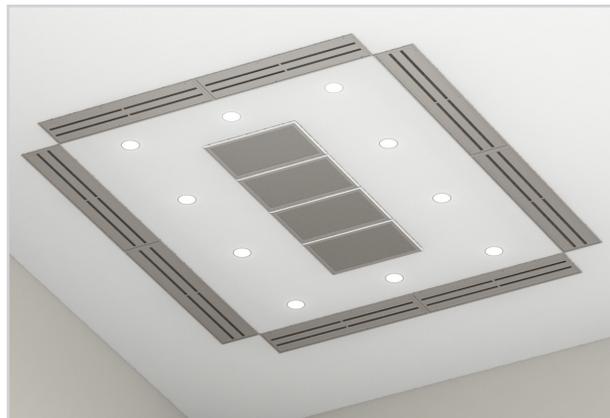


SteriTec

- Perforated pressure induction plate facilitates balancing
- Blades have minimum adjustability to allow precise control of the air curtain angle
- 2-slot or 1-slot configurations available
- May be mounted as surface mount or T-bar lay-in with support
- Available in square sizes from 8 x 8 feet through 20 x 20 feet as listed below. Rectangular sizes are also available.
- Other custom sizes are available
- Perimeter air curtain for creating an air wall between clean zones and adjacent area
- Face quickly removes for easy plenum access



STERITEC



hospitals

surgical

MODELS:

SteriTec-AL / Aluminum
SteriTec-SS / 304 Stainless Steel

FINISHES:

Standard Finish - #26 White
Optional Finish - #04 Mill

OVERVIEW

Sterile Environment System Technology

According to ASHRAE Standard 170-2013 for hospital operating rooms, the laminar flow diffusers should be selected for an average velocity not to exceed 35 fpm at the operating table. This is about equal to the normal plume velocity emitted from the human body. This velocity can be calculated by taking airflow from the laminar flow diffusers and dividing this flow by the nominal face area of the diffusers. The size of the laminar flow field or many times called the "sterile field," should be at least the size of the operating table plus an additional area of 12 inches around the table. This is the absolute minimum size. However, many times additional equipment and tables are required and also need to be included in this sterile field. The sterile field should protect the patient and provide non-contaminated airflow protection for the patient, all equipment and personnel being used for the patient.

The terminal velocity of the laminar flow on the patient should not be greater than the plume velocity created by the normal human body at rest. This limitation is meant to stop the laminar flow from driving contamination into open wounds during surgery the plume velocity is approximately 25-35 fpm.

Ceiling area can be allowed in the sterile field for lighting and related services. Data has shown that if an air wall or air curtain like the SteriTec is used, room airflow entrainment is drastically reduced into



See website for Specifications

the laminar flow sterile field with as much as 30% of the sterile field used for related services. Tests, conducted at the Titus laboratory, have shown the importance of this air wall or air curtain. If an air curtain is not used as shown for both a side view and a plan view contamination can and will be induced into the center of the sterile field. The migration of contamination has also been observed if the laminar diffusers are continuous over the operating room table and an air curtain has not been used. As shown, the inside edge of the SteriTec system air wall or air curtain should be mounted 18 to 30 inches outside the TLF generated nominal sterile field. The total airflow requirement varies with the room size. The required minimum airflow is 20 air changes per hour for operating rooms.

The side view of the SteriTec air curtain shows how this system stops room airflow induction into the laminar flow field at two very important locations. The first location is next to the ceiling. If the laminar flow is not continuous, and many times this is not the case due to lighting and gas columns etc., the air wall stops the induction along the ceiling line from being drawn into the laminar flow. The openings in the field can provide a material pathway for airflow to flow into the openings between the laminar flow diffusers. This then can allow secondary room airflow to flow into these areas which may be contaminated. The second area of protection is seen further down in the room. The SteriTec air curtain provides an invisible barrier or wall to reduce room air from being mixed with the pure filtered clean laminar flow from the TLF diffusers.

Contaminated air outside the air curtain is prevented from entraining or being mixed with the clean zone created and inside the LineaTec diffusers zone. In most applications the LineaTec diffusers of the SteriTec system are selected for a terminal velocity of 50 fpm about 2 Feet above the floor. This allows the flow to travel down to and along the floor to the external low sidewall exhaust return grilles.

The SteriTec system combines the features of the TLF and the LineaTec to form a clean zone within a cleanroom. A typical SteriTec system for an operating room includes a LineaTec perimeter air curtain and with TLF laminar flow TLF diffusers as the central supply air outlets. Return grilles are located at the low level sidewall as exhaust outlets on at least two of the room's walls. These are typically mounted so the lower portion of the grille frame is about 8 inches above the floor to allow cleaning of the room's floor.

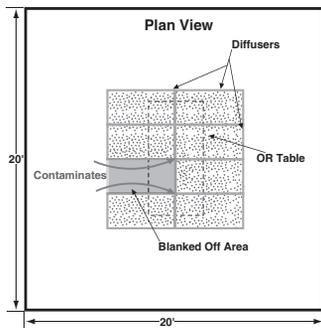
ADVANTAGES

- Available with optional 304 stainless steel or aluminum plenums
- Corner transitions are full plenum size creating no airflow restriction
- Available with round corners on plenums ($7/8$ " radius)
- Continuous plenums minimize duct runs and facilitates self balancing
- Typical linear selection for 50 fpm terminal velocity 2 feet above floor

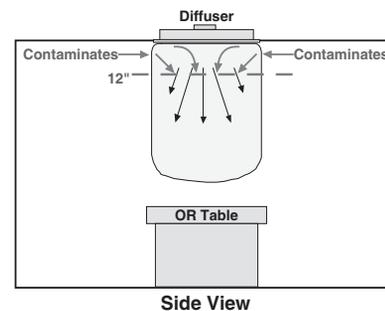
Nominal Sizes ft. "A" x "B"	Laminar Flow No. of Units & Sizes Units @ 30cfm/ft ²		Linear Diffuser No. of Sections		Total		
			Side A	Side B	Laminar Flow cfm	LineaTec @ 40 cfm/ft cfm	cfm
8' x 8'	6-3x2	1080	2	2	1080	1280	2360
10' x 10'	8-2x4	1920	2	2	1,920	1,600	3,520
12' x 12'	8-2x4	1920	2	2	1,920	1,920	3,840
14' x 14'	10-2x4 2-2x6	3120	2	2	3,120	2,240	5,360
16' x 16'	10-2x4 2-2x6	3120	3	3	3,120	2,560	5,680
18' x 18'	18-2x4	4320	3	3	4,320	2,380	7,200
20' x 20'	32-2x4	7680	4	4	7,680	3,200	10,880

Note: Please check with your Titus representative before specifying sizes other than those listed above. Rectangular sizes are available.

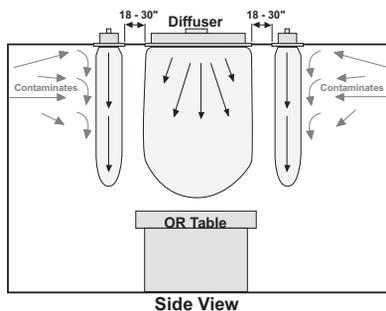
No Air Curtain - Contamination - Not Blocked At Ceiling



Laminar Flow With No Air Curtain



Laminar Flow With Air Curtain



Air Curtain With Non-continuous Laminar Flow - Contamination Blocked

