

# Ultraviolet Technology

## UV Disinfection of Air

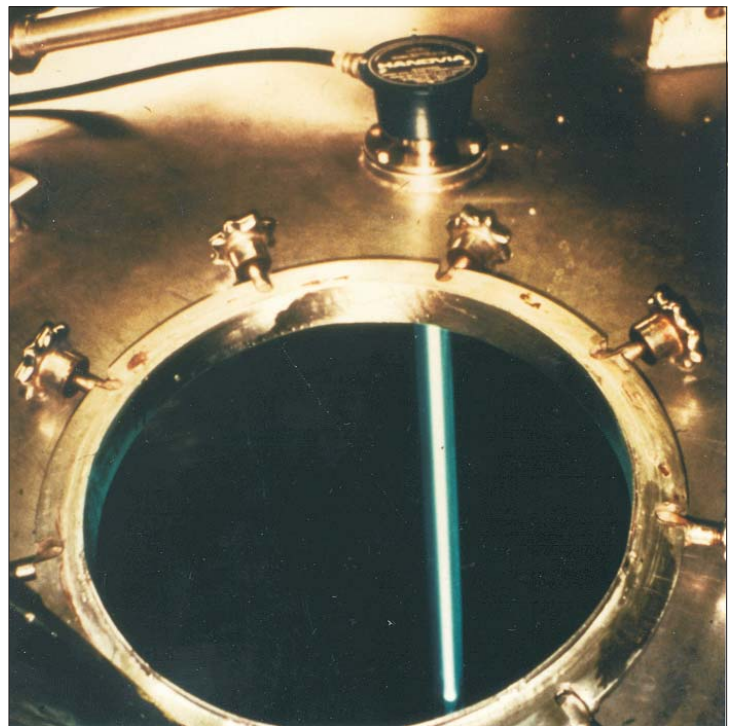
### How Does Ultraviolet Work?

Ultraviolet energy causes permanent inactivation of micro-organisms by disrupting DNA so that they are no longer able to maintain metabolism or reproduce. The maximum effectiveness occurs at between 240nm and 280nm, with the most effective wavelength typically at 265nm. The Hanovia high-intensity Arc Tube produces these wavelengths in abundance.

### Moving Air Applications

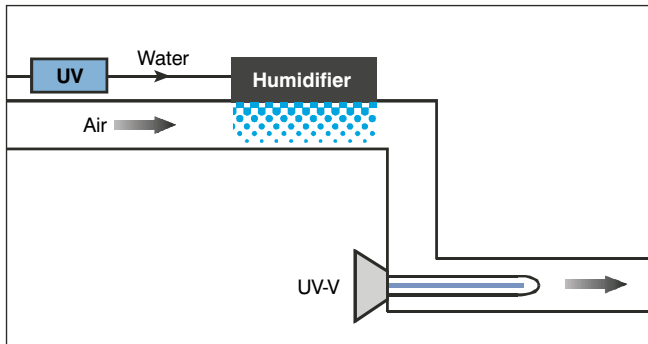
Increasingly strict standards for product quality and personal safety are not always met by air filtration alone. More and more companies and public sector employers are choosing to use UV in conjunction with, or instead of, sterile filters in air ducts. Prime application areas include:

- ▶ Air to aseptic and sensitive areas for the food, beverage, pharmaceutical and electronics industries
- ▶ Air to clean rooms and laboratories in all scientific establishments
- ▶ Air to hospitals and clinics
- ▶ Disinfection of air in ventilation ducts in all types of buildings, often for prevention of "sick building syndrome"
- ▶ Protection of staff and visitors against *Legionella* in public buildings



A Hanovia UV-I system installed in the head space of a sugar syrup tank at a major soft drinks production site.

## Humidified Air - An Additional Risk



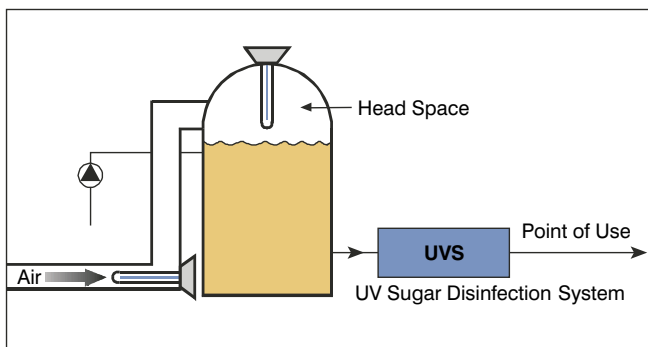
Moving Air Schematic

If it is necessary to humidify ducted air, the method of choice is a spray humidifier within the ventilation system. However, water is another potential source of infection, particularly when dispersed in an aerosol. Extra protection against this source of infection is achieved by UV treatment of the water prior to its entry into the sprayer. For details of Hanovia's cost effective in-line systems, please contact a Hanovia specialist who will be pleased to advise and assist you.

## Static Air Applications

Static, or slow-moving air is most effectively treated by a Hanovia UV unit mounted on the ceiling or inside the top of a tank. Key areas for UV treatment of static air include:

- ▶ Tank head space in the food, beverage and pharmaceutical industries
- ▶ Filling machines for sensitive products
- ▶ Clean rooms and beverage filling rooms



## Sugar Disinfection System

Micro-organisms and spores can be drawn into the storage tank through air or in the concentrated sugar syrup. At high sugar concentrations these organisms remain dormant. However, condensation forming in the tank head space will produce 'pools' of dilute sugar solution on the syrup surface. These provide an ideal growth site for microorganisms. Continuous UV treatment of the tank head space prevents this potential source of spoilage organisms.

## Hanovia UV Systems

Selection of the appropriate UV model for each application should be decided in conjunction with a Hanovia specialist, who will also advise on the installation and dose. Deciding factors include:

### Dimensions of Ducting or Tanks

- ▶ Maximum distance
- ▶ Material reflectance
- ▶ Air velocity
- ▶ Relative Humidity
- ▶ Air quality (suspended particles)
- ▶ Type and concentration of organisms
- ▶ Re-circulation to fresh air ratio

### The Hanovia Air Treatment Range

UV-V Ventilation ducts and Moving Air applications  
UV-I Static Air ie Tank head space, slow moving air

## Hanovia UV Systems

### Most Efficient

- ▶ Treatment is effective
- ▶ Designed to operate continuously
- ▶ Low maintenance requirement
- ▶ No steam, hot water or dangerous chemicals are required
- ▶ Overdosing is not possible

### Compact and Easy to Install

- ▶ Hanovia UV systems conveniently fit into existing ducts and tanks with minimum site preparation
- ▶ Silent operation

### Inexpensive and Simple to Maintain

- ▶ No moving parts to maintain
- ▶ Simple and safe operation easily understood by operators
- ▶ Replacement of Arc Tubes is quick and simple
- ▶ Distribution world-wide

### Rigorous Quality Control (ISO 9001)

- ▶ All Hanovia quartz thimbles and Arc Tubes built to highest possible standard
- ▶ Every Arc Tube individually checked and each completed system tested and run before despatch
- ▶ Test certificates available

### All Hanovia Air Disinfection Systems Include:

- ▶ Arc Tubes sized for each application
- ▶ Control and Power Supply module
- ▶ Connection cable

# Hanovia

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