

# SnowPure

High Technology Water

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## Ultraviolet Light for Water Disinfection Applications By: Ultraviolet Sciences, Inc. (UVSI)

### Industries using Ultraviolet (UV) as a disinfection method:

Beverage/bottling, pharmaceutical, hemodialysis, microelectronics, hospitality, municipal, oil/gas, and industrial wastewater.

### Why UV?

UV gives chemical free disinfection and TOC reduction. Ultraviolet light at 254 nm is a powerful disinfectant, destroying or rendering harmless viruses and microbial organisms including Pseudomonas and Cryptosporidium. UV light at 185 nm generates OH• radicals which effectively oxidize organic contaminants in water. Since UV does not require any chemical addition, there are no resultant harmful by-products as in the case of chlorine disinfectants and peroxide treatments.

### Are there differences in UV Technology?

**Yes!** While nearly all other UV manufacturers use the “brute force” method (lots of UV lamps and lots of electrical power), UVSI has developed and patented a water treatment chamber that is highly UV reflective and therefore highly efficient, conserving the UV light, enabling the device to be smaller and significantly less expensive to operate.

### What makes the UVSI product unique?

The primary UVSI innovation is a patented UV-light reflective surface that increases the UV efficiency from 20% to 99%. Other UV products have a virgin, polished stainless-steel surface inside that absorbs UV light. UVSI's patented UV-light reflective surface keeps the UV photons active in the water chamber. Most UV systems waste 80% of the UV light that is generated by the UV lamp. UVSI's unique design solves this wasted-energy problem. The benefit of the improvement is a smaller UV unit, and a smaller energy demand to do the same disinfection.

- 99% UV light reflectivity – increased efficiency
- 80% less power usage – lower operating cost
- Fewer UV lamps needed (e.g., 2 vs 18) – lower lamp replacement cost
- Smaller chamber size – lower capital cost and smaller space footprint

The second UVSI innovation is RTD (Real-Time Dosimetry). All UVSI products come with RTD as standard. Our unique NIST-certified UV intensity sensor and measurement method provides an accurate measurement, displaying the exact UV dose in units of mJ/cm<sup>2</sup>. No run-time calibration periods. No arbitrary value outputs.

### What are the benefits of using UVSI products?

There are 3 main benefits when using UVSI products versus other UV manufacturers as a by-product of greatly improved efficiency. The observable benefit is the smaller size, leading to smaller footprint, easier handling, installation and maintenance. However the greatest advantage is the operating cost savings. It takes significantly less energy to maintain the required disinfection dosage, translating into direct power savings and reduced lamp replacement cost. The savings that UVSI products offer the end user after three years of operation pays for the unit!

### How new are UVSI products today?

UVSI launched its product line in March 2009. SnowPure became a distributor beginning in January 2010.

makers of  
**Electropure EDI**  
products