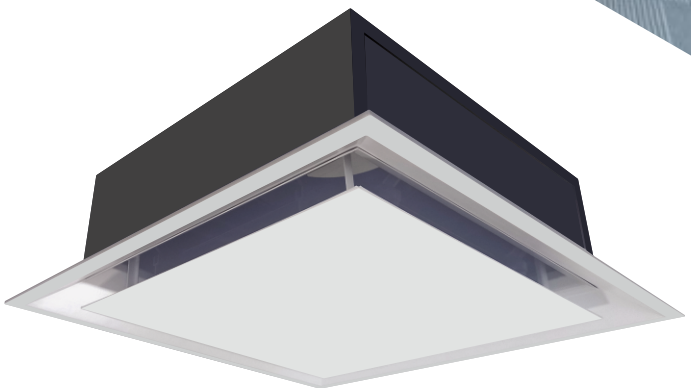
COSMOS®
Air Distribution Products

Powered By **Technology**
Driven By **Innovation**

Air Distribution Products



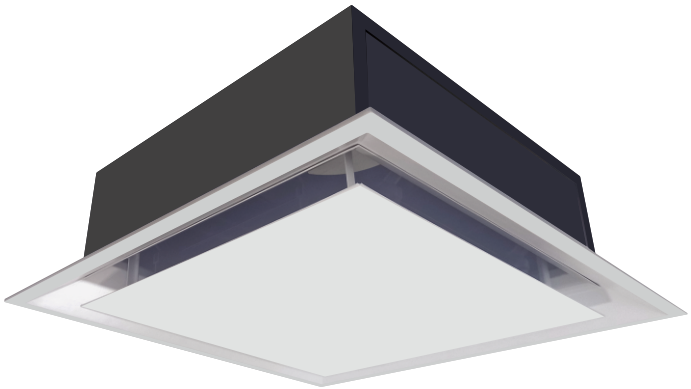
Dynamic Diffuser

SYAMANTAK INDUSTRIES PVT LTD.

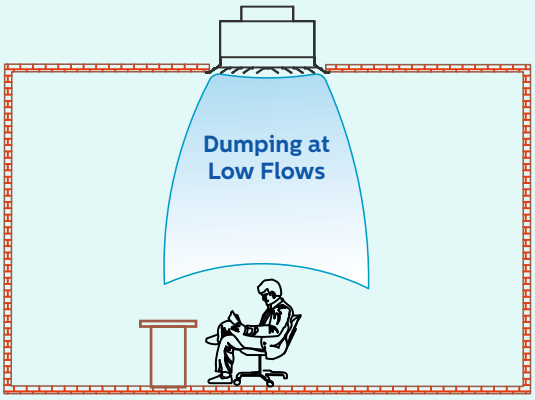
A Wide Range of High Quality Air Distribution Products.

www.cosmosadp.com

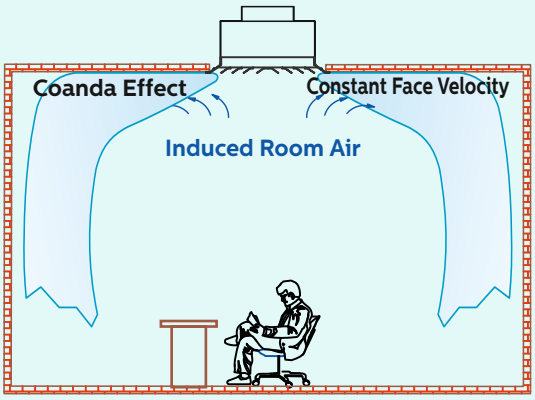
Dynamic Diffuser



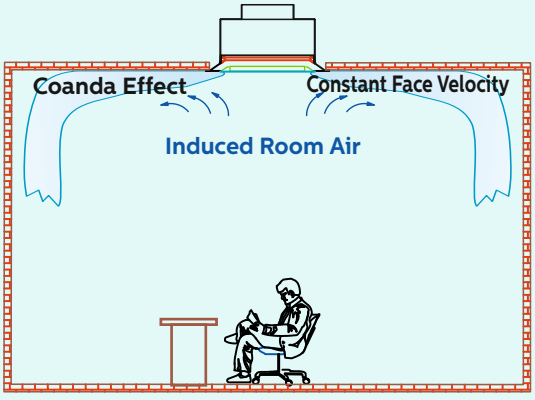
VAV air distribution is the low quality of air diffusion due to high variations in airflow. When designing a system, design engineers select diffusers based on maximum air volume, trying to reach the occupied zone with face velocity required to properly mix the room air while avoiding thermal discomfort. When VAV systems supply lower air volumes, however, the diffusion performance get seriously affected. COSMOS offers "Dynamic Diffuser" with self adjusting mechanism which self-adapt to increased or decreased cfm in order to let the air pass through induction passage with same face velocity, resulting in a more stable performance in VAV applications.



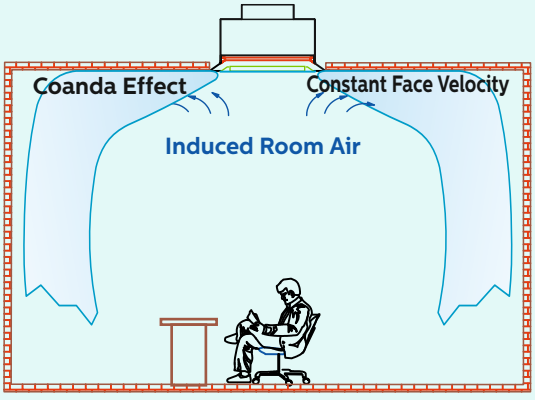
Conventional Diffusers
@ 90 CFM



Conventional Diffusers
@ 500 CGM



Dynamic Diffuser
@ 90 CFM



Dynamic Diffuser
@ 500 CFM

COSMOS
Air Distribution Products

COSMOS Dynamic diffuser with self adjusting cone which self-adapt to increased or decreased air flow rate (CFM) in order to let the air pass through induction passage with same face velocity, resulting in a more stable performance in VAV applications

One of the main problem in variable air flow distribution is the low quality of air diffusion due to high variations in air flow rate. When designing a system, Design engineers select diffusers based on maximum air volume, trying to reach the occupied zone with limited air velocity to properly mix the room air for thermal comfort of the occupants.

In VAV air distribution , VAV starts with 100% design air flow rate needed to achieve the room temperature so initially the air diffusion is perfect with appropriate face velocity (Air leaving the diffuser), it induces the room air , it hugs the ceiling (Coanda effect) and reaches maximum horizontal distance. It is perfect air distribution pattern.

As the room temperature is achieved , the VAV starts throttling the air quantity to maintain room condition. It can go down to 20% of the designed maximum air quantity.

In this situation the diffuser face velocity drops. This stops the induction process mixing of primary air with room air due to weak face velocity & Coanda effect is lost ,air is unable to travel horizontally, so it starts dropping (dumping) below.

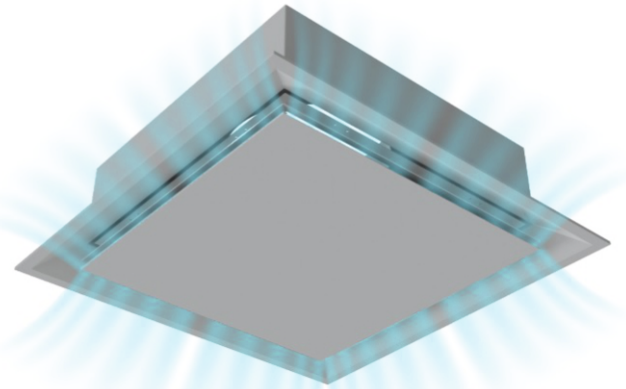
When VAV systems supply lower air volumes, however, the diffusion performance is seriously affected. At lower velocity, cold air tends to drop from the ceiling and hot air tends to stick to the ceiling. Hot and cold spots are created in the room and the air may fail to reach to occupied zone. Occupants comfort are automatically impacted. The lack of air mixing may also increase the concentration of contaminants – CO_2, gases, viruses and other airborne particles – accumulated in the room's air.

Certified for Excellence, Trusted Worldwide !

Dynamic Diffuser

Cosmos's Dynamic Diffuser has its self adjustable mechanism which varies the face opening area based on the variation in air quantity. The cone at the face slot moves up and down to increase or decrease the opening area of slot .For maximum air flow rate slot area is maintain maximum by pushing the cone upward. As the air flow rate is reduced the cone moves to reduce the opening area. This variable position of cone , based on variable supply air flow rate maintains the desired face velocity , needed for perfect air distribution pattern. This adjustment is completely autonomous and doesn't require any configuration , controls nor electricity.

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



Delivers Stable and Uniform
Cooling even at Low Air Volumes

Construction

- Aluminium Construction
- G. I. Plenum Box with Round Inlet
- Self Adjusting mechanism with cone
- Powder Coated Finish

Features

- Self adjusting cone which self adopt to change in supply air volume.
- Higher Insuction ratio & more stable throw at lower air volume.
- Increased thermal comfort & energy efficiency
- Improved ventilation for Indoor Air Quality

Notes

Please contact SALES Team for additional information

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Manufactured By

SYAMANTAK INDUSTRIES PVT LTD.

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