

INDUSTRY-SPECIFIC APPLICATIONS FOR UV TECHNOLOGY



APPLICATION: Cooling Towers, Fountains, Laboratory / Research, Medical Devices, Potable Water // **UV SERIES:** OptiVenn™, TrojanUVLogic™, Optima HX™

Aquafine UV water treatment technology is a proven solution for preventing nosocomial Legionella contamination of hospital water systems.

UV Technology

UV light inactivates the Legionnaire microbe by penetrating the cell wall and damaging the DNA, destroying its ability to reproduce.

The Society for Healthcare Epidemiology published a study at which the University of Virginia Hospital collected 930 water samples over a 13 year period. All water samples tested negative for Legionella since the installation of Aquafine UV equipment in the water main of the new facility, despite documented contamination of a neighboring patient facility on the hospital campus.

Aside from being environmentally responsible, UV technology for water treatment produces no harmful by-products, imparts no taste or color and yet disinfects water to meet the highest standards in hospital applications.



UV Solutions for Prevention of Nosocomial Legionella

Outbreaks of nosocomial Legionnaires disease might easily exist unnoticed in a hospital, resulting in patient illness or possible patient mortality. Hospital buildings have complex water systems increasing the risk for Legionella infection outbreaks, and studies indicate implementing UV water treatment technology is a proven solution.

Legionnaires' disease is a serious form of the bacteria Legionella, a pneumonia contracted by ingesting water that has been contaminated with the bacteria. Legionella bacteria are found naturally in the environment, usually water and thrives in warm water, common for spas, cooling towers, hot water tanks, large plumbing systems, or parts of the large facility air-conditioning systems.

Infection control professionals, supported by hospital administrators, health care facility personnel and engineers, should select and evaluate the specific disinfection solution. Proactive routine environmental cultures for hospital water allow for effective prevention of this high-profile hospital-acquired infection.

The University of Virginia hospital experienced an epidemic of nosocomial Legionella micdadei, infecting the rooms of renal transplant patients. Following the outbreak, the location installed new water pipes and Aquafine UV water treatment equipment, proven effective in preventing water contamination with Legionella from flowing into transplant rooms. Aquafine UV technology was installed in the main water supply for the new 700 bed hospital building across the street in which the 13 year study was performed.

// PREVENTION OF NOSOCOMIAL LEGIONELLA

UV Applications for Hospitals

Cooling Towers

While the addition of biocides and chemicals to cooling tower water may control bacteria levels and algae, there are still issues which pertain to chemical handling, safety and environmental discharge. Aquafine Corporation pioneered the technology utilizing UV light for chemical-free microbiological control for cooling tower applications.

Fountains

UV disinfection of decorative fountains is a complimentary way of providing an effective method of inactivating a wide range of waterborne pathogens including Cryptosporidium, Giardia and Legionella. UV water treatment disinfects and simultaneously destroys chloramines and chloro-organics instantly as the water passes through the treatment chamber. Aquafine Corporation offers bioassay validated equipment which meets National Safety Foundation (NSF) requirements for these applications.

Laboratory / Research

A pharmaceutical water system could have several locations where UV equipment would be installed. Some typical locations of installation would be post-carbon filter and pre-RO (reverse osmosis). Disinfection is also recommended for the process distribution loop and pre storage tank. In order to meet United States Pharmacopeia (USP) 31, regulations require an upper limit of 500ppb for TOC for USP Purified Water, as well as for WFI (Water for Injection). Aquafine Corporation uses a powerful 185nm wavelength lamp technology appropriately sized and designed to meet this application.

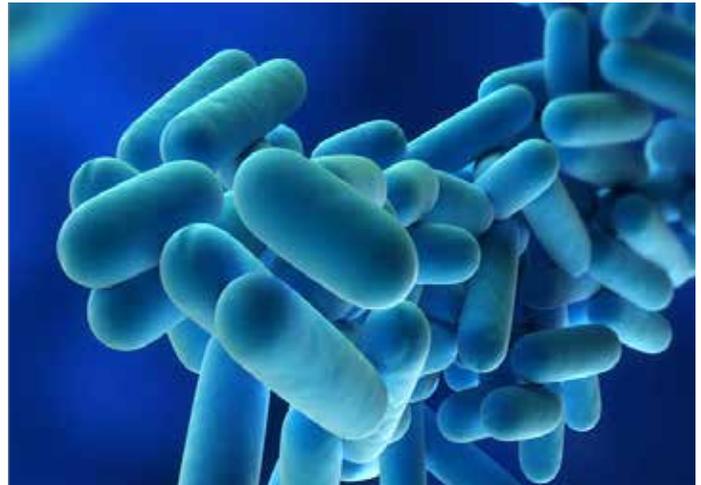
Medical Device

UV technology is used in many medical device applications including microbial-free water before non-heat chemical sterilization. Aquafine Corporation partners with medical device manufactures, designing custom UV solutions to meet exacting product standards.

Potable Water

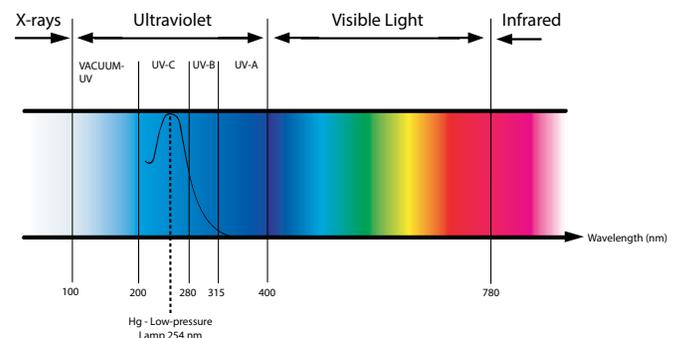
This is the most common application of UV light in water treatment in globally. Aquafine Corporation offers bioassay validated products, meeting strict regulatory drinking water requirements including USEPA, DVGW and NSF.

For questions regarding your application needs, please contact your local Authorized Distributor or Aquafine for more information.



Ultraviolet (UV) light is a form of light that is invisible to the human eye. It occupies the portion of the electromagnetic spectrum between X-rays and visible light. A unique characteristic of UV light is that a specific range of its wavelengths, those between 200 and 300 nanometers (billionths of a meter), are categorized as germicidal – meaning they are capable of inactivating microorganisms, such as bacteria, viruses and protozoa.

ELECTROMAGNETIC SPECTRUM



Aquafine is an ISO 9001 certified company. Aquafine equipment performance is guaranteed with the use of genuine OEM replacement parts.

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