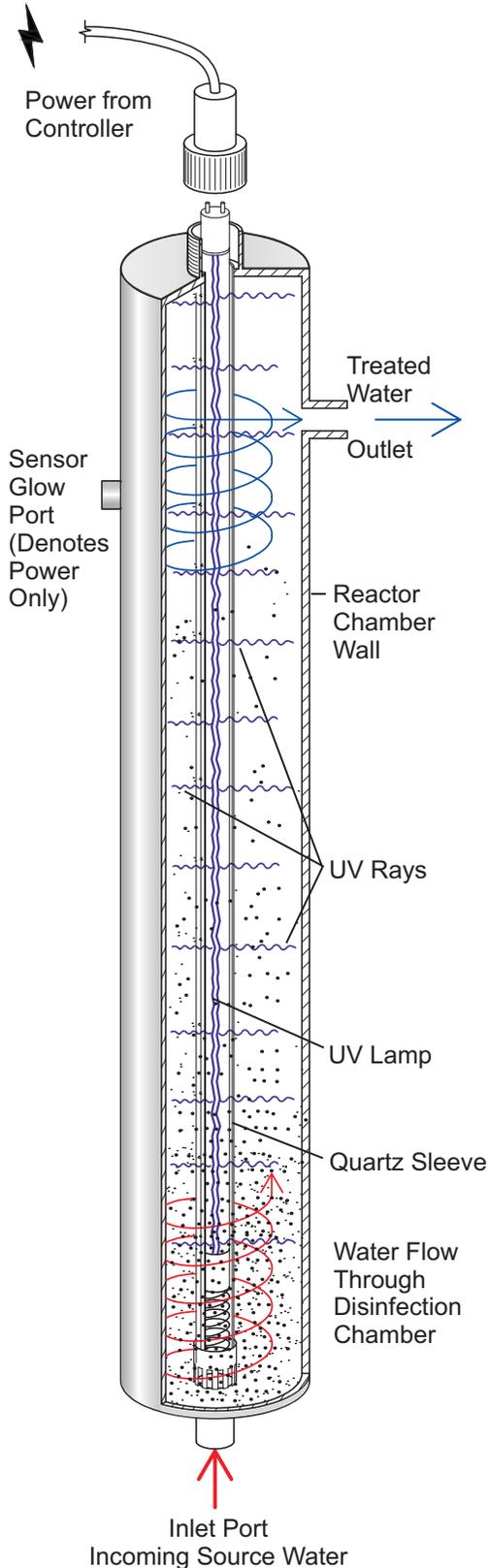


Illustration of the Ultra Violet System Components, Function and Flow

Explaining "why" UV is effective in destroying virus and bacteria is simple...Ultra Violet light comes in contact with a microorganism and scrambles its DNA so that it cannot reproduce - rendering it harmless. However the "How" is a little more complex because there are several conditions that must be met for this to happen successfully. This schematic and the associated explanation will fully illustrate how UV works.



1. The raw water supply (water which is usually from a well or surface source and may not have been previously treated) enters the inlet port of the UV disinfection system.
2. Water pressure (usually created by a pump) pushes the raw water up through the UV disinfection system. (This cylinder is also commonly called a reactor or reaction chamber.)
3. Running from the bottom to the top of the disinfection chamber (UV system) is a quartz sleeve. This quartz sleeve is generally closed on one end and open on the other. It's job is to protect the UV Lamp from coming into contact with the water inside the disinfection chamber.
4. The UV lamp is only slightly smaller in diameter than the quartz sleeve. When the lamp is activated (with an electrical current) it emits a spectral output of 253.7nm (see chart). This wave length is very close to the 265nm wavelength considered optimal for microbiological deactivation - as close as current science can get.
5. As the water flows through the chamber the light produced by the UV Lamp comes in contact with present waterborne microbiological contaminants, penetrating their outer walls and altering their DNA.
6. The DNA of these microorganisms is very simple, with the majority of coding related to replication. The UV light is absorbed quite readily at this spot in the DNA strand, breaking the DNA bond. The 'breaking' of the DNA strand' leaves the microorganism sterile - rendering it unable to replicate. Without the ability to replicate, the microorganism can no longer create colonies, thereby cannot cause illness or infection.
8. The treated water leaves the UV system/disinfection chamber via the product water outlet, now disinfected and safe to drink.

Please Note: The "Glow Port" will show light when the UV lamp is on and receiving power. It is NOT an indication of performance or desired output. Regular maintenance and replacements ensure that system is working as it should.