

# Product Information

## Laminar Flow Diffuser Model : LF100

Laminar Flow Diffuser utilizes the well proven and time tested concept of vertical air mass 'laminar flow' technology. They produce a non aspirating low velocity, uniformly distributed downward moving 'piston' of conditioned air. They may be used individually or as in the case of hospital rooms, several units may be banked together to sufficiently cover the area and produce one combined laminar mass.



## Application

Caryaire laminar flow diffusers have been designed for use in clean rooms, laboratories, operating theaters, or other applications where critical control of room air movement is necessary. They are also suitable for less critical applications such as kitchens where vertical air flow pattern may be required.

Laminar air flow pattern is achieved by using a damper disc within the plenum chamber and a low free area perforated discharge plate at the face of the diffuser . The units are available in three standard sizes with top entry inlet spigots and screw operated louver dampers.

Standard Finish laminar flow diffusers are the industry standard for unidirectional flow. When unidirectional flow is desired, typically in areas classified as ISO 1 to 5, these diffusers can be used to create clean zones by positioning the diffuser directly over the area to be washed with clean air. Clean zones are typically used as process areas within a clean room. Diffusers are also used in most operating rooms as the center diffuser and many times these diffusers are surrounded by a linear air curtain. The vertical piston of air is used to discharge clean air over the patient during surgery or surgical procedures. Unidirectional flow minimizes air induction, reducing the opportunity for contaminated air to be re-entrained and pollute a clean airstream. Laminar flow diffuser generates low velocity downward moving "piston" of conditioned air. Installed over the operating table in a hospital operating room, it helps protect the patient from contaminated room secondary air. The only appreciable amount of room air entrainment occurs at the boundaries of the moving air mass, outside the confines of the operating table. As a result, the patient is effectively isolated from residual room air.

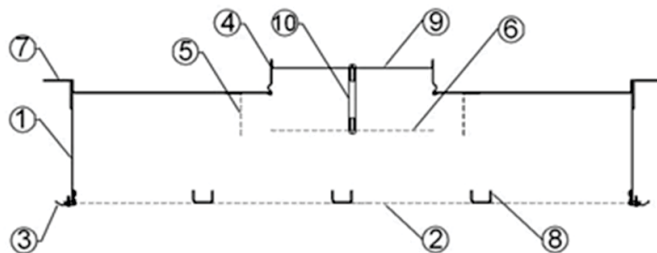
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## Features

- Laminar flow diffuser generates a low velocity, evenly distributed, downward moving "piston" of conditioned air
- Helps to protect patients from contaminated air.
- Internal baffles distribute air evenly over perforated Face,
- Removable faceplate for easy maintenance.
- Face plate and frame with durable powder Coating.
- Ideal for installation in hospital operating rooms.
- Retainer cables prevent the perforated face from falling after removal.
- Compatible with 1" or 1½" T-bar ceiling grids.

## Model – LF- 100 Available Sizes

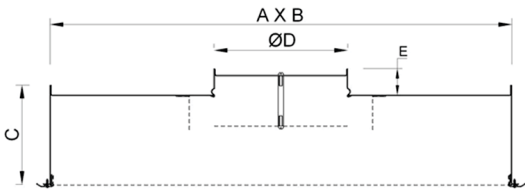
- 1) (600x600)
- 2) (900x600)
- 3) (1200x600)



Construction Detail			
Code	Item Name	Description	Qty
1	Plenum	1.0mm Aluminium	1
2	Perforated face	1.2mm Aluminium/SS 304	1
3	Frame	1.0mm Aluminium	1
4	Spigot	1.0mm Aluminium	1
5	Deflector ring	1.2mm Aluminium/SS 304	1
6	Damper disc	1.2mm Aluminium/SS 304	1
7	GI hanger	1.6mm GI	4
8	GI channel	1.6mm GI	As req
9	GI strip	1.6mm GI	1
10	screw	8M x 150mm	1

The Standard finish is Powder Coated in Caryaire White (CW) or Caryaire Off-white (CW).

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DIMENSION TABLE				
Model LF-100	Size AXB (mm)	C	Ø D	E
	600X600	200	200	40
	900X600	200	250	40
	1200X600	200	300	40

DATA TABLE												
AIR FLOW RATE (L/S)?	20	30	40	50	60	80	100	120	140	160	180	200
UNIT SIZE ?	FACE AIR VELOCITY (mt./sec.)											
600X600 mm	0.05	0.1	0.13	0.17	0.21	0.3	0.37					
900X600 mm	-	0.05	0.07	0.1	0.13	0.18	0.24	0.3				
1200X600 mm				0.05	0.06	0.11	0.15	0.19	0.24	0.28	0.32	0.37
	STATIC PRESSURE LOSS (Pa)											
600X600	1	1	1	2	2	4	5	-				
900X600	1	1	1	2	2	4	5	7	-			
1200X600			-	1	1	1	2	2	3	3	4	4
	NOISE LEVEL(dBA)											
600X600			-	<20	20	24	28					
900X600				-	<20	23	27	30				
1200X600										-	<20	20

## Suggested specification

Furnish and install Caryaire model LF-100 Laminar flow Diffuser in Hospital Operating Room. Air Systems or other applications of the size and type shown on the plans and air distribution schedules.

The system shall be specially designed to reduce airborne contaminants, and thus, the risk of patient infection during surgery. The perforated face of the diffuser shall have 13% free area. The face shall be attached with fasteners to allow for complete removal and access to the interior for cleaning.

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All diffusers are to include safety cables to prevent accidental dropping of the removable face. A disc type damper shall be provided with all units. A butterfly damper shall be provided with all diffusers. All external surfaces will be Caryaire white or off-white powder coated.

**Laminar Flow Diffuser shall be in all respects same as Caryaire Model LF100**