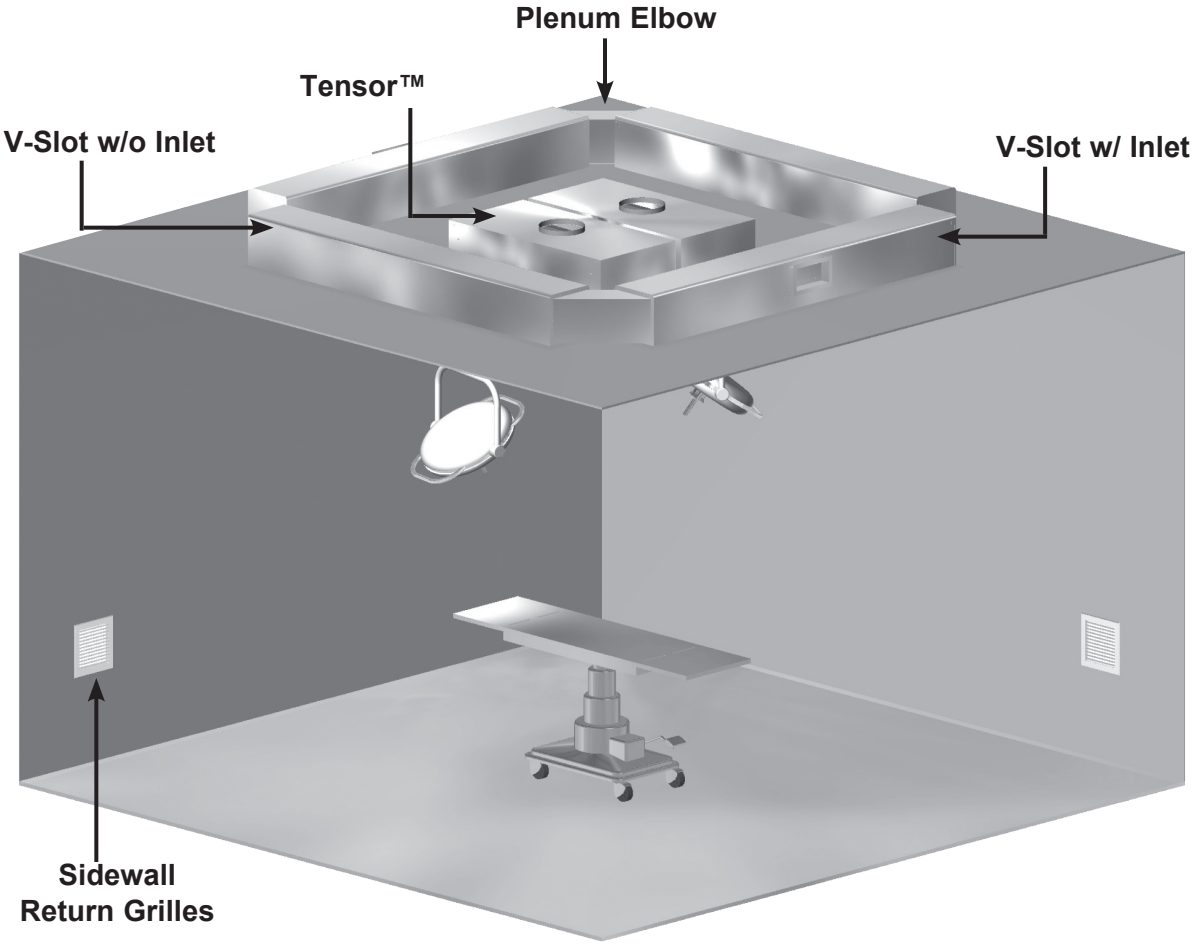
SYSTEM COMPONENTS

ISOTEK



System Components:

V-Slot: Linear slot provides the perimeter air curtain. The V-Slot is available in stainless steel construction. Optional elbows for the plenums accommodate operating room designs and reduce number of inlets required.

Tensor: Laminar flow diffusers are mounted in the center of the system. Placement is versatile and can accommodate surgical lights and other required equipment.

T70DSS, T80DSS: Stainless steel return grilles are placed at low levels in the room. The returns are available in multiple sizes to accommodate the engineer's design.
(Optional A70D, A80D aluminum return grilles are also available).

Required Design Criteria:
- Room Size
- Total CFM or required air changes rate (ASHRAE recommends that operating rooms have no less than 20 air changes per hour)

Selection Example:
Room Size: 20'x20'x9' high
CFM = 2200

1. Calculate the air changes per hour to ensure that the given specifications will fall within ASHRAE recommended guidelines for operating rooms of a minimum of 20 air changes per hour.

Room Volume = 20×20×9=3600 ft^3

Air Changes Per Hour = (Total CFM×60 minutes)/Room Volume
= (2200×60 minutes)/3600ft^3
= 37 air changes per hour (which is above the 20 air changes per hour minimum)

2. Referencing the performance chart on page 4, 2200 falls outside the given range for the 8x8, 12x6 and 14x14 systems. Tuttle and Bailey recommends that the system operate with a minimum of 25 CFM per linear foot and a maximum of 45 CFM per linear foot. The CFM per linear foot for the perimeter and the CFM per square foot for the center panels should be approximately the same. The best designs generally fall midrange from 33-37 CFM per linear foot which allows the system to accommodate unexpected design changes in supply airflow on both the high and low ends. To calculate the CFM per linear foot, use the following:

   a. The perimeter of the system should accommodate roughly two thirds of the total CFM with the center panels accommodating the other third.
   b. Perimeter CFM = 2000×0.65 = 1300 CFM
   Center Panel CFM = 2000×0.35 = 700 CFM
   For each system, you can then calculate the CFM per linear foot for the perimeter by dividing the Perimeter CFM by the Total perimeter length. The CFM per square foot for the center panels is calculated by dividing the Center Panel CFM by the total center panel area.

System Perimeter (ft.)	Total Perimeter (ft.)	CFM/Linear Foot Using Given CFM	Number of Center Panels	Center Panel Size (ft.)	Center Panel Area ($ft.^2$)	CFM/Square Foot Using Given CFM
10x10	40	36	4	(2) 4x2, (2) 2x2	24	32
12x8	40	36	4	(2) 4x2, (2) 2x2	24	32
12x12	48	30	4	(2) 4x2, (2) 2x2	24	32
14x10	48	30	4	(2) 4x2, (2) 2x2	24	32

   c. As shown in the previous chart, each of the systems would accommodate the 2200 CFM given. Since the 36 CFM per linear foot is in the midrange, the 10x10 or 12x8 system would be the best choice. Room design and operating room layout may need to be considered at this point to see whether the square or rectangular system is better suited. Contact sales office for quantity and sizing of inlets.

For system sizes and the airflows not shown, please contact the sales office for sizing.