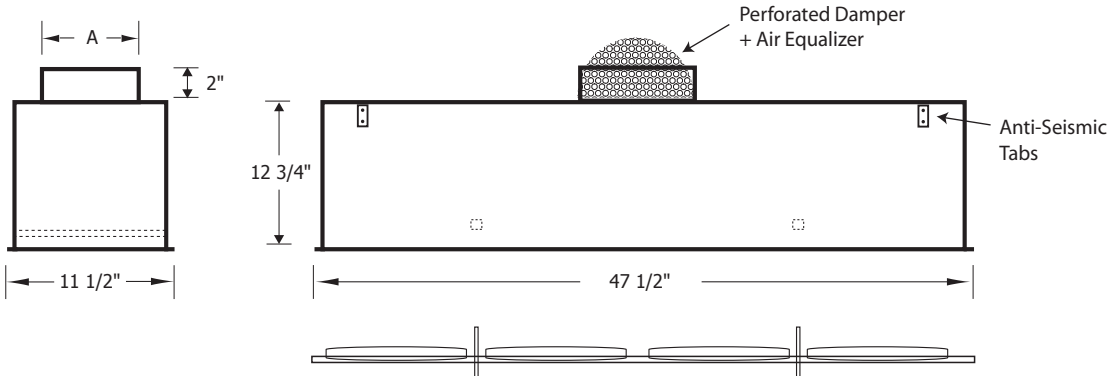
**Contractor:**

# PERFAIR-RT Series

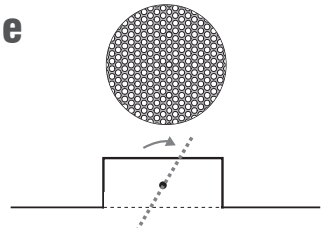
## High Performance Plenum for Rectangular Diffusers, Top Connection

**Material |** heavy gauge galvanized steel

**Matching Faces |** PLAY-R

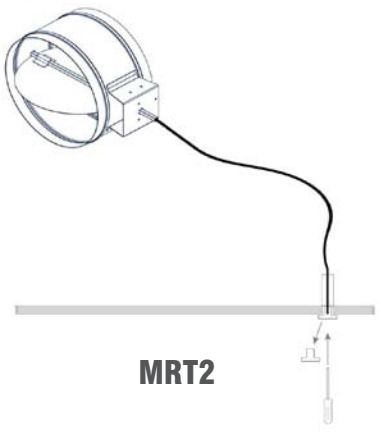



## Integrated Air Volume Dampers



**Standard**

Perforated damper + air equalizer



**MRT2**

Manually operated damper, cable outside the plenum and thru drywall with termination fixture



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **Duct Size** | **A** |
| | **PERFAIR-RT 4812 06** | 6 | 5 7/8 |
| | **PERFAIR-RT 4812 08** | 8 | 7 7/8 |
| | **PERFAIR-RT 4812 10** | 10 | 9 7/8 |

All dimensions in inches

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT2** | Manually operated, termination fixture |
| | **EB2** | Electro-balanced, battery powered |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

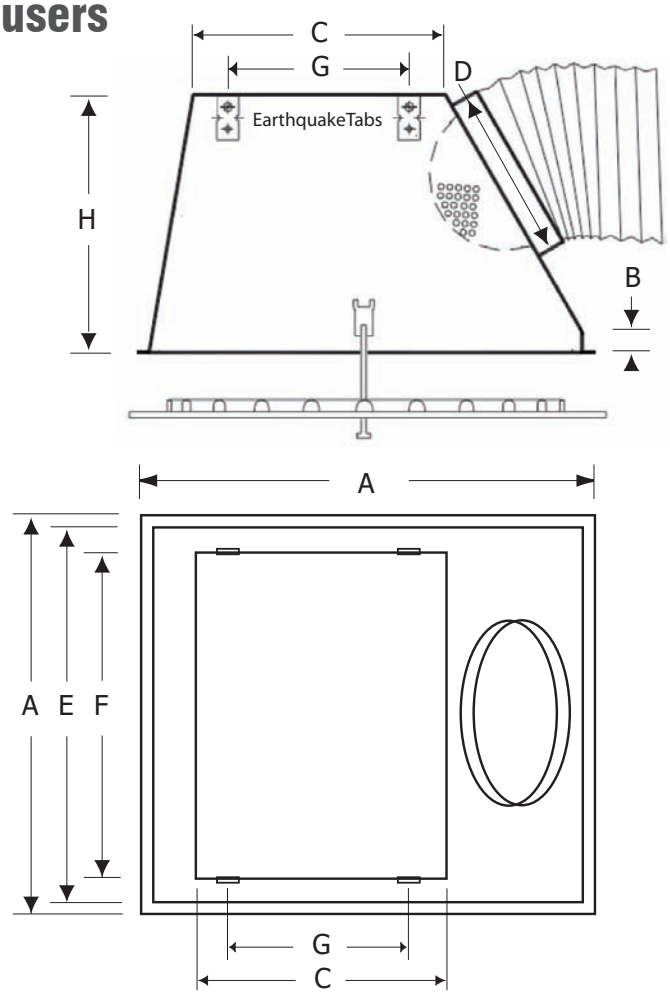
**Contractor:**

## PERFAIR-SS Series

### High Performance Plenum for Square Diffusers Trapezoidal, Side Connection

**Material |** heavy gauge galvanized steel

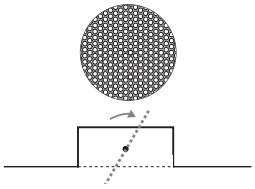
**Matching Faces |** AXO-S, AXO-S300, AXO-S400, AXO-SX, AXO-SY, NEX-S, OTO-S, PLAY-S, RXO-S




| Select Model | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | B | C | D | E | F | G | H |
| | **PERFAIR-SS 1205** | 5 | 11 1/2 | 1 | 5 3/4 | 4 7/8 | 11 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1206** | 6 | 11 1/2 | 1 | 5 3/4 | 5 7/8 | 11 3/4 | 10 1/2 | 6 5/8 | 9 27/32 |
| | **PERFAIR-SS 1208** | 8 | 11 1/2 | 1 | 5 3/4 | 7 7/8 | 11 3/4 | 10 1/2 | 6 5/8 | 12 |
| | **PERFAIR-SS 1608** | 8 | 15 3/8 | 1 | 7 1/2 | 7 7/8 | 14 5/8 | 13 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2010** | 10 | 19 1/4 | 1 | 8 1/2 | 9 7/8 | 18 5/8 | 17 5/8 | 8 5/8 | 12 |
| | **PERFAIR-SS 2405** | 5 | 23 1/2 | 1 | 10 1/2 | 4 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2406** | 6 | 23 1/2 | 1 | 10 1/2 | 5 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2408** | 8 | 23 1/2 | 1 | 10 1/2 | 7 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2410** | 10 | 23 1/2 | 1 | 10 1/2 | 9 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |
| | **PERFAIR-SS 2412** | 12 | 23 1/2 | 1 | 10 1/2 | 11 7/8 | 22 5/8 | 21 5/8 | 8 5/8 | 13 25/32 |

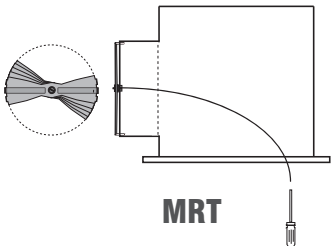
All dimensions in inches

## Integrated Air Volume Dampers



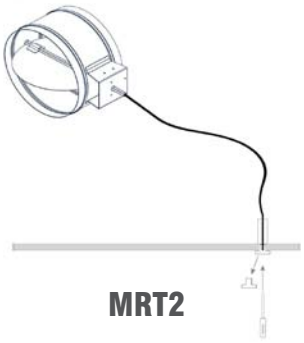
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2" Interior Accoustical Liner |
| | **AL1** | 1" Interior Accoustical Liner |
| | **ALC** | 1/2" Interior Closed Cell Accoustical Liner |
| | **ALC2** | 1" Interior Closed Cell Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

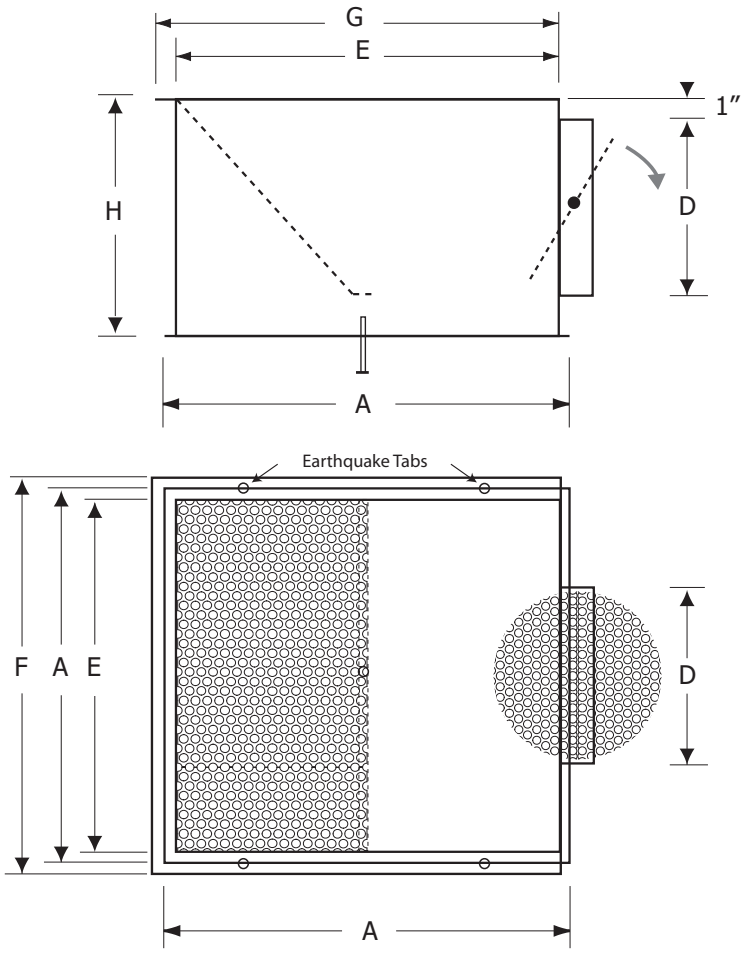
## PERFAIR-SSS Series

### High Performance Plenum for Square Diffusers

### Side Connection, Straight

**Material |** heavy gauge galvanized steel

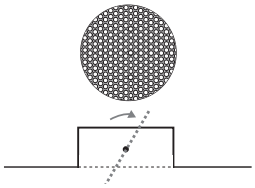
**Matching Faces |** AXO-S, AXO-S300, AXO-S400, AXO-SX, AXO-SY, NEX-S, OTO-S, PLAY-S, RXO-S




| Select Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ✓ | Model | Duct Size | A | D | E | F | G | H |
| | **PERFAIR-SSS 1205** | 5 | 11 1/2 | 4 7/8 | 11 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1206** | 6 | 11 1/2 | 5 7/8 | 11 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1208** | 8 | 11 1/2 | 7 7/8 | 11 3/4 | 13 3/4 | 12 3/4 | 10 |
| | **PERFAIR-SSS 1608** | 8 | 15 3/8 | 7 7/8 | 14 5/8 | 16 5/8 | 15 5/8 | 12 |
| | **PERFAIR-SSS 2010** | 10 | 19 1/4 | 9 7/8 | 18 5/8 | 21 5/8 | 19 5/8 | 14 |
| | **PERFAIR-SSS 2405** | 5 | 23 1/2 | 4 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2406** | 6 | 23 1/2 | 5 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2408** | 8 | 23 1/2 | 7 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2410** | 10 | 23 1/2 | 9 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |
| | **PERFAIR-SSS 2412** | 12 | 23 1/2 | 11 7/8 | 22 5/8 | 24 5/8 | 23 5/8 | 14 |

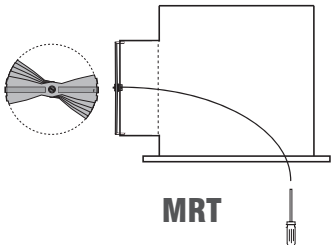
All dimensions in inches

## Integrated Air Volume Dampers



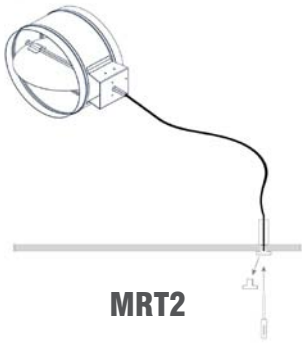
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2″ Interior Accoustical Liner |
| | **AL1** | 1″ Interior Accoustical Liner |
| | **R6** | 2″ Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

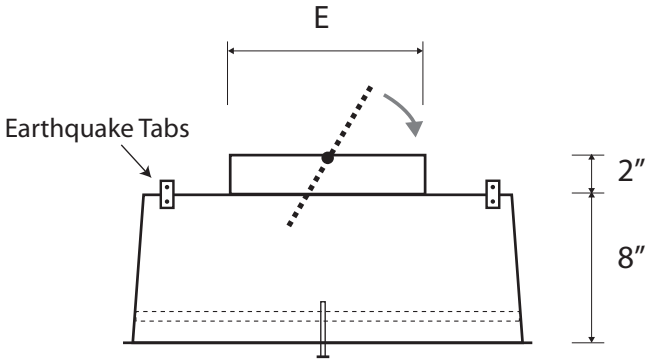
**Architect:**

**Contractor:**

# PERFAIR-ST Series
## High Performance Plenum for Square Diffusers
## Top Connection

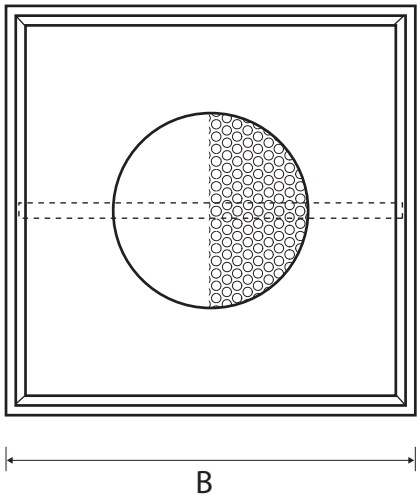
**Material |** heavy gauge galvanized steel

**Matching Faces |** AXO-S, AXO-S300, AXO-S400, AXO-SX, AXO-SY, NEX-S, OTO-S, PLAY-S, RXO-S

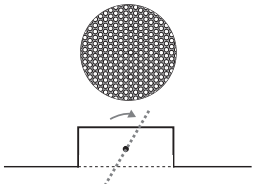



| Select Model | | | | |
|---|---|---|---|---|
| ✓ | Model | Duct Size | B | E |
| | **PERFAIR-ST 1206** | 6 | 11 1/2 | 5 7/8 |
| | **PERFAIR-ST 1208** | 8 | 11 1/2 | 7 7/8 |
| | **PERFAIR-ST 2406** | 6 | 23 1/2 | 5 7/8 |
| | **PERFAIR-ST 2408** | 8 | 23 1/2 | 7 7/8 |
| | **PERFAIR-ST 2410** | 10 | 23 1/2 | 9 7/8 |
| | **PERFAIR-ST 2412** | 12 | 23 1/2 | 11 7/8 |

All dimensions in inches

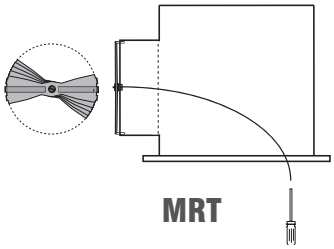


## Integrated Air Volume Dampers



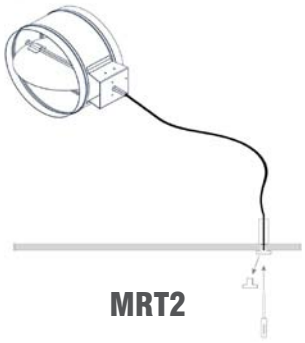
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2″ Interior Accoustical Liner |
| | **AL1** | 1″ Interior Accoustical Liner |
| | **R6** | 2″ Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

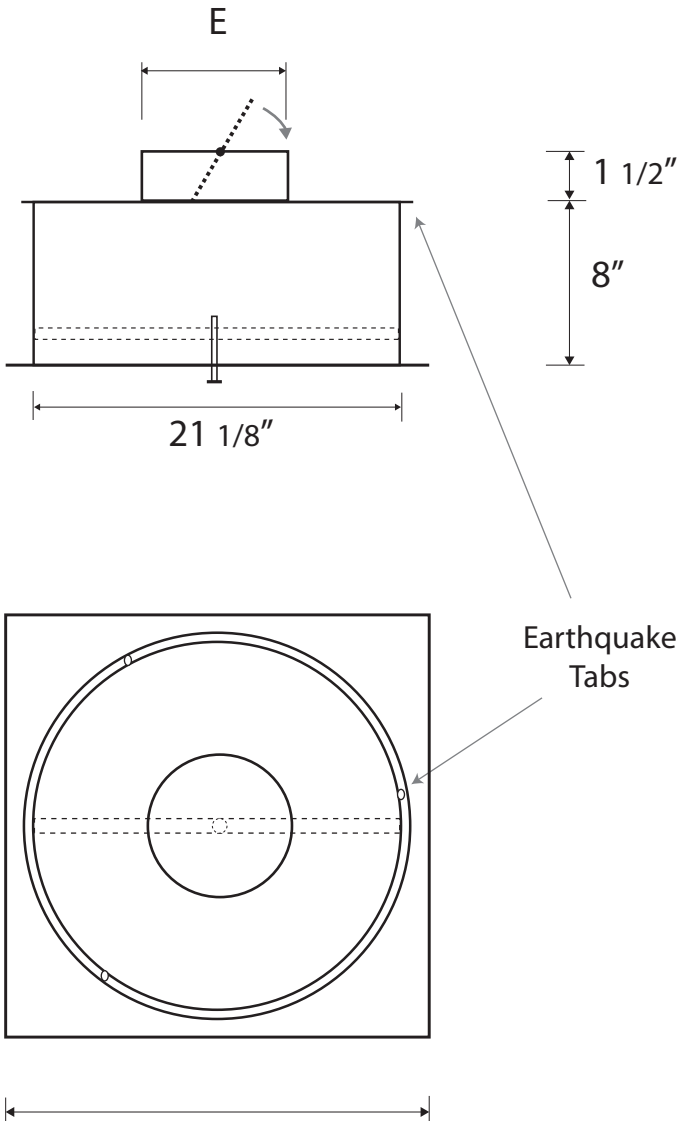
**Architect:**

**Contractor:**

# PERFAIR-SCT Series
## High Performance Plenum for Square Diffusers
## Cylindrical Back With Top Connection

**Material |** heavy gauge galvanized steel

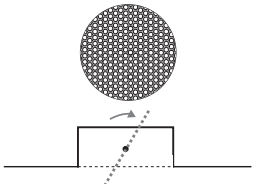
**Matching Faces |** AXO-S, AXO-S300, AXO-S400, AXO-SX, AXO-SY, NEX-S, OTO-S, PLAY-S, RXO-S




| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **Duct Size** | **E** |
| | **PERFAIR-SCT 2406** | 6 | 5 7/8 |
| | **PERFAIR-SCT 2408** | 8 | 7 7/8 |
| | **PERFAIR-SCT 2410** | 10 | 9 7/8 |
| | **PERFAIR-SCT 2412** | 12 | 11 7/8 |
| | **PERFAIR-SCT 2414** | 14 | 13 7/8 |
| | **PERFAIR-SCT 2416** | 16 | 15 7/8 |

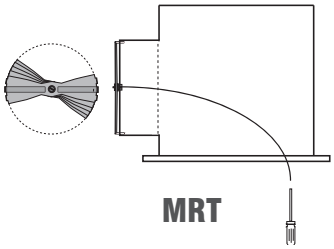
All dimensions in inches

## Integrated Air Volume Dampers



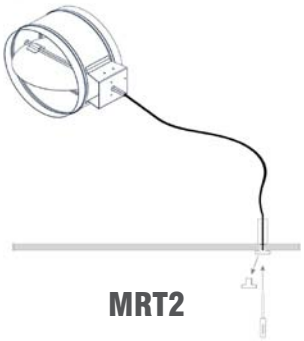
**R**

Perforated damper + air equalizer



**MRT**

Manually operated damper, cable inside the plenum, adjustment through face



**MRT2**

Manually operated damper, cable through drywall with termination fixture



**EB**

Battery operated electro-balance damper with remote control, cable through face



**EB2**

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

| Insulation | | |
|---|---|---|
| | **AL** | 1/2″ Interior Accoustical Liner |
| | **AL1** | 1″ Interior Accoustical Liner |
| | **R6** | 2″ Exterior R6 Thermal Insulation |

| Neck-Installed Air Volume Damper | | |
|---|---|---|
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated, cable thru face |
| | **MRT2** | Manually operated, termination fixture |
| | **EB** | Electro-balanced, battery powered, cable thru face |
| | **EB2** | Electro-balanced, battery powered, termination fixture |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

## PERFAIR-XS REV 2

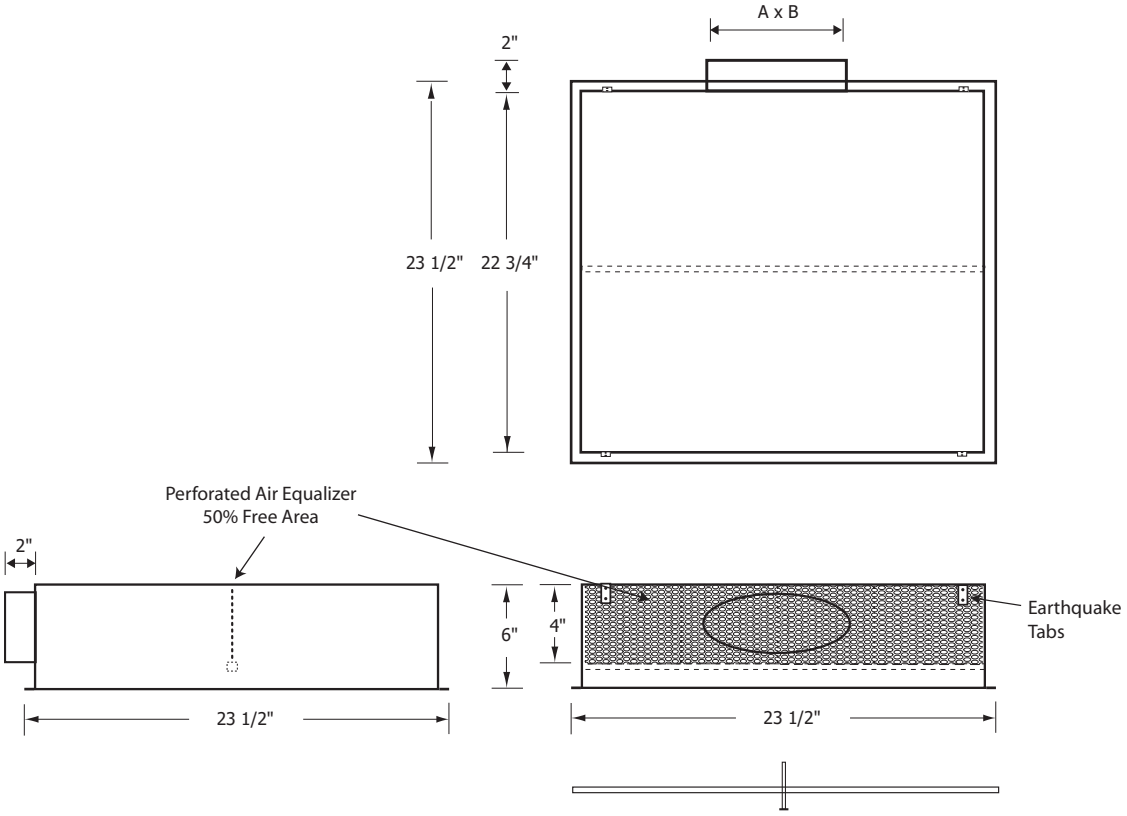
# PERFAIR-XS Series

## Extra Compact Plenum for Square Diffusers
## Side Oval Connection



**Material |** heavy gauge galvanized steel

**Matching Faces |** AXO-S, AXO-S300, AXO-S400, AXO-SX, AXO-SY, NEX-S, OTO-S, PLAY-S, RXO-S




| Select Model | | | | |
|---|---|---|---|---|
| ✓ | **Model** | **Duct Size** | **A** | **B** |
| | **PERFAIR-XS 2404** | 4 | 3 7/8 | 3 7/8 |
| | **PERFAIR-XS 2405** | 5 | 4 7/8 | 4 7/8 |
| | **PERFAIR-XS 2406** | 6 | 7 9/16 | 3 1/8 |
| | **PERFAIR-XS 2408** | 8 | 10 1/2 | 3 1/4 |

All dimensions in inches

| Insulation | | |
|---|---|---|
| | **R6** | 2" Exterior R6 Thermal Insulation |

**Project:**

**Engineer:**

**Architect:**

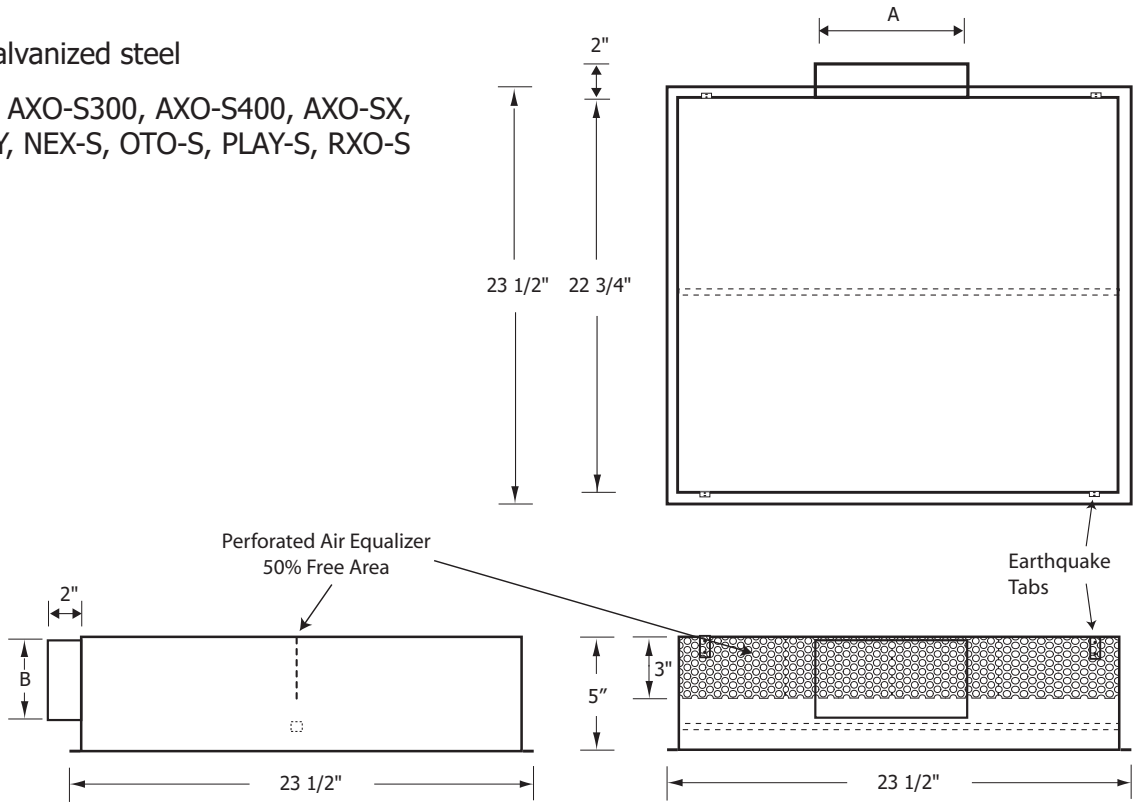
**Contractor:**

# PERFAIR-XSS Series

## Extra Compact Plenum for Square Diffusers
## Side Rectangular Connection

**Material |** heavy gauge galvanized steel

**Matching Faces |** AXO-S, AXO-S300, AXO-S400, AXO-SX, AXO-SY, NEX-S, OTO-S, PLAY-S, RXO-S




| Select Model | | | | |
|---|---|---|---|---|
| ✓ | **Model** | **Duct Size** | **A** | **B** |
| | **PERFAIR-XSS 8 4** | 8" x 4" | 7 7/8" | 3 7/8" |
| | **PERFAIR-XSS 16 4** | 16" x 4" | 15 7/8" | 3 7/8" |
| | **PERFAIR-XSS 200 100** | 200 x 100 mm | 200 mm | 100 mm |
| | **PERFAIR-XSS 400 100** | 400 x 100 mm | 400 mm | 100 mm |

| Insulation | | |
|---|---|---|
| | **R6** | 2" Exterior R6 Thermal Insulation |

**Project:**

**Engineer:**

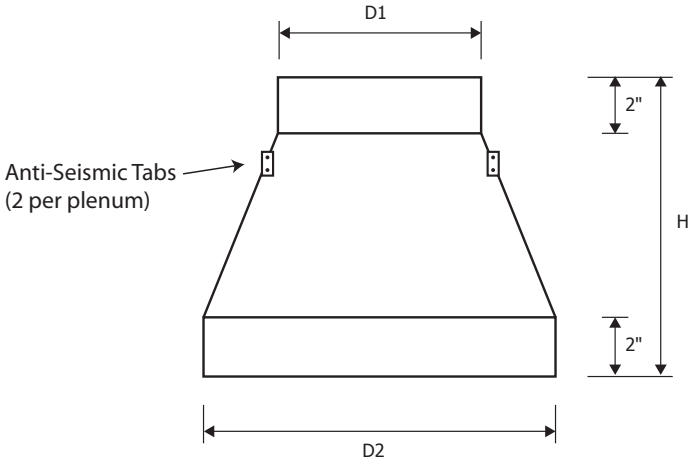
**Architect:**

**Contractor:**

# PLRR Series
## High Performance Plenum, Round to Round Connection

**Material |** heavy gauge galvanized steel

**Matching Products |** AXP, DCG




| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | Model | Duct | D1 | D2 | H |
| | **PLRR 0504** | 4 | 3 7/8 | 5 | 6 |
| | **PLRR 0505** | 5 | 4 7/8 | 5 | 6 |
| | **PLRR 0605** | 5 | 4 7/8 | 6 3/8 | 6 |
| | **PLRR 0606** | 6 | 5 7/8 | 6 3/8 | 6 |
| | **PLRR 0805** | 5 | 4 7/8 | 8 | 8 |
| | **PLRR 0806** | 6 | 5 7/8 | 8 | 8 |
| | **PLRR 0808** | 8 | 7 7/8 | 8 | 8 |
| | **PLRR 1006** | 6 | 5 7/8 | 10 | 8 |
| | **PLRR 1008** | 8 | 7 7/8 | 10 | 8 |
| | **PLRR 1010** | 10 | 9 7/8 | 10 | 8 |
| | **PLRR 1208** | 8 | 7 7/8 | 12 3/8 | 10 |
| | **PLRR 1210** | 10 | 9 7/8 | 12 3/8 | 10 |
| | **PLRR 1212** | 10 | 9 7/8 | 12 3/8 | 10 |

All dimensions in inches (in)

| Options | | |
|---|---|---|
| | **EQ** | Air Equalizing Grid (Perforated Plate) |
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated cable damper, cable thru face |
| | **MRT2** | Manually operated cable damper, drywall fixture |
| | **EB** | Electro-balanced cable damper, thru face |
| | **EB2** | Electro-balanced cable damper, drywall fixture |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Mill Finish |
| | Other RAL: |

**Project:**

**Engineer:**

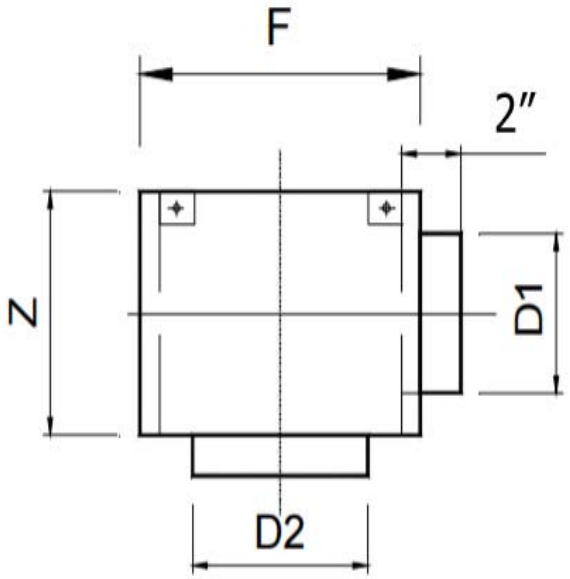
**Architect:**

**Contractor:**

# PLX6 Series
## Plenum with Side Connection for AX6 Round Swirl Diffusers

**Material |** heavy gauge galvanized steel

**Matching Products |** AX6




| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | **Model** | **D2** | **F** | **Z** | **D1** |
| | **PLX6 10** | 9 9/16 | 12 19/32 | 12 1/8 | 9 7/8 |
| | **PLX6 12** | 12 1/8 | 15 5/32 | 14 11/16 | 11 7/8 |
| | **PLX6 16** | 15 19/32 | 19 11/16 | 17 23/32 | 15 7/8 |
| | **PLX6 20** | 19 3/8 | 23 5/8 | 19 11/16 | 17 7/8 |
| | **PLX6 25** | 24 31/64 | 28 47/64 | 21 31/32 | 19 7/8 |

All dimensions in inches (in)

| Options | | |
|---|---|---|
| | **S** | Side duct connection |
| | **T** | Top duct connection |
| | **R** | Perforated air volume damper/equalizer |
| | **M** | Access door for actuator |
| | **AL** | 1/2" interior accoustical liner |
| | **R6** | 2" exterior R6 thermal insulation |

| Select Finish | |
|---|---|
| | Mill Finish |
| | Powder Coated White RAL 9016 |
| | Powder Coated (specify RAL) : |

**Project:**

**Engineer:**

**Architect:**

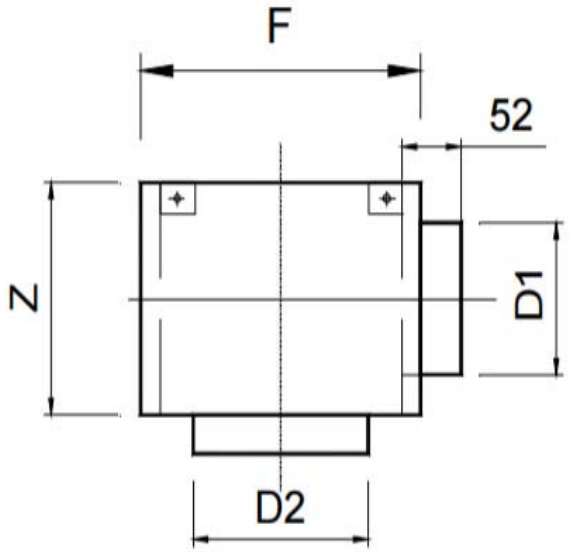
**Contractor:**

## PLX6 Series

### Plenum with Side Connection for AX6 Round Swirl Diffusers

**Material |** heavy gauge galvanized steel

**Matching Products |** AX6




| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | **Model** | **D2** | **F** | **Z** | **D1** |
| | **PLX6 250** | 243 | 320 | 308 | 248 |
| | **PLX6 315** | 308 | 385 | 373 | 313 |
| | **PLX6 400** | 396 | 500 | 450 | 398 |
| | **PLX6 500** | 492 | 600 | 500 | 448 |
| | **PLX6 630** | 622 | 730 | 558 | 498 |

All dimensions in millimeters (mm)

| Options | | |
|---|---|---|
| | **S** | Side duct connection |
| | **T** | Top duct connection |
| | **R** | Perforated air volume damper/equalizer |
| | **M** | Access door for actuator |
| | **AL** | 1/2" interior accoustical liner |
| | **R6** | 2" exterior R6 thermal insulation |

| Select Finish | |
|---|---|
| | Mill Finish |
| | Powder Coated White RAL 9016 |
| | Powder Coated (specify RAL) : |

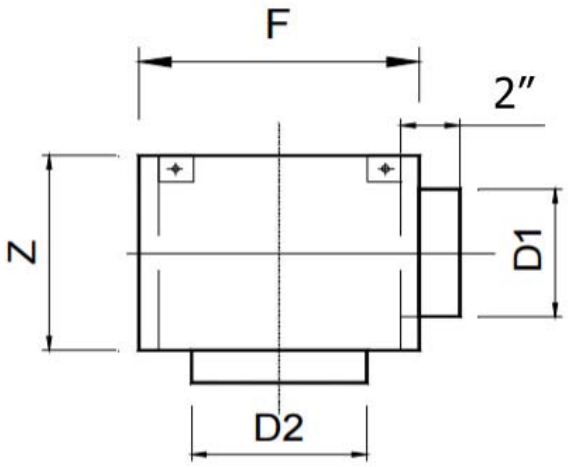
| | |
|---|---|
| **Project:** | |
| **Engineer:** | |
| **Architect:** | |
| **Contractor:** | |

# PLXP Series

## High Performance Plenum for Round Diffusers With Integral Neck

**Material |** heavy gauge galvanized steel

**Matching Products |** AXP, DCG




| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | **Model** | **D2** | **F** | **Z** | **D1** |
| | **PLXP 05** | 5 | 8 | 6 | 3 7/8″ |
| | **PLXP 06** | 6 19/64″ | 10 | 7 | 4 7/8″ |
| | **PLXP 08** | 8 | 12 | 10 | 5 7/8″ |
| | **PLXP 10** | 10 | 15 | 11 | 7 7/8″ |
| | **PLXP 12** | 12 13/32″ | 19 | 14 | 9 7/8″ |

All dimensions in inches (in)

| Options | | |
|---|---|---|
| | **S** | Top connection |
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated cable damper, cable thru face |
| | **MRT2** | Manually operated cable damper, drywal fixture |
| | **EB** | Electro-balanced cable damper, thru face |
| | **EB2** | Electro-balanced cable damper, drywal fixture |
| | **AL** | 1/2″ Interior Accoustical Liner |
| | **R6** | 2″ Exterior R6 Thermal Insulation |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Mill Finish |
| | Powder Coated (specify RAL) : |

**Project:**

**Engineer:**

**Architect:**

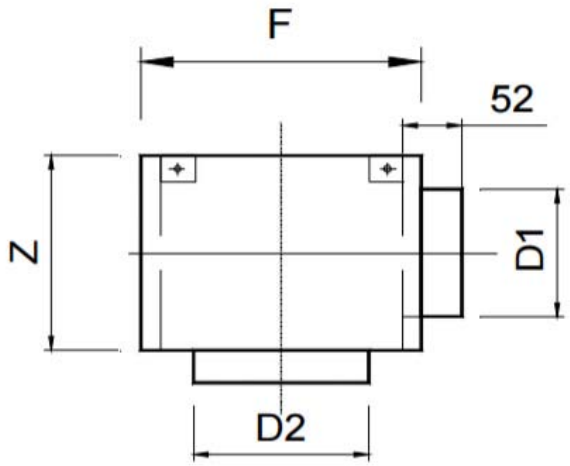
**Contractor:**

## PLXP Series

### High Performance Plenum for Round Diffusers With Integral Neck

**Material |** heavy gauge galvanized steel

**Matching Products |** AXP, DCG




| Select Model | | | | | |
|---|---|---|---|---|---|
| ✓ | **Model** | **D2** | **F** | **Z** | **D1** |
| | **PLXP 125** | 125 | 200 | 150 | 98 |
| | **PLXP 160** | 160 | 250 | 175 | 123 |
| | **PLXP 200** | 200 | 300 | 220 | 148 |
| | **PLXP 250** | 250 | 380 | 270 | 198 |
| | **PLXP 315** | 315 | 480 | 335 | 248 |

All dimensions in millimeters (mm)

| Options | | |
|---|---|---|
| | **S** | Top connection |
| | **R** | Perforated air volume damper/equalizer |
| | **MRT** | Manually operated cable damper, cable thru face |
| | **MRT2** | Manually operated cable damper, drywal fixture |
| | **EB** | Electro-balanced cable damper, thru face |
| | **EB2** | Electro-balanced cable damper, drywal fixture |
| | **AL** | 1/2" Interior Accoustical Liner |
| | **R6** | 2" Exterior R6 Thermal Insulation |

| Cable Length (MRT2 or EB2) | |
|---|---|
| | |

| Select Finish | |
|---|---|
| | Mill Finish |
| | Powder Coated (specify RAL) : |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

**BOXSTAR** REV 0

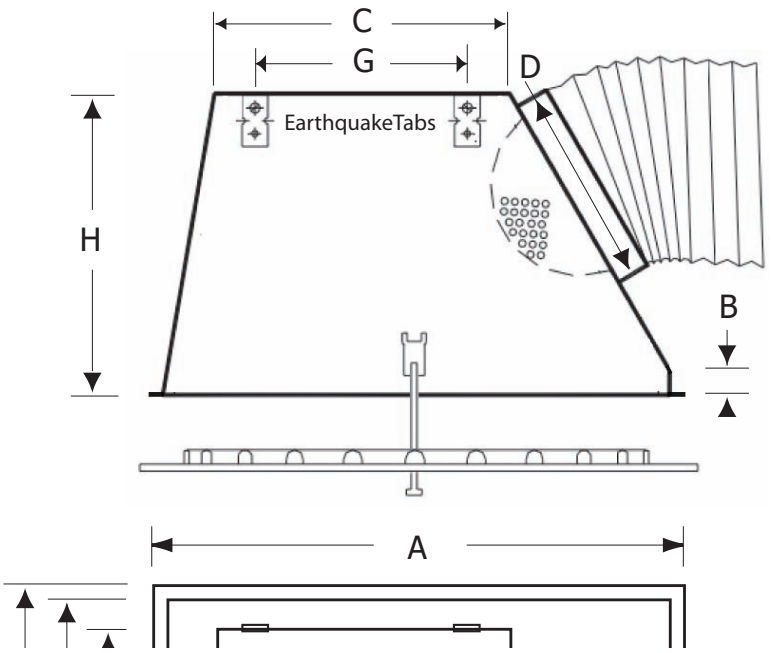
## BOXSTAR Series

### High Performance Plenum for Square Diffusers (by MADEL®)

**Material |** heavy gauge galvanized steel.

**Accessories |** BOXSTAR-R comes with air equalizer + volume damper built-in collar.

**Matching Faces |** AXO-S, AXO-SX, AXO-SY, AXO-S400, NEX-S, PLAY-S.




| Select Model | | | | |
|---|---|---|---|---|
| ✓ | **Imperial** | **B** | **C** | **E** |
| | BOXSTAR 24 | 23″ 27/64 | 13″ 25/32 | 9″ 3/4 |
| | BOXSTAR-R 12 | 11″ 3/8 | 9″ 27/32 | 4″ 7/8 |
| | BOXSTAR-R 24 | 23″ 27/64 | 13″ 25/32 | 9″ 3/4 |

| Select Model | | | | |
|---|---|---|---|---|
| ✓ | **Metric** | **B** | **C** | **E** |
| | BOXSTAR 605 | 590 mm | 350 mm | 248 mm |
| | BOXSTAR-R 299 | 290 mm | 250 mm | 123 mm |
| | BOXSTAR-R 605 | 590 mm | 350 mm | 248 mm |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

PLXOC REV 0

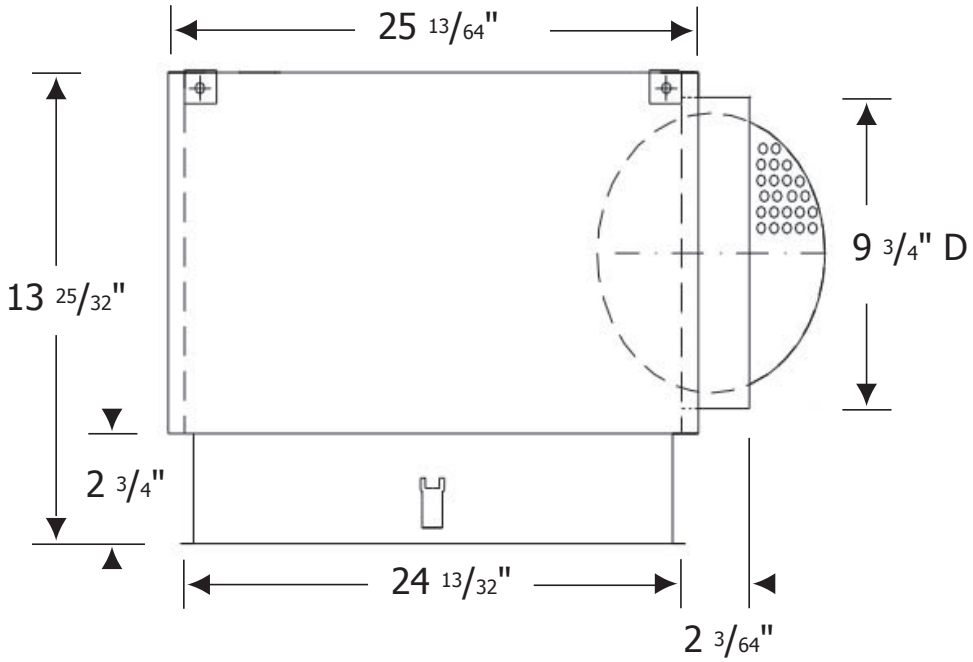
## PLXOC Series

### High Performance Plenum for Round Diffusers (by MADEL®)

**Material |** heavy gauge galvanized steel.

**Accessories |** PLXOC-R comes with air equalizer + volume damper built-in collar.

**Matching Faces |** AXO-C, AXO-CY, NEX-C, PLAY-C.




| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | PLXOC-R 25 | | PLXOC-R 625 |

**Project:**

**Engineer:**

**Architect:**

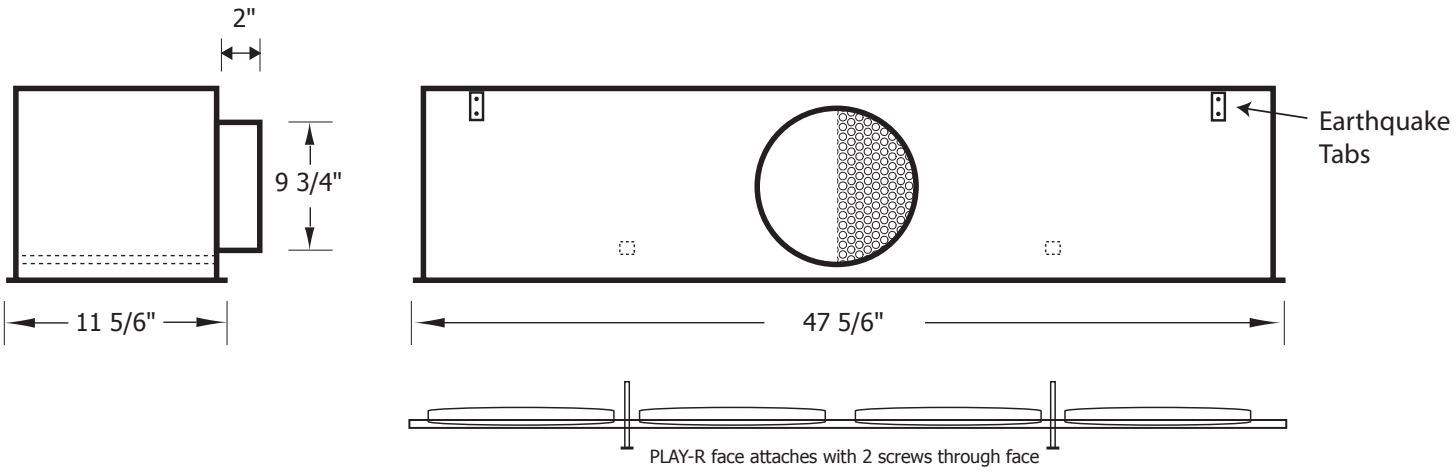
**Contractor:**

# PLXOR Series
## High Performance Plenum for Rectangular Diffusers (by MADEL®)

**Material |** heavy gauge galvanized steel.

**Accessories |** PLXOR-R comes with air equalizer + volume damper built-in collar.

**Matching Faces |** PLAY-R.




| Select Model | | | |
|---|---|---|---|
| ✓ | **Imperial** | ✓ | **Metric** |
| | PLXOR-R 48 12 | | PLXOR-R 1215 300 |

**Project:**

**Engineer:**

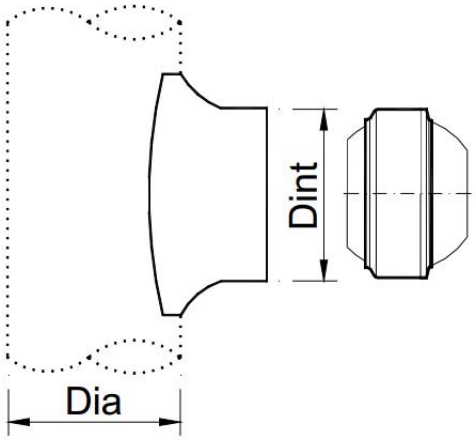
**Architect:**

**Contractor:**

# IEH Series

## Round Duct Mounting Adaptor for DCG and KAM-D

**Material |** Galvanized Steel




| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **Dint** | **Dia** |
| | **IEH 125** | 125 | |
| | **IEH 160** | 160 | |
| | **IEH 200** | 200 | |
| | **IEH 250** | 250 | |
| | **IEH 315** | 315 | |
| | **IEH 400** | 400 | |

All dimensions in millimeters (mm)

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Powder Coated Metallic Grey RAL9006 |
| | Other RAL: |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# SUBMITTAL

IEK

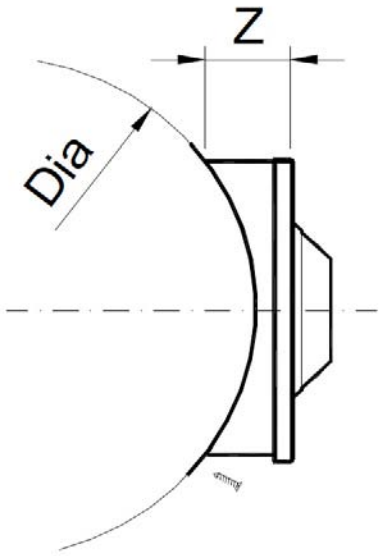
REV 1

## IEK Series
## Round Duct Mounting Adaptor for KOO

**Material |** Galvanized Steel

| Select Dimension | | | |
|---|---|---|---|
| ✓ | KOO Size | Nb Nozzles | Duct Dia |
| | 8 x 4 | 2 x 1 | |
| | 12 x 4 | 3 x 1 | |
| | 16 x 4 | 4 x 1 | |
| | 20 x 4 | 5 x 1 | |
| | 24 x 4 | 6 x 1 | |
| | 28 x 4 | 7 x 1 | |
| | 32 x 4 | 8 x 1 | |
| | 36 x 4 | 9 x 1 | |
| | 40 x 4 | 10 x 1 | |
| | 8 x 8 | 2 x 2 | |
| | 12 x 8 | 3 x 2 | |
| | 16 x 8 | 4 x 2 | |
| | 20 x 8 | 5 x 2 | |
| | 24 x 8 | 6 x 2 | |
| | 28 x 8 | 7 x 2 | |
| | 32 x 8 | 8 x 2 | |
| | 36 x 8 | 9 x 2 | |
| | 40 x 8 | 10 x 2 | |
| | 12 x 6 | 2 x 1 | |
| | 18 x 6 | 3 x 1 | |
| | 24 x 6 | 4 x 1 | |
| | 30 x 6 | 5 x 1 | |
| | 36 x 6 | 6 x 1 | |
| | 42 x 6 | 7 x 1 | |
| | 48 x 6 | 8 x 1 | |
| | 12 x 12 | 2 x 2 | |
| | 18 x 12 | 3 x 2 | |
| | 24 x 12 | 4 x 2 | |
| | 30 x 12 | 5 x 2 | |
| | 36 x 12 | 6 x 2 | |
| | 42 x 12 | 7 x 2 | |
| | 48 x 12 | 8 x 2 | |

| Select Finish | |
|---|---|
| | Mill Finish |
| | Powder Coated in RAL: |




**Installation Note:** IEK is secured to duct using screws. KOO is secured to IEK using concealed spring clips.

**Project:**

**Engineer:**

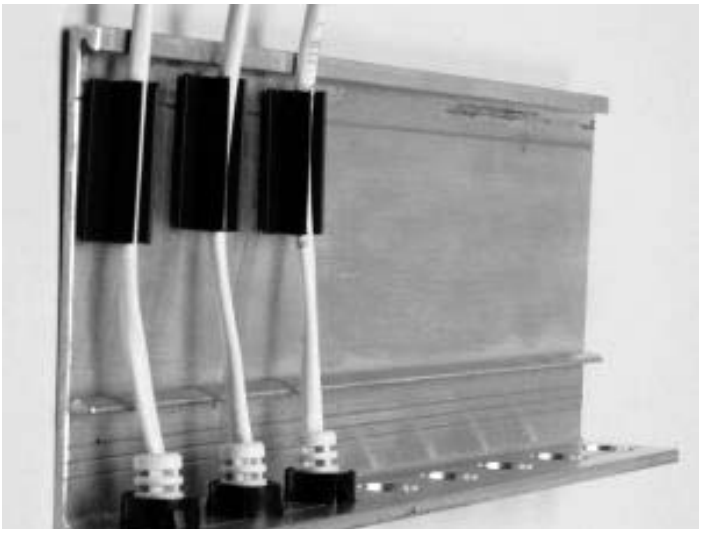
**Architect:**

**Contractor:**

# EB-AB8

## Eight Connector Wall Bracket for EB Dampers

**Material |** Extruded Aluminum



| Select Model | |
|---|---|
| ✓ | **Model** |
| | **EB-AB8** |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

# EB-REMOTE

## Battery Powered Remote Control for EB Dampers



| Select Model | |
|---|---|
| ✓ | Model |
| | EB-REMOTE |

| | |
|---|---|
| Project: | |
| Engineer: | |
| Architect: | |
| Contractor: | |

# EB-SP Series

## Drywall Termination Fixtures for EB Dampers

**Material | UL 94-V0 flammability rated white nylon**



EB-SP1



EB-SP8

| Select Model | | |
|---|---|---|
| ✓ | Model | |
| | EB-SP1 | Single Connector Panel |
| | EB-SP8 | Eight Connector Panel |

**Project:**

**Engineer:**

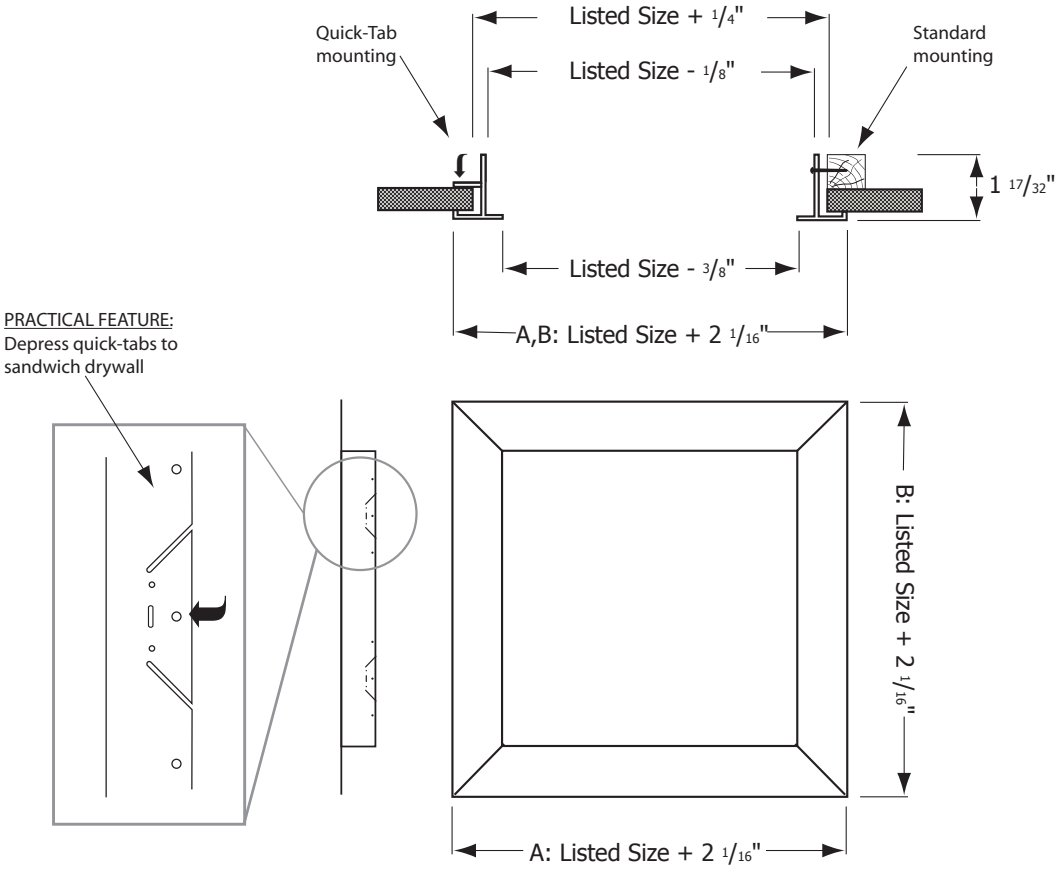
**Architect:**

**Contractor:**

# PF

## Plaster Frame - Drywall Frame - for Lay-in Diffusers and Returns

**Material |** heavy gauge extruded aluminum.




| Select Model | | | |
|---|---|---|---|
| ✓ | **Model** | **Listed Size A x B** | **Overall Dim. A x B** |
| | PF 1212 | 12″ x 12″ | 14 1/16″ x 14 1/16″ |
| | PF 2424 | 24″ x 24″ | 26 1/16″ x 26 1/16″ |
| | PF 4812 | 48″ x 12″ | 50 1/16″ x 14 1/16″ |

| Select Finish | |
|---|---|
| | Powder Coated White RAL9016 |
| | Other RAL: |

**Project:**

**Engineer:**

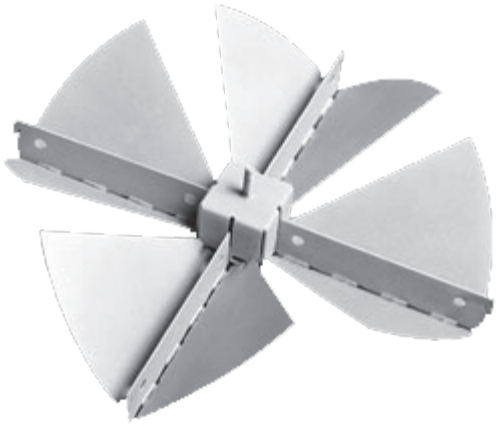
**Architect:**

**Contractor:**

# SUBMITTAL

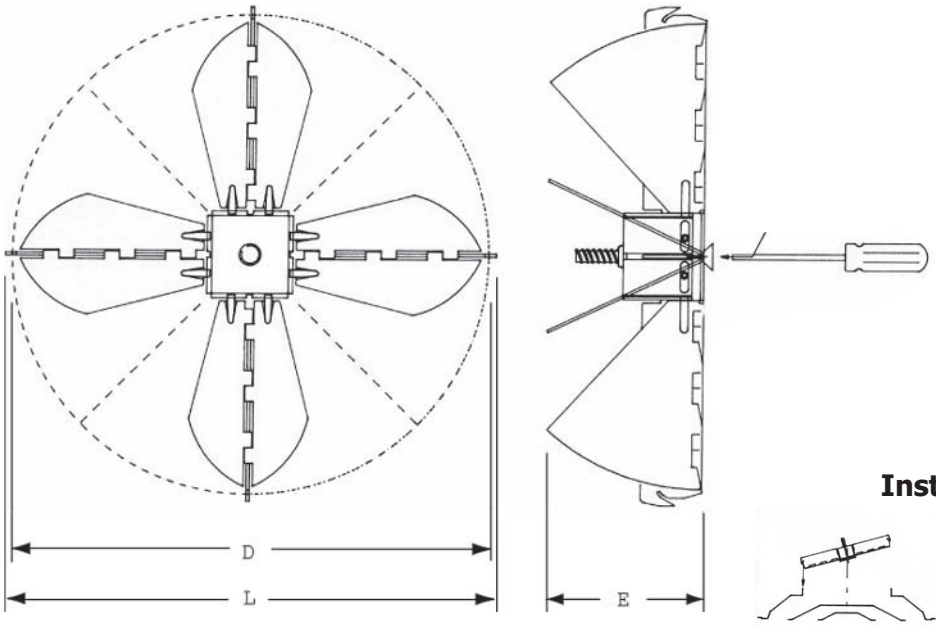
**OBD** REV 1

## OBD Series
## Radial Opposed Blade Dampers



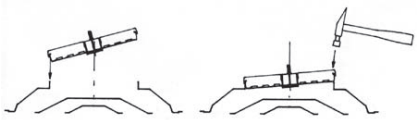
**Material |** heavy gauge galvanized steel.

**Matching Products |** DCG 6" and 12", TWIST 6", 8", 10" and 12".




Vertical operator accepts standard screwdriver for slotted or hex head thru diffuser face.

**Installation**



| Select Model | | | | |
|---|---|---|---|---|
| ✓ | **Model** | **L** | **D** | **E** |
| | OBD 06 | 6" | 5 3/4" | 2 3/8" |
| | OBD 08 | 8" | 7 3/4" | 3 1/8" |
| | OBD 10 | 10" | 9 3/4" | 3 3/4" |
| | OBD 12 | 12" | 11 3/4" | 4 1/2" |

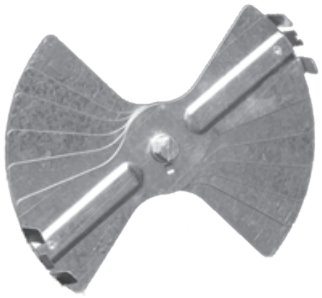
**Project:**

**Engineer:**

**Architect:**

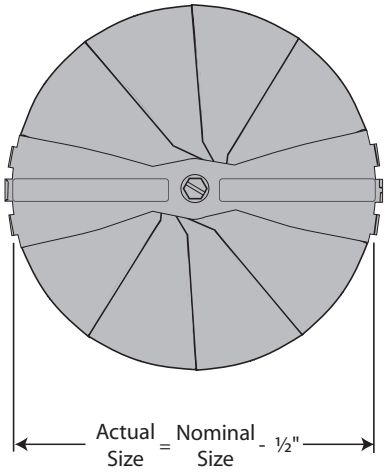
**Contractor:**

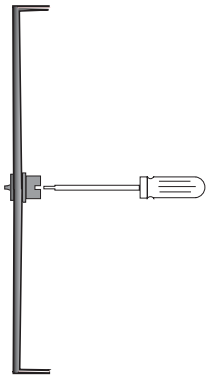
# RSBD Series
## Radial Sliding Blade Dampers



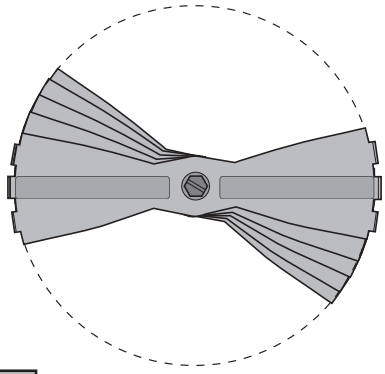
**Material |** heavy gauge galvanized steel.

**Matching Products |** DCG 6″ and 12″, TWIST 6″, 8″, 10″ and 12″.



Vertical operator accepts standard screwdriver for slotted or hex head thru diffuser face.



| Select Model | | |
|---|---|---|
| ✓ | **Model** | **L** |
| | RSBD 06 | 6″ |
| | RSBD 08 | 8″ |
| | RSBD 10 | 10″ |
| | RSBD 12 | 12″ |

**Project:**

**Engineer:**

**Architect:**

**Contractor:**

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