CLAIRE Technologies

UV vs QD

Comparative study

UV irradiation

Ultraviolet germicidal irradiation is a disinfection method that uses short-wavelength ultraviolet (UV-C) light to kill or inactivate microorganisms by destroying nucleic acids and disrupting their DNA, leaving them unable to perform vital cellular functions.

The UV disinfection mechanism is based on contact time, or time of UV exposure of the microorganism.

The UV systems are electrical devices composed basically of an isolated reactor and mercury black-ray ultraviolet lamp.

Quantum Disinfection™

Quantum Disinfection™ is a water disinfection technology that use silver based germicide ceramics to kill microorganisms by disintegration of the cells due to un instant ‘rip-off’ of electrons.

The killing mechanism is unique and allows the elimination of a large range of microorganisms (bacteria, virus, micro-algae, yeast, etc.) at high concentrations without any contact time.

The QD ceramics are a catalyst and not an electrical device; QD do not require electrical power.

A comparative simplified analysis in between both technologies, UV and QD is presented in the following table:

Caracteristic	UV	QD
Power requirement	Yes	No
Constant problems related to electrical devices in water	Yes	No
Significant maintenance	Yes	None
Inactivation of bacteria and not killing	Yes	No
Toxic/hazardous mercury waste	Yes	No
Production of toxic/hazardous partially burn VOC	Yes	No
Production of dangerous bacteria mutations (especially *E. coli*)	Yes	No
Production of toxic/hazardous partially burn VOC	Yes	No
Heating of the water	Yes	No
Application in slow gravitational flows (e.g. pitchers, small water filters, bottles, etc.)	No	Yes
Devices/systems size	QD is 2-8 times smaller than UV function of water flow	
Price	QD is 10-15% cheeper than UV (especially at higher water flow)	

Please visit: http://clairify-quantum-disinfection.eu/

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