ensavior
Energy • Environment • Sustainability

SteraShield – Upper Air Room UVGI

A shield of UV beam in the upper section of the room

Suitable for

- Healthcare Sector
- Hospitality Sector
- IT Sector
- Industrial Sector
- Educational Institutions
- Commercial Spaces
- Residential Spaces

UVGI SteraShield

Ultra-Violet Germicidal Irradiation

UVGI is the use of ultra-violet (UV) energy to kill or inactivate microbes (viral, bacterial and fungal species). UV energy attacks the DNA of a living cell, penetrating the cell membrane, breaking the DNA structure of the micro-organism, inhibiting reproduction. UVC is effective in destroying biological contaminants and odors such as mold, bacteria and viruses. UVGI has been used as a supplement to mechanical ventilation to inactivate airborne infectious agents to protect the health of building occupants.

The sun delivers specific UV wavelengths that destroy and deactivate chemical contaminants that are introduced into the atmosphere. Our UV lamp produces the same UV wavelength the sun produces. UVC (Germicidal 254nm) and UVV (Oxidizing 187nm) are produced using quartz glass. UVV (Vacuum UV) is used for oxidization; this is the portion of the lamp that destroys chemicals and odours, such as cigarette smoke, VOC's, diesel fumes, formaldehyde, amongst others. Both UV wavelengths work together to destroy thousands of biological and chemical contaminants that continually circulate within the building.

Ultraviolet Solutions

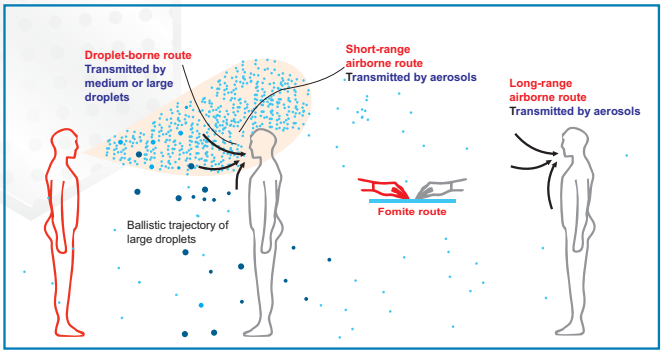
- UV-A — the most abundant in sunlight; responsible for skin tanning and wrinkles
- UV-B — primarily responsible for skin reddening and skin cancer; also used for medical treatments
- UV-C — naturally blocked by the earth's ozone layer and is the germicidal wavelength

Airborne Spread of Infectious Agents

In Indoor Environment

Airborne transmission of infectious agents involves droplets that are expelled by sneezing or coughing or are otherwise distributed into the air. Although the liquid/vapor around the infectious agent evaporates, the residue (or droplet nuclei) may remain in the air for long periods, depending on such factors as particle size, velocity, force of expulsion, particle density, infectivity (ie., viability of the microorganism when exposed to the environment and its ability to cause infection when a susceptible host is subsequently exposed), humidity, and rate of air flow.

Airborne spread of infectious agents is directly relevant to the airborne route, and indirectly to the droplet-borne and fomite routes.



Small droplets (<5 µm), called aerosols, are responsible for the short & long-range airborne route, and indirect contact route. Large droplets are responsible for the direct spray route and indirect contact route

UVGI has been used as a supplement to mechanical ventilation to inactivate airborne infectious agents to protect the health of hospital/clinic occupants. UV-C lamp systems, that kill 70 to 95% of all microbes in the air, can be deployed in the following areas:

UVGI System Configurations to Help Mitigate Viruses

- On AHU Coils for Cleaning the Supply Air
- In Supply / Return Air Ducts
- Wall Mounted Upper-Room Air Disinfection
- Portable Hand-Held Surface Cleaner

Hospital Wide Application Areas of the UVGI System

- Operating Rooms, ICU / CCU
- Doctors Cabin
- Patient Rooms / Wards
- Out-Patient Waiting Areas

Applications

- Hospitals
- Hotels, Casinos
- Pharmaceutical
- Food Processing
- Waiting Rooms
- Residential Spaces
- IT Parks, Schools and Colleges
- Commercial Spaces – Malls, Restaurants, Pubs

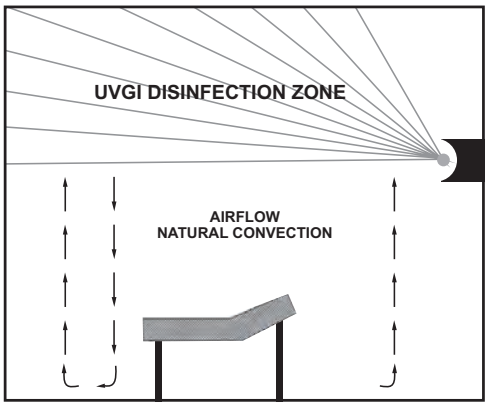
Upper-Room Air Disinfection

SteraShield - Wall Mounted Upper-Room Air Disinfection

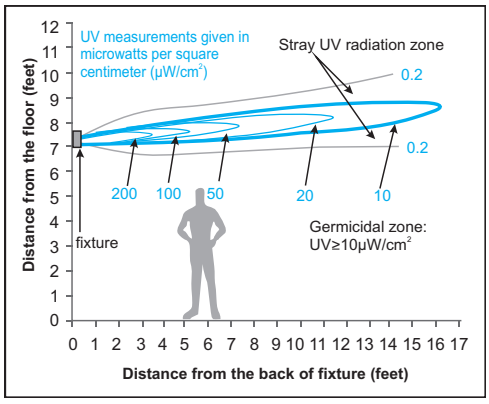
The most widely used application of UVGI is in the form of passive upper-room fixtures containing UVGI lamps that provide a horizontal layer of UV energy field above the occupied zone.

- Effective control against secondary air borne infection, including drug resistant pathogens.
- Works 24/7 without affecting occupants of the space.
- Cost effective system.
- Does not require any air-conditioning/ventilation system.
- No secondary contaminants are produced.
- Maintenance free system.

The device consists of a UV-C lamps mounted in a specially designed reflector assembly which is mounted on wall to create a UVC beam directed to the ceiling. Natural convective currents take microbes to upper level which are effectively eliminated by the germicidal action of UV-C. It is very helpful to the patients and even more to the health care workers.



Installation in a Room of SteraShield - Wall Mounted System



UV Intensity Distribution in a Room with SteraShield - Wall Mounted System

Ensavior Technologies Pvt. Ltd.

Phone (Toll Free) : +91-9658 373 373 | E-mail: info@ensavior.com | Web: www.ensavior.com