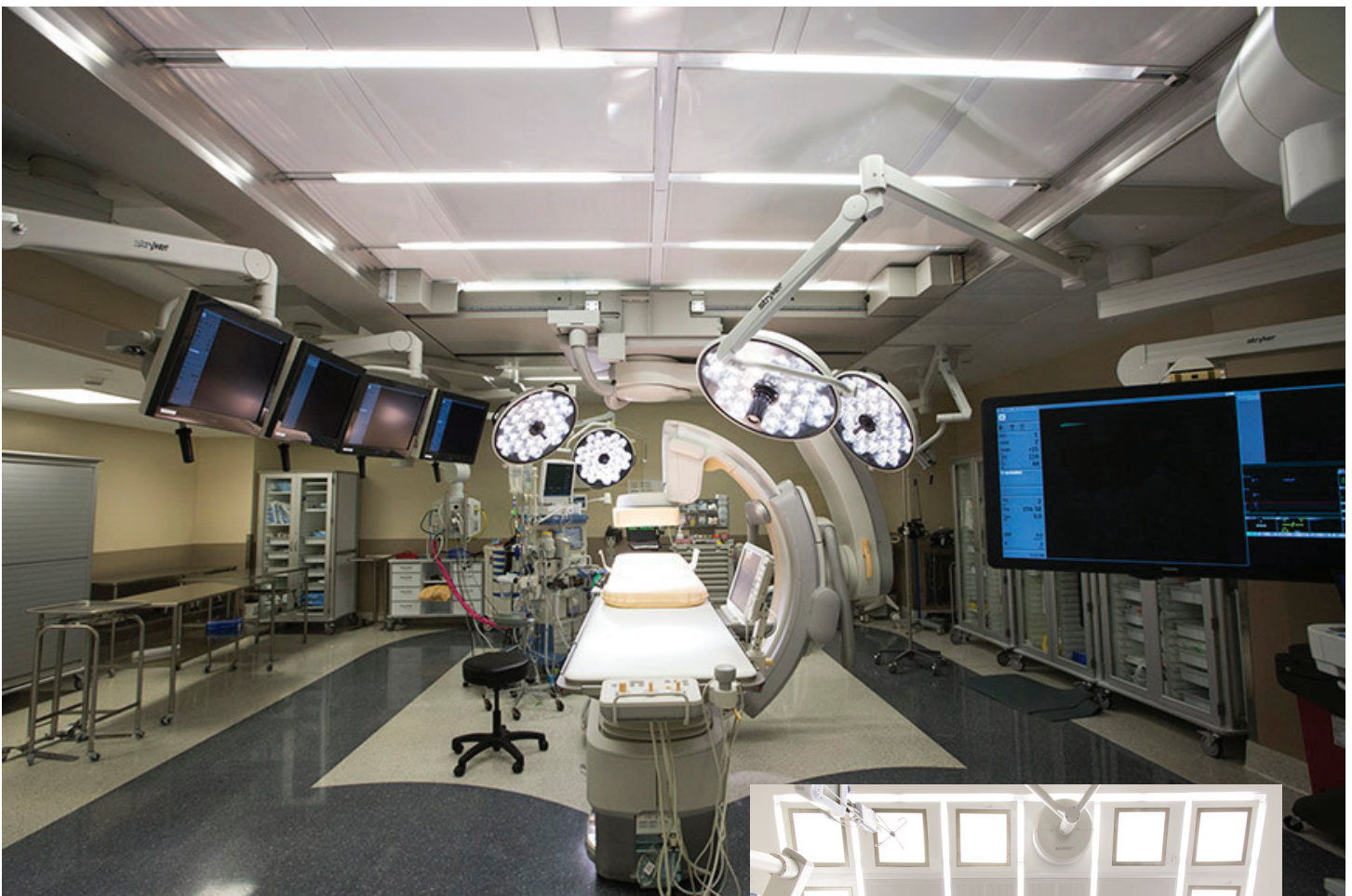


## **CLEANSUITE<sup>®</sup> Operating Room Ceiling System**

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



# CLEANSUITE Operating Room Ceiling System

CLEANSUITE is a modular, all-inclusive ceiling system that centralizes the design and installation of all services and components into one package. CLEANSUITE exceeds ASHRAE Standard 170 through its proven technology and design practices. CLEANSUITE is more than an air delivery system—it also provides a structural design to allow multiple boom connection points along with all architectural and MEP aspects necessary, making this a completely integrated system.

## Structural

- Integrated boom and imaging rail mounting
- Internal and external truss systems to support various mount locations
- Fully welded modules serve as moment frame
- Welded ceiling grid

## Architectural & MEP

- Grid channel lighting over bed
- Electrical connection hookup
- Med-gas routing
- Integrated fire protection (optional)
- Touch screen control panels (optional)
- Sound system recessed in grid channel (optional)

## Air Delivery

- Single large diffuser
- Cleanroom technology for unidirectional airflow
- Equalizer balancing dampers
- Gel seal filters (optional)
- CleanScreen™ high performance diffuser grilles



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.

## An Evolution of Cleanroom Design

The Huntair® CLEANSUITE operating room system evolved from more than 30 years of experience manufacturing environments for semiconductors, pharmaceuticals and other sensitive products where particulate levels are strictly controlled by Federal and industry standards. Because of this, Huntair engineers were able to develop a surgical ceiling system that exceeds ASHRAE Standard 170, creating a cleaner and safer environment.



# CLEANSUITE System Benefits

## For Patients, Operating Room Personnel and Facility Staff

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 the personnel and OR equipment. As a result, airborne particles and contaminants are directed away through low level returns.



### Operating Room Personnel Benefits

- Effectively directs airborne contaminants away from OR personnel during surgery
- Unsurpassed flexibility in equipment and lighting boom placement for improved ergonomics
- Integrated flush lighting creates a uniform brightness over the patient area
- Dimmable lighting gives surgeon control over lighting levels (optional)
- 550nm green light lowers surgeon eye fatigue (optional)
- Integrated controller can provide a customized environment for optimum comfort (optional)
- Integrated speaker system for the music lover! (optional)

### Facility Maintenance Benefits

- Room-side replaceable HEPA-filtration
- Room-side adjustable equalizer dampers
- Single point supply air connection
- Single point lighting electrical and control connections
- Flush lighting allows for fast sterile wipe-down
- Walkable ceilings
- Access panels
- Factory acceptance tests (optional)

## Design, Installation and Cost Advantages

Considering the design, installation and cost savings of a CLEANSUITE System for your OR, the multiple advantages to your bottom line are clear.

### Centralized Design

- Simplifies the process by providing a single point-source
- Full visibility of connection points for all services, prior to installation
- Reduces timeline for design changes and approvals
- Manufactured in a controlled environment to stringent quality standards
- Complete with all structural calculations and certifications

### Fast Installation

- Installs six times faster when comparing conventional stick-built ceiling systems
- Modules fit through standard 3-foot doorway
- Dramatically reduces on-site coordination of trades



**CLEANSUITE modules conveniently fit through a 3-ft doorway and are connected to the building structure at each corner.**

### Cost Savings

- Speed of install allows a faster track to a revenue-generating OR
- Reduces risk of costly jobsite change orders
- Low cost of ownership

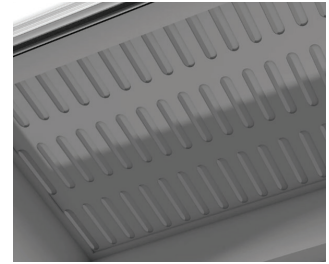
# CLEANSUITE System Features and Options

## Standard Features

- Single point supply air connection
- Single point lighting electrical and control connections
- CleanScreen™ diffusers
- Equalizer dampers
- Integral LED lighting connections
- Module anchoring locations



CleanScreen Diffuser



Equalizer Damper



Integral LED Lighting



Single Point Supply  
Air Connection



Single Point Lighting Electrical  
and Control Connections



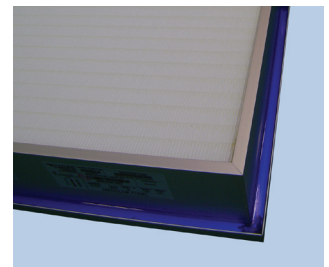
Module Anchoring Locations  
(optional locations available)

## Options/Accessories

- Equipment/lighting boom mounts
- Imaging rail hookup
- LED light troffer
- Gel seal HEPA filters (bottom load)
- Hinged access panels
- Touch screen control panel
- Audio system components



Equipment/Lighting Boom Mounts



Gel Seal HEPA Filters  
(bottom load)



Hinged (Non-hinged)  
Access Panels



LED Light Troffer



Audio System Components



Touch Screen Control Panels

## Standard or Hybrid Models Available



Standard OR System in Phoenix, Arizona



Standard OR System in New York, New York



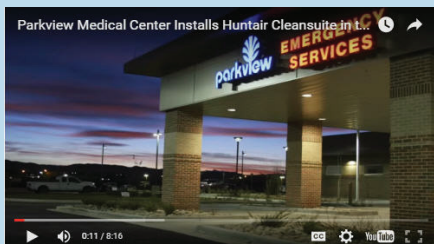
Hybrid OR System in Springfield, Missouri



Hybrid OR System in Springfield, Oregon

## See CLEANSUITE Systems on the Job

To learn more about the installation ease and other advantages of the CLEANSUITE operating room system, watch any of our videos—two of them filmed on location during installations at real hospitals—which can be viewed on the Nortek Air Solutions channel on YouTube.



Parkview Medical Center Case Study

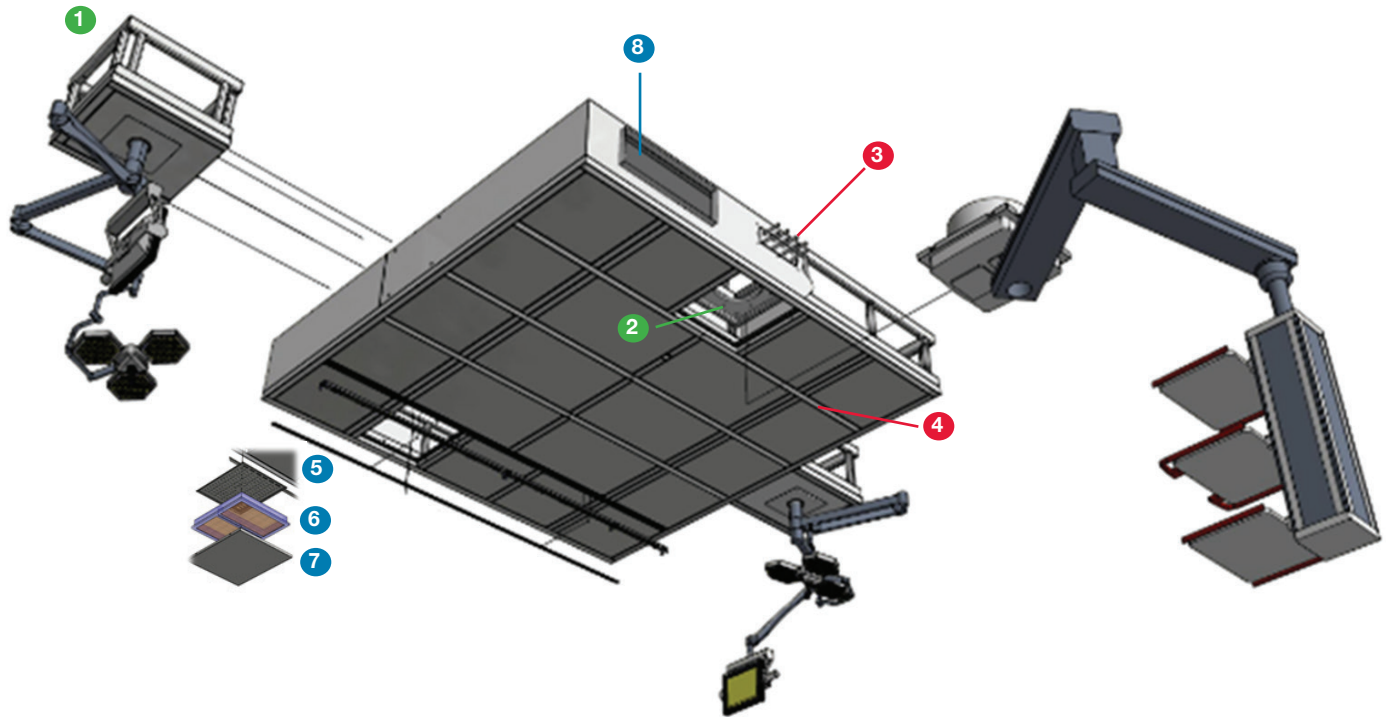


CLEANSUITE Installation Demonstration



CLEANSUITE Features and Benefits

# Standard Operating Room System



Modules fit through a 3-foot doorway and are connected to the building structure at each corner. Optional depths as small as 16 inches.

## Structural

- 1 Fixed boom mounts give the customer the flexibility to choose the location.
- 2 Fully-integrated equipment or lighting boom mounts from your chosen boom manufacturer (each is sealed inside an alcove away from the air stream)

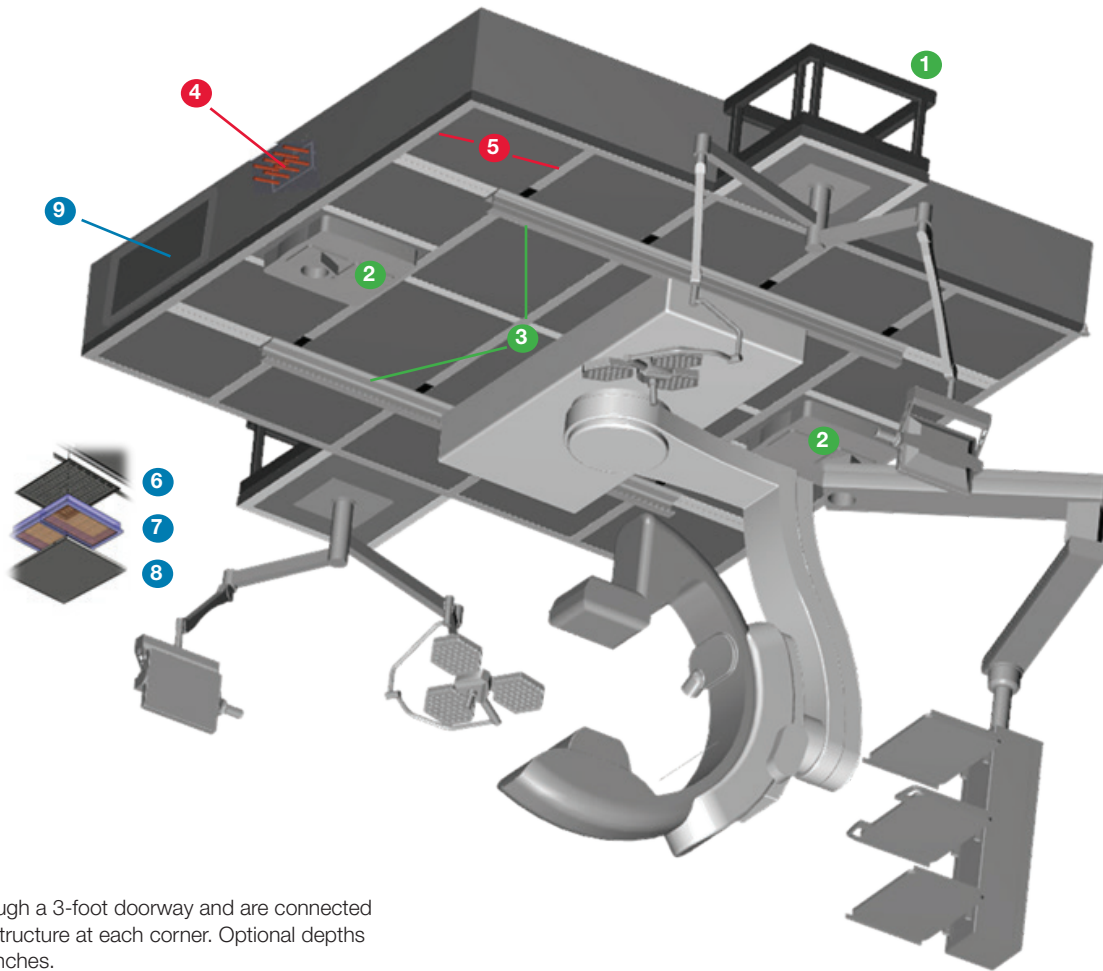
## Architectural / MEP

- 3 Optional medical gas connection panel simplifies field connection to medical gas
- 4 Patented, fully-integrated flush lighting minimizes airflow blockage compared to traditional light troffers, while providing as much as 250 foot candles of light in the area of the operating table

## Air Delivery

- 5 Equalizers balance the airflow and can be adjusted with filters in place
- 6 HEPA filtration
- 7 Patented CleanScreen diffuser screen optimizes laminar airflow to the operating table
- 8 Side or top duct connections provide flexibility to meet site access restrictions

# Hybrid Operating Room System



Modules fit through a 3-foot doorway and are connected to the building structure at each corner. Optional depths as small as 16 inches.

## Structural

- 1 Fixed boom mounts give the customer the flexibility to choose the location.
- 2 Fully-integrated equipment or lighting boom mounts from your chosen boom manufacturer (each is sealed inside an alcove away from the air stream)
- 3 Imaging rail mounts to support imaging equipment

## Architectural / MEP

- 4 Optional medical gas connection panel simplifies field connection to medical gas
- 5 Patented, fully-integrated flush lighting minimizes airflow blockage compared to traditional light troffers, while providing as much as 250 foot candles of light in the area of the operating table

## Air Delivery

- 6 Equalizers balance the airflow and can be adjusted with filters in place
- 7 HEPA filtration
- 8 Patented CleanScreen diffuser screen optimizes laminar airflow to the operating table
- 9 Side or top duct connections provide flexibility to meet site access restrictions

# Nortek Air Solutions

## Experts in Building Environments™

Nortek Air Solutions offers the innovation and expertise of the largest group of custom heating, ventilation, and air conditioning (HVAC) brands in North America for your commercial, industrial, or institutional indoor environment. Our products are custom engineered offering optimal solutions for maximizing energy efficiency, reducing annual operating costs, improving indoor air quality, and achieving low sound levels. We offer high quality systems in multiple shapes, sizes, and configurations for new construction and renovation or retrofit applications.



Commercial Air Handlers



Industrial Air Handlers



Packaged Rooftop Units



Energy Recovery Units



Cleanroom Systems



Modular Pre-engineered Cleanrooms



Operating Room Systems



Vertical Self-Contained Units



Indirect/Direct Evaporative Cooling Units (IDEC)



SuperEvap Computer Room Air Handlers



Modular Data Centers



High Density Computing Cooling Systems



Our patented FANWALL TECHNOLOGY® is available from all air handling product brands to create a fully-integrated and engineered system of state-of-the-art fans, motors, cabinetry, controls, and accessories that can be combined to match new construction and retrofit application requirements. To learn more about Nortek Air Solutions products, contact your local representative.



Large FANWALL® System



FANWALL Smart Cube



FANWALL Cell

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