PATENT UV Sterilizer Lamp

Ultraviolet germicidal irradiation is a disinfection method that uses short-wavelength ultraviolet (UV-C) light to kill or inactivate microorganisms by destroying nucleic acids and disrupting their DNA, leaving them unable to perform vital cellular functions. UV disinfection is used in a variety of applications, such as food, air, and water purification.

UV light is electromagnetic radiation with wavelengths shorter than visible light. UV can be separated into various ranges, with short-wavelength UV (UVC) considered "germicidal UV". At certain wavelengths, UV is mutagenic to bacteria, viruses and other microorganisms. Particularly at wavelengths around 260 nm–270 nm, UV breaks molecular bonds within micro organismal DNA, producing thymine dimers that can kill or disable the organisms. Mercury-based lamps emit UV light at the 253.7 nm line.

There are no micro-organisms known to be resistant to UV, unlike chlorination. UV is known to be highly effective against bacteria, viruses, algae, molds and yeasts, and disease causing oocysts like cryptosporidium and giardia.

In practice, bacteria and viruses are the cause of most major waterborne pathogenic diseases. Of these enteric viruses, hepatitis virus and Legionella pneumophila have been shown to survive for considerable periods in the presence of chlorine, but are readily eliminated by UV treatment.

For most microorganisms, the removal efficiency of UV for microbiological contaminants such as bacteria and viruses generally exceeds 99.99%. Specifically, the following are moved to an efficiency of greater than 99.99%: E-coli, Salmonella typhi (Typhoid fever), Salmonella enteritidis (Gastroenteritis), Vibrio cholerae (Cholera), Mycobacterium tuberculosis (Tuberculosis), Legionella pneumophila (Legionnaires' Disease), Influenza Virus, Polio Virus, and Hepatitis A Virus (better than 90%).

Countertop UV systems are generally not recommended for removing oocysts such as giardia and cryptosporidium unless equipped with a 0.5 micron carbon block pre-filter since the exposure time the

contaminant has to the UV ray is not always long enough to provide an adequate UV dose for disinfection of these more complex organisms.

UV lamps and model which using sterilizer : Aquafine 17998, Aquafine 18095, Aquafine Gold L, Aquafine 17491LM, Aquafine 17491, Aquafine 3084, Aquafine 3084LM, Aquafine 3098, Aquafine 3098LM, Hanovia 130031-3001 / 130027-3001-02, Ideal Horizon IH LMP 12008, Photoscience C091WS, Chiyoda Kohan CS1001, Berson 2.43.179