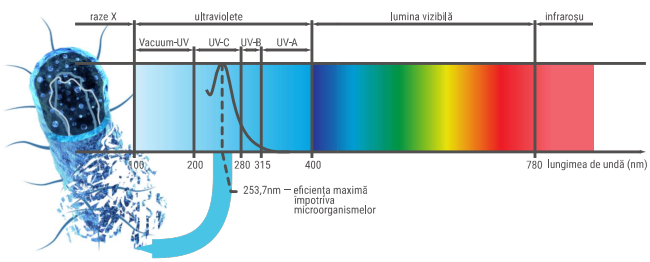
I.1. About the efficiency of UV-C ultraviolet light disinfection

The beneficial effect of UV-C ultraviolet light has been observed since ancient times.

With the study of microorganisms and their induced diseases, the destructive effect of UV-C ultraviolet light on pathogens was observed. At the same time, it has been proven the efficiency of UV-C light in extending the shelf life of various food products (processed or packaged).

UV-C ultraviolet light spectrum of action

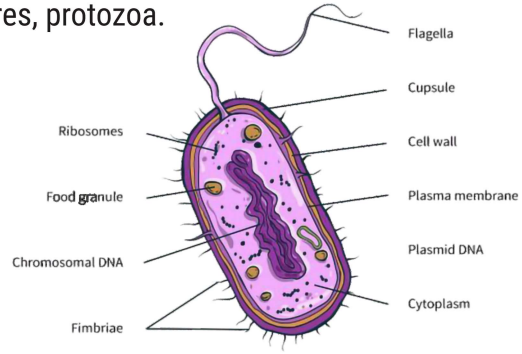


Ultraviolet light is an invisible component of solar radiation located, as a wavelength, between infrared and X-rays. There are three types of ultraviolet light, which differ in wavelength and have different effects on living organisms:

· **UV type A** – between 315nm and 400r (erythematous effects - inflammatory type);
· **UV type B** – between 280nm and 315nm (tanning effect);
· **UV type C** – between 100nm and 280nm (biocidal effect).

The maximum destructive efficiency on pathogens i obtained by using UV-C ultraviolet light with a wavelength of 253,7 nm.

Destroyed microorganisms: viruses, bacteria, mold spores, protozoa.



The influence of UV-C ultraviolet light on microorganisms

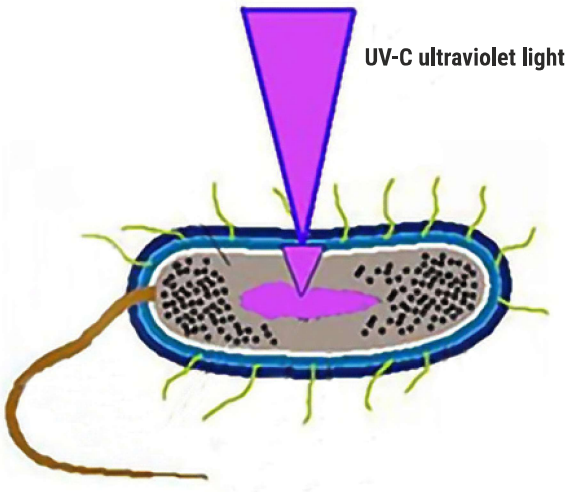
To destroy microorganisms, UV-C ultraviolet light penetrates the cell membrane and damages the deoxyribonucleic acid (DNA) of pathogens, preventing their ability to reproduce. From now on, the pathogen is no longer a threat to the human body.

UV-C ultraviolet light affects the biological material without producing chemical reactions.

UV-C ultraviolet light disinfection has an efficiency of up to 99.99%, depending on the type of microorganism and the exposure time.

Also, UV-C ultraviolet light does not alter particles and chemicals in the environment, whether organic or inorganic. The effect is disinfectant, and at high dose, sterilizing.

UV-C ultraviolet light does not generate temperatures above 40 ° C and does not affect surrounding objects.



UV-C light can disinfect up to 99.99% depending on the type of microorganism, the exposure time and the type of activity performed.

I.2. Applications of UV-C disinfection devices manufactured by BIOCOMP

Wherever there is a risk of illness, there should also be a BIOCOMP UV-C ultraviolet light disinfection device, specially designed for your safety and health!

The UV-C ultraviolet light disinfection devices manufactured by BIOCOMP are the most efficient, ecological and economical method of preventing disease transmission, with application in the following fields: medical, food, hospitality, zootechnical, veterinary, cosmetic, educational, home and office.

Medical

Food

Hospitality

Zootechnical

Veterinary

Cosmetics

Educational

Household

Office

I.2. Applications for UV-C disinfection devices manufactured by BIOCOMP

Medical field: We all want to benefit from the best medical services and the safety and quality of the medical equipment. In this sense, UV-C ultraviolet light disinfection devices manufactured by BIOCOMP can effectively eliminate hospital acquired infections (HAI) and viruses, bacteria or spores that are transmitted in the hospital environment and which spread either due to superficial cleanliness or agglomeration.

Food field: UV-C disinfection devices manufactured by BIOCOMP ensure integrated ecological biosecurity, regardless of the destination of food production spaces (meat, milk, eggs, fish, fruits and vegetables, alcoholic and non-alcoholic beverages, spices, tea, etc.). These devices can be easily mounted on any type of packaging line and conveyor line, as well as in storage spaces, sweeping rooms, inspection rooms and sanitary inspection areas. UV-C disinfection devices manufactured by BIOCOMP ensure both the safety of staff in the office, logistics and production areas (by disinfecting the air and surfaces), and the decontamination of the food products surface, to increase the shelf life.

Hospitality field: The challenge of disinfecting spaces in the hospitality field lies in eliminating internally developed epidemiological loads (mold cultures and specific bacterial cultures), and in eliminating epidemiological loads introduced daily from outside sources (employees, customers, mean of transportation, raw materials, etc.). The efficient, economical and ecological disinfection in the hospitality field is professionally achieved by using UV-C ultraviolet light disinfection devices manufactured by BIOCOMP.

Zootechnical field: This field covers areas with a very high risk of disease and disease transmission, both for animals and for the people who come into contact with them. The UV-C ultraviolet light disinfection devices manufactured by BIOCOMP, mounted in certain areas (sanitary inspection, farm, silos), effectively eliminate viruses and bacteria that inevitably circulate in the air, so they no longer pose any danger. Avian flu, swine flu and other diseases that can be transmitted to animals by air are easily destroyed.

Veterinary field: The UV-C ultraviolet light disinfection devices manufactured by BIOCOMP can be installed both in the intervention and consultation areas, as well as in the veterinary pharmacies, guaranteeing the safety of the medical procedures. At the same time, these devices ensure staff safety during the stages of cosmetology, hygiene and washing the animals.

I.2. Applications for UV-C disinfection devices manufactured by BIOCOMP

Cosmetics field: Every day, hundreds of people enter beauty salons. Regardless of their size, they become a breeding ground for pathogens (in the areas of hair washing, manicure, pedicure or body cosmetics). All these area must not only be cleaned, but disinfected. The UV-C disinfection devices manufactured by BIOCOMP are ensuring maximum safety for staff and customers.

Educational field: It is recommended to install UV-C ultraviolet light disinfection devices manufactured by BIOCOMP in nurseries, kindergartens, schools, playgrounds or any area where children carry out their daily activities. These devices create an ecological barrier against contamination with seasonal flu, colds, viruses, conjunctivitis, gastroenteritis and other diseases specific to preschool and school groups.
In academic areas, with a very large flow of people, it is recommended to install UV-C ultraviolet light disinfection devices manufactured by BIOCOMP in offices or other areas where there is very large congestion per square meter.
The use of biocidal devices with UV-C ultraviolet light manufactured by BIOCOMP is also recommended in museums or restoration areas of art objects and libraries, for the disinfection of books, manuscripts or any kind of old printed material, which form mold spores.

Household: Every parent wants their children to be healthy and enjoy the best hygiene and health conditions. Although there are certain types of bacteria at home that are naturally transmitted in the family, we recommend regular disinfection of the bedroom, bathroom, kitchen and hallways as well as disinfection of the bedding, toys, seating areas (sofas, chairs) and any surface you want sanitized. For families with young children, we recommed disinfecting all areas where the child spends his time.
It is also recommended to use UV-C ultraviolet light disinfection devices manufactured by BIOCOMP in homes where sick people live or who are recovering from certain surgeries and need a higher degree of hygiene and safety, as well as people who suffer from certain allergies.

Office field: Studies show that a package of mold and bacteria cultures is formed in less than six months after a building is put into operation. In addition, every day new external contaminations appear. For these reasons, there are two categories of health disorders: sick building syndrome (SBS) and building related illnesses ("building related illnesses"). The danger of infectious diseases is even higher, as employees share offices, dining areas, toilets, elevators and other surfaces that contain a wide range of pathogens. The number of days of sick leave directly affects the operational capacity and the profit of companies. This problem is solved professionally by using UV-C ultraviolet light disinfection devices manufactured by BIOCOMP.

I.3. List of microorganisms destroyed by UV-C ultraviolet light

Bacteria

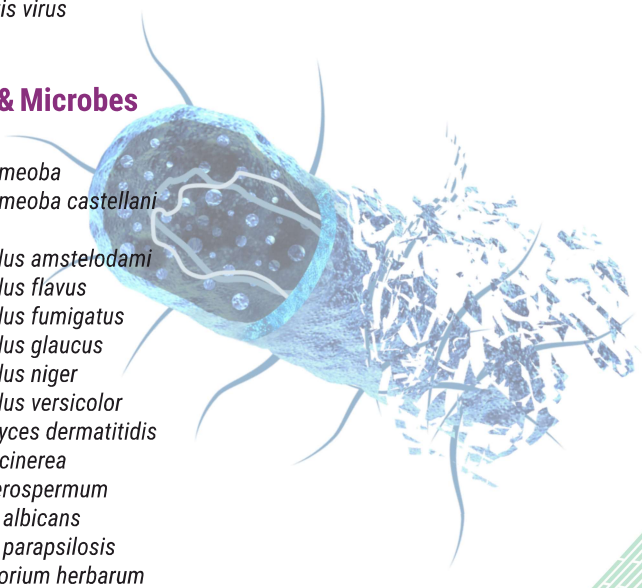
Acinetobacter
Aeromonas
B.atrophaeus
Bacillus anthracis
Bacillus cereus
Bacillus megatherium
Bacillus pumilis spores
Bacillus subtilis
Bacillus subtilis spores
Burkholderia cenocepacia
Burkholderia cepacia
Campylobacter jejuni
Citrobacter diversus
Citrobacter freundii
Clostridium perfringens
Clostridium tetani
Corynebacterium diphteriae
Coxiella burnetti
Deinococcus radiodurans (W)
Dysentery bacilli
Eberthella typhosa
Enterobacter cloacae
Escherichia coli
Francisella tularensis
Haemophilus influenzae
Halobacterium salinarum
Halobacterium sp. NRC-1
Halomonas elongata
Helicobacter pylori (W)
Klebsiella pneumoniae
Klebsiella terrigena
Legionella bozemanii
Legionella dumoffi
Legionella gormanii
Legionella jordanis
Legionella longbeach
Legionella micdadei
Legionella oakridgensis
Legionella pneumophila
Legionella wadsworthii
Listeria monocytogenes
Micrococcus candidus
Micrococcus piltonensis
Micrococcus sphaeroides
Mycobacterium avium-intracell
Mycobacterium bovis
Mycobacterium flaviscens
Mycobacterium fortuitum
Mycobacterium kansasii
Mycobacterium marinum
Mycobacterium parafortuitum
Mycobacterium phlei
Mycobacterium smegmatis
Mycobacterium terrae
Mycobacterium tuberculosis
Mycoplasma arthritidis
Mycoplasma fermentans
Mycoplasma hominis
Mycoplasma orale type 1
Mycoplasma orale type 2
Mycoplasma pneumoniae
Mycoplasma salivarium
Neisseria catarrhalis
Nocardia asteroides
Phytomonas tumefaciens
Proteus mirabilis
Proteus vulgaris
Pseudomonas aeruginosa
Pseudomonas diminuta
Pseudomonas flourescens
Pseudomonas maltophilia
Pseudomonas putrefaciens
Rickettsia prowazekii
Salmonella anatum
Salmonella derby
Salmonella Enteritidis
Salmonella infantis
Salmonella Paratiphi
Salmonella spp.
Salmonella typhi
Salmonella typhimurium
Sarcina lutea
Serratia indica
Serratia marcescens
Shigella dysenterie
Shigella paradysenteriae
Shigella sonnei
Spirillum rubrum
Staphilococcus albus
Staphilococcus aureus
Staphilococcus epidermitis
Streptococcus faecalis
Streptococcus faecium
Streptococcus haemolyticus
Streptococcus lactis
Streptococcus pneumoniae
Streptococcus pyogenes
Streptococcus viridans
Streptomycens coelicolor
Streptomycens griseus
Vibrio cholerae
Vibrio ordalii
Vibrio parahaemolyticus
Yersinia enterocolitica
Yersinia pestis

Viruses

Adenovirus
Adenovirus type1
Adenovirus type2
Adenovirus type4
Adenovirus type5
Adenovirus type6
Adenovirus type15
Adenovirus type40
Adenovirus type41
Avian influenza virus
Avian Leukosis virus (RSA)
Avian Sarcoma virus
B. subtilis phage
Bacteriophage MS2 air
Borna virus
BLV
Bovine calicivirus
Bovine parvovirus
Canine calicivirus
Canine hepatic Adenovirus
Coronavirus
Coronavirus (SARS)
Coxsackievirus
Encephalomyocarditis virus
Epstein-barr virus
Feline calicivirus
Hepatitis A virus
Herpes simplex viruses
HIV-1
HTLV-1
Human Cytomegalovirus
Influenza A virus
Measles virus – Pojar
Mengovirus
Minute virus of Mice
Moloney Murine Leukemia
Murine Norovirus
Murine sarcoma virus
Newcastle Disease Virus
Polyomavirus
Polioviruses
Porcine parvovirus (PPV)
Pseudorabies
Rauscher Murine Leukemia
Reovirus
Reoviruses type1-3
Rotaviruses
Rous Sarcoma virus
Semliki forest virus
Simian viruse 40
Sindbis virus
S. aureus phage
VEE
Vesicular
Stomatitis virus
WEE

Fungi & Microbes

Acanthameoba
Acanthameoba castellani
Algae
Aspergillus amstelodami
Aspergillus flavus
Aspergillus fumigatus
Aspergillus glaucus
Aspergillus niger
Aspergillus versicolor
Blastomyces dermatitidis
Botrytis cinerea
C. sphaerospermum
Candida albicans
Candida parapsilosis
Cladosporium herbarum
Cladosporium trichoides
Cladosporium wernecki
Cryptococcus neoformans
Cryptosporidium hominis
Cryptosporidium parvum
Curvularia lunata
Encephalitozoon cuniculi
Encephalitozoon hellem
Encephalitozoon intestinalis
Eurotium rubrum
Fusarium oxysporum
Fusarium solani
Fusarium spp.
Giardia lamblia cysts
Giardia muris cysts
Histoplasma capsulatum
Monilinia fructigena
Mucor mucedo
Mucor racemosus
Mucor spp.
Penicillium chrysogenum
Penicillium corylophilium
Penicillium digitatum
Penicillium expansum
Penicillium italicum
Penicillium roquefortii
Penicillium spp.
Prions – scrapie
Protozoa
Rhizopus nigricans
Rhizopus oryzae
Rhodotorula spp.
Saccharomyces spp.
Scopulariopsis brevicaulis
Sporotrichum schenkii
Stachybotrys chartarum
Torula bergeri
Torula sphaerica
Trichophyton rubrum
Ustilago zeae
Yeast



II. UV-C disinfection devices manufactured by BIOCOMP