
CLEANSUITE® Operating Room Ceiling System

Modular, Fully-Integrated Diffuser System For Low Turbulence, Laminar Flow Applications



Leaders in Airflow Management

CLEANSUITE

Creating a cleaner operating room (OR) environment for patients

The Cost of Surgical Site Infections (SSIs)

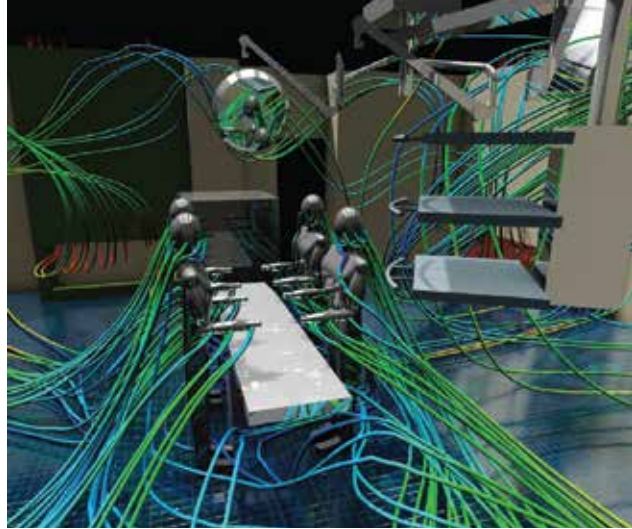
- SSIs have been reported in literature to occur in two out of every 100 surgeries in the United States (Klevens, et. al., Public Health Reports—Volume 122).
- In the 2009 U.S. Department of Health and Human Services (HHS) *Action Plan to Prevent Healthcare Associated Infections*, it is estimated that there are more than 290,000 SSI incidences annually, resulting in 13,000 deaths and a treatment cost of \$7.4 billion.
- According to the HHS Action Plan, in 2008 Medicare stopped reimbursing healthcare providers for treating preventable Healthcare Acquired Infections (HAIs), including SSIs, to encourage facilities to focus on prevention over treatment.
- Prominent healthcare organizations, including HHS, the CDC and most public and private healthcare organizations, have programs and initiatives to reduce HAIs and SSIs.
- ASHRAE guidelines that apply to these facilities and their operations help address these very important issues. The purpose of ASHRAE Standard 170-2008 is to define the ventilation system's design and analytical performance requirements that provide environmental control for comfort, asepsis, and odor in health care facilities.

Technology Exists to Create a Cleaner OR for Patients

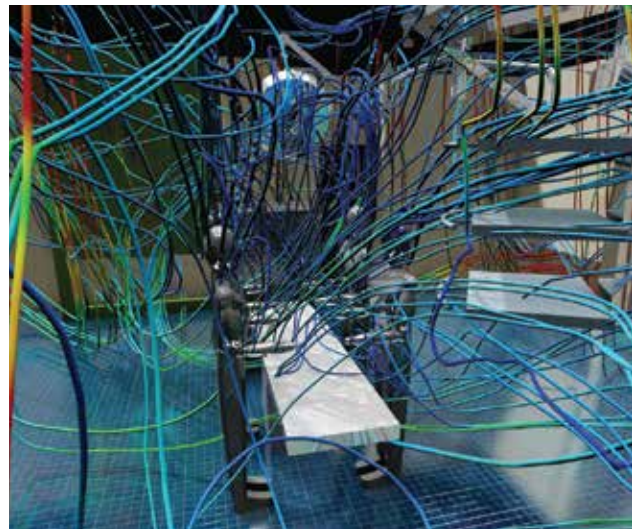
The HUNTAIR® CLEANSUITE system exceeds ASHRAE Standard 170 requirements by providing an all-inclusive, modular ceiling diffuser system, marketed to hospitals as fixtures that may be built into the facility and hung directly above the patient table in an OR and other facility locations requiring low turbulence, laminar airflow. CLEANSUITE systems direct airborne particles and contaminants away from the area of the patient on the operating table, bathing the patient in HEPA-filtered air, while at the same time preventing entrainment of room air surrounding doctors, nurses and OR equipment. Ultimately, airborne particles and contaminants are directed away through low level returns.

CLEANSUITE systems evolved from manufacturing environments for semiconductors, pharmaceuticals and other sensitive products where particulate levels are strictly controlled by Federal and industry standards. Currently, ASHRAE Standard 170 includes airflow requirements, but does not address specific particulate contaminant levels in the space. An ISO Class 1 cleanroom, by contrast, is required to maintain particulate levels at less than one 0.5 micron sized particle per cubic meter of space. CLEANSUITE systems can help you bridge this gap and create a cleaner environment that exceeds ASHRAE Standard 170 requirements using proven technology and design practices from thousands of operating Huntair cleanroom applications worldwide.

How Laminar is the Airflow in Your OR Ceiling System?



The CLEANSUITE Single Large Diffuser (SLD) design maximizes the surface area from which HEPA-filtered laminar airflow is being delivered. The resulting uniform, directional airflow blankets the patient and sweeps across doctors, nurses and OR equipment to direct airborne contaminants. In practice, the SLD laminar airflow design principle has been used for more than 30 years in semiconductor and other sensitive manufacturing environments.



ASHRAE Standard 170 recommends the use of laminar airflow to effectively control airborne contaminants in ORs. While the Standard requires that diffusers extend 12 inches beyond the operating table on all sides, it also allows for significant gaps in airflow delivery above the patient (<30%). The divergent laminar airflow from multiple diffusers surrounding these gaps generates turbulence, resulting in the unpredictable movement of potentially harmful contaminants in the area of the patient, doctors and nurses.

CLEANSUITE

Creating the most efficient and effective ORs

CLEANSUITE is a custom, modular system designed for your specific OR requirements. For a free preliminary layout of your OR ceiling system, contact your local Huntair Representative.

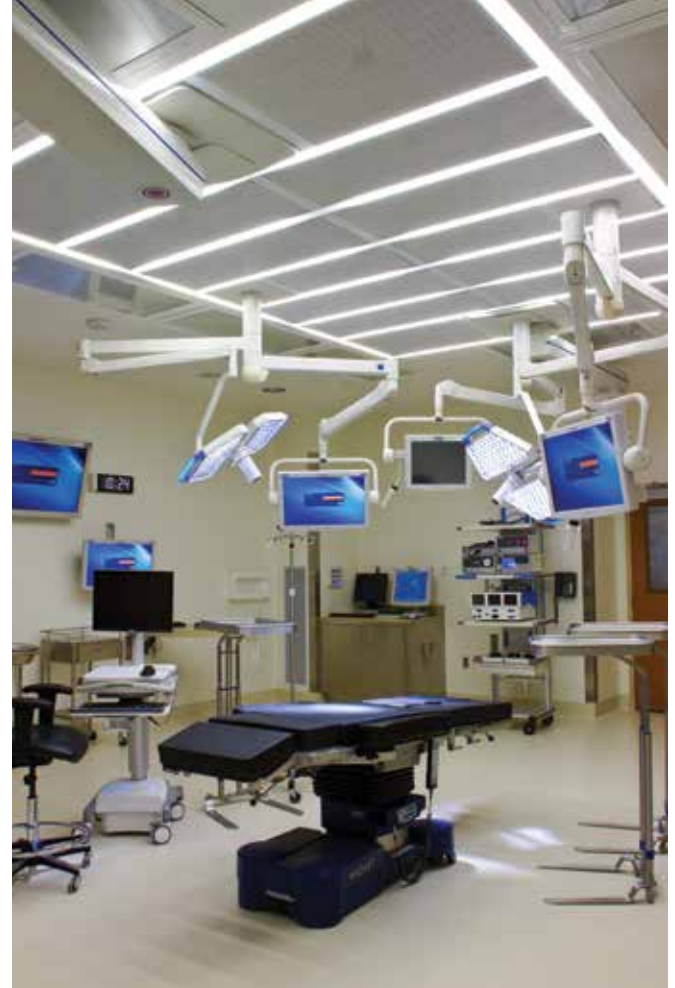


Reduced Design and Installation Risk

- Modular, all-inclusive system centralizes the design and installation of all services and components in the ceiling system – including electrical, integral lighting, plumbing, med-gas, boom mounts, diffuser screens, filters, duct connections and optional accessories.
- Reduces timeline for design changes and approvals.
- Provides full visibility to connection points for all services prior to installation.
- Reduces exposure to jobsite change orders.
- Manufactured by Huntair in a controlled environment to stringent quality standards.
- Comes complete with all structural calculations and certifications.
- Dramatically reduces on-site coordination of trades during installation.
- Adding Huntair air handlers and controls to CLEANSUITE system provides a fully integrated solution for OR airflow, temperature, humidity, acoustics and vibration levels.

Reduced Exposure to Lost Revenue During and After Installation

- Installs in 1/6 the time of conventional stick-built ceiling systems to help provide a faster track to a revenue-generating OR.
- Integrated flush lighting allows for fast sterile wipe-down.

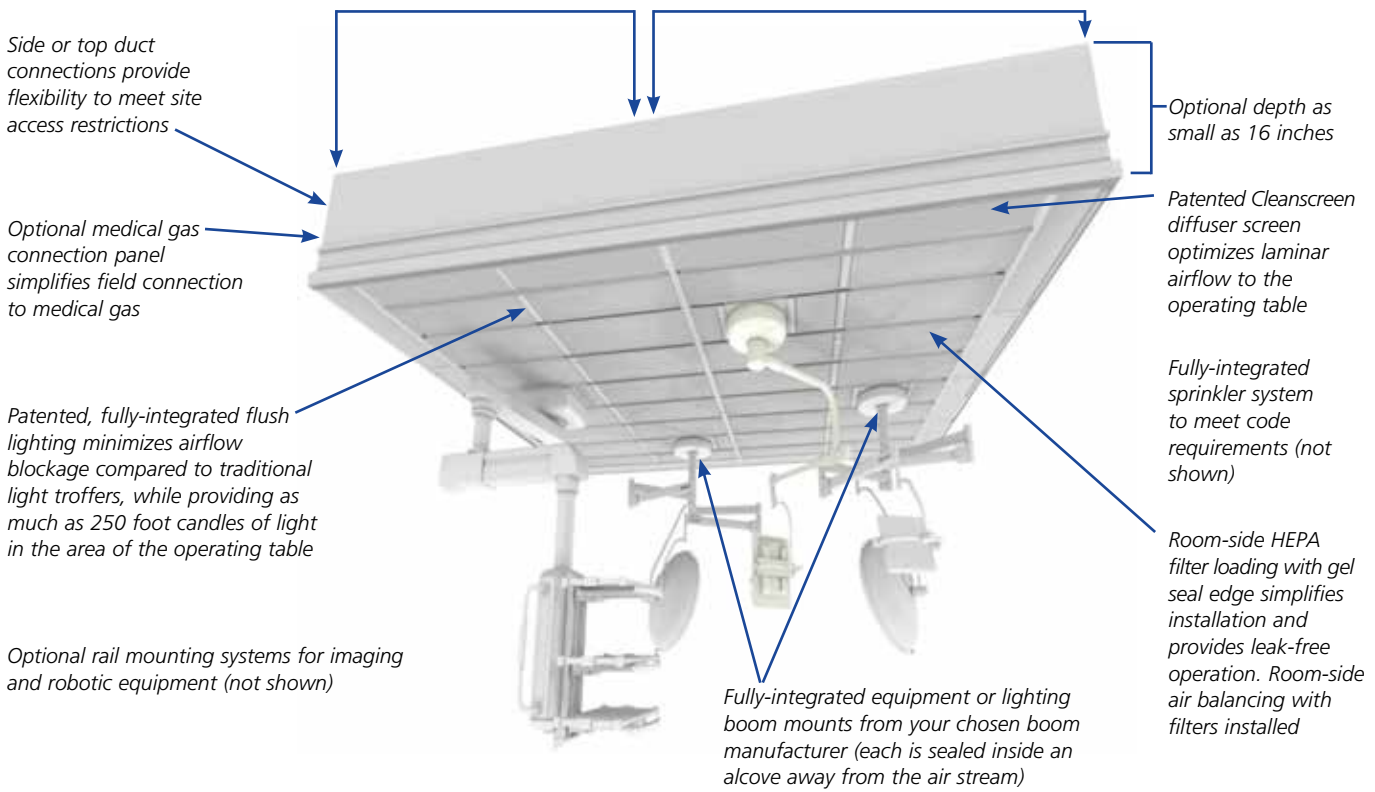


A Better Environment for Doctors, Nurses and Other OR Personnel

- Effectively directs airborne contaminants away from OR personnel present during surgery.
- Unsurpassed flexibility in equipment and lighting boom placement for improved ergonomics.
- Integrated flush lighting creates a uniform brightness over the patient area.
- Optional dimmable lighting gives surgeon control over lighting levels.
- Optional 550nm Green light lowers surgeon eye fatigue.
- Optional integrated controller can allow OR personnel to customize environment for optimum comfort.
- Optional integrated speaker system for the music lover!

Customized To Meet Your Requirements

Modules fit through a 3-foot doorway and are connected to the building structure at each corner with a bolt



Hybrid Cath Lab
Springfield, MO



Hybrid Imaging System
Plano, TX



Standard System
Phoenix, AZ



Hybrid Cath Lab
Springfield, OR

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Huntair has a policy of continuous product improvement and reserves the right to change design and specifications without notice.

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HUNT-CS-SB-1B
August 2013

