**Water**

*UV water purification* offers a safe, effective and cost-efficient alternative to chemical treatment. With no harmful byproducts, the worldwide use of germicidal UVC technology is critical for eco-systems and reducing pollutants in rivers, oceans and other bodies of water. UV water purification applications continue to grow in the industries of water reclamation, *ship ballast water*, waste water, drinking water, industrial and commercial process water, pool and spa, aquaculture and life sciences.

**UV Water Purification for a Variety of Applications**

**Aqua Culture**

Because aquaculture and aquariums are experiencing significant growth, they represent a substantial opportunity for germicidal UV water purification treatment. UV disinfection is vital to the health and well-being of marine life and for increased production in fish hatcheries and rearing farms. UVC maintains water quality without the use of hazardous chemicals.

**Drinking Water**

There are currently 156,000 public drinking water systems in the United States, serving 90% of the population. These numbers clearly demonstrate the growth potential for germicidal applications in an industry where eliminating pathogens is critical to safe drinking water.

Unlike chemicals, germicidal UV technology is effective at eliminating cryptosporidium and giardia bacterium. A major characteristic of germicidal UVC water purification in ensuring public health is that biological contaminants cannot build resistance to UV light.

Germicidal UV water purification benefits include a short radiation time, ease of use and minimal maintenance, and very low operating costs. The technology is environmentally friendly and does not alter the taste, odor or pH value of the water.

**Life Sciences**

This industry requires a high-level of water disinfection to meet USP regulations. UVC germicidal lamps quickly and effectively disinfect and sterilize the water, destroy ozone and chlorine/chloramines, and reduce TOCs to meet the strict purified water and water for injection (WFI) standards of bio-engineering, genetic and medical testing, research laboratories, nanotechnology, and pharmacology, food science, and biotechnology.

**Pool & Spa**

The pool and spa industry relies on chlorine to clean the water. With ozone producing germicidal UV lamps, water can be treated with none of the harmful side effects of chemical germicides. Ultraviolet water purification has no noticeable odor, taste or color and is nonirritating. Ozone is safe and effective, purifying water 3,000 times faster than chlorine.

**Wastewater**

Wastewater is the collective term for contaminated water discharged by domestic residences, commercial properties, industry, and agriculture.
In the gas and oil industry, for example, formation water and injected water are wastewater formed with the extraction of these fossil fuels. The Produced Water Utilization Act of 2008 (awaiting approval from the Senate) encourages the research and development of environmentally sustainable produced water.

**Water Reclamation**

Water reclamation cleans wastewater produced from human usage, keeping pollutions from entering natural water sources.

Some of the pollutants are used for agricultural irrigation, such as nitrogen. Greenhouse water recirculation has vast potential for germicidal UVC technology. The U.S Department of Agriculture cites the nursery and greenhouse industry as the fastest growing segment of US agriculture.

**Ballast Water Treatment Systems**

Ballast water treatment systems utilize UVC germicidal lamps to keep ship’s ballast water sterilized and free from harmful marine organisms. Contaminated ballast water is considered one of the top 5 greatest threats to the world’s oceans. Sterilizing ballast water with UV ballast water treatment technology is effective, cost efficient and meets U.S. Coast Guard approval.

**Commercial & Industrial UV Water Purification Applications:**

- **Institution Systems:** laboratories, hospitals clinics, maternity areas, labor & delivery areas, pathology labs, kidney dialysis labs, nursing homes, universities, schools, veterinary clinics
- **Transient Systems:** resorts, hotels, & motels, ships, yachts, boats, campgrounds restaurants, water parks, amusement parks, golf course water holes, lakes and ponds, fountain water features, ornamental ponds, fish ponds, swimming pool
- **Community Systems:** apartment complexes, condominium complexes, trailer parks, rural water, villages, towns, cities, farms & ranches, animal husbandry, aquariums, fish farms, mollusk hatcheries, water preserves, well water
- **Industry Systems:** pharmaceutical production, electronic production, cosmetic production, cooling tower, power generation, food industry, ice makers, pulp & paper production, water vending machines, laundry water, pure wash water, bottle water, beer, wine, soft drinks, fruit juices, bottling facilities, edible oils, liquid sugar, sweeteners, water based lubricants, dairy processing, cistern applications
- **TOC Reduction Application:** Ozone reduction applications

LightSources and our affiliated companies, LCD Lighting, Voltarc along with strategic partners LightTech, and Cerlux represent the leading high-tech designers and manufacturers in the lamp industry today. Our products are used world-wide in a multitude of applications and industries such as our UV germicidal lamps that offer patent-protected, OEM-oriented solutions. Please contact us for more information regarding our products for UV water purification.