



## WATER TREATMENT

At Avlon Inc., we are driven by a singular vision – delivering smart, sustainable, and scalable engineering solutions that address the critical needs of water, energy, and environment. With a proven track record across the Philippines and Southeast Asia, we specialize in technologies that serve industries, communities, and the planet.

In water treatment, we offer advanced filtration, softening, disinfection, and reverse osmosis systems designed for industrial and institutional applications. These systems ensure consistent water quality while optimizing resource use and operating costs.



## Who We Are

### About Us

With over 35 years of expertise in wastewater treatment plant, air pollution control equipment's, industrial steam boiler including power plants and oil refinery design, engineering, construction and commissioning, AVLON has been a trusted industry leader since 1980. Renowned for excellence, we have played a key role in pioneering projects across India's oil and refinery sector, setting new standards in quality and innovation.

In 2015, AVLON expanded its operations to the Philippines, establishing itself as a premier integration contractor in the Energy and Environmental Sector. We operate with a strong infrastructure, including state-of-the-art heavy lifting and construction tools, a full-scale fabrication shop, a vast warehouse, and an advanced design and engineering facility.

With a commitment to excellence and innovation, AVLON continues to lead the way in shaping the future of the Energy and Environmental Sector in Philippines.

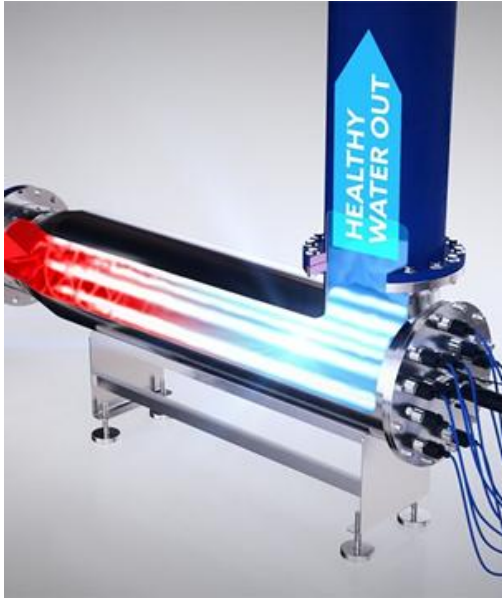
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## Avlon's Advanced Ultraviolet (UV) Water Disinfection Technology

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Ultraviolet disinfection is a highly effective physical treatment method used to inactivate bacteria, viruses, protozoa, and other pathogenic microorganisms in water without the use of chemicals. Unlike conventional chemical disinfectants such as chlorine, UV disinfection works instantly and does not introduce any residual taste, odor, or harmful byproducts into the treated water. This makes UV technology particularly suitable for applications requiring high microbiological purity, including drinking water systems, wastewater reuse plants, food and beverage production, aquaculture facilities, and pharmaceutical-grade water treatment.

The core of a UV disinfection system is the UV reactor chamber, which houses specially designed ultraviolet lamps that emit light in the germicidal UV-C spectrum at approximately 254 nanometers. When microorganisms present in the water are exposed to this wavelength, the UV radiation penetrates their cell walls and damages their nucleic acids (DNA or RNA). This disruption prevents the microorganisms from reproducing or infecting hosts, effectively rendering them inactive. Because the process targets the genetic material of microorganisms, UV disinfection is highly reliable for a broad spectrum of pathogens, including chlorine-resistant organisms such as *Cryptosporidium* and *Giardia*.

For optimal disinfection performance, several operational parameters must be carefully controlled. These include UV intensity, exposure time, water transmittance, and hydraulic flow characteristics within the reactor. Modern UV systems are designed to ensure uniform exposure of all water passing through the chamber, minimizing the risk of untreated flow paths. To maintain lamp efficiency and prevent scaling or fouling on the quartz sleeves that protect the lamps, systems incorporate automatic cleaning mechanisms and monitoring sensors that continuously track UV intensity and system performance.



Avlon's UV Water Disinfection Systems are engineered with high-output UV lamps, corrosion-resistant stainless-steel reactors, automated sleeve cleaning systems, and intelligent control panels to ensure reliable and energy-efficient operation. Our systems are designed for easy integration with upstream treatment processes such as reverse osmosis, ultrafiltration, and tertiary filtration systems, providing a final barrier against microbiological contamination. With extensive experience in water and wastewater treatment installations, Avlon delivers UV disinfection solutions that provide consistent pathogen inactivation while supporting compliance with international drinking water and environmental safety standards.

