

SolarUV Disinfection System



SolarUV - Disinfection Systems (UltraViolet) provide drinking water to remote and rural areas. Completely solar-powered SolarSpring systems use chemical free UV-Disinfection technology to produce drinking water from sources like ground or surface water. Automatic operation, low maintenance need and high security standards are the features of our SolarUV-Disinfection Systems.

System Benefits

Feature

Benefits

100% solar powered

- Installation in remote off-grid locations
- Low operation costs

Chemical free operation

- Reliable water quality
- No change in taste, odor, pH or conductivity nor the general chemistry of the water
- Suitable for many feed water sources

Flexible, stand-alone and reliable

- Modular system design
- Combinable with other technologies and treatment, water storage and supply concepts
- Automatic, PLC-controlled operation
- Simplicity and ease of maintenance

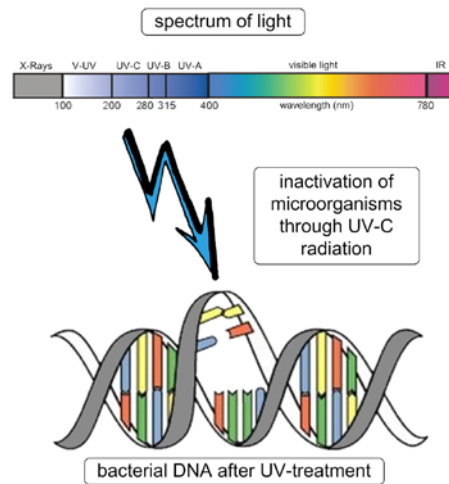


Applications

SolarUV-Disinfection Systems are perfectly suited for applications where water with low or no turbidity is available but maybe contaminated. SolarUV-Disinfection Systems can be used as a standalone solution for direct drinking water production or modular for example as an additional post treatment and water-storage solution for ultrafiltration (UF) and reverse osmosis (RO) units. Typical drinking water applications are: individual water home systems, hotel and tourist resort applications, rainwater harvesting, remote settlements or villages.

SolarUV 10.0 specifications

Water treatment technology	UV-Disinfection Technology
Nominal production capacity	10 m ³ /day
Solar energy source	150 W _p solar PV
Battery system	24 V, 50 Ah
UV reactor (inline)	22 W, 400 J/m ³
Integrated pre-treatment	Cartridge filter or automatic backflush filter (according to water quality)
Control system	PLC for process automation
Optional borehole pump	Solar driven, up to 100 m depth
Optional integrated or external storage tank for product water for higher grades of autonomy	500 liter integrated storage tank with submerged UV disinfection lamp (9 W) and periodical automatic water circulation through UV reactor.
Optional security feature	Water disinfection control via UV intensity guard and automatic adaption of volume flow
Housing	Weather resistant housing
Dimensions	1.25 x 0.3 x 1.10 m
Weight	80 kg



UV Disinfection technology

Ultraviolet Disinfection (UV) is a physical and 100 % chemical free disinfection technology that does not produce any disinfection by-products. UV-lamps or -reactors mainly emit UV-C radiation with wave-lengths between 240 to 280 nm. This radiation initiates a photochemical reaction that destroys the reproductive capability of microorganisms like bacteria and viruses. UV-disinfection is more effective against viruses than chlorine. Even parasites which are extremely resistant to chemical disinfectants are efficiently reduced. An UV-intensity of 400 J/m² is needed for an efficient deactivation (> 99,99 %) of pathogenic microorganisms.



About SolarSpring

SolarSpring, a Fraunhofer spin-off company, is a developer of clean water systems using clean energy sources. We use solar thermal, photovoltaic (PV) or waste heat energy to power water treatment technologies such as membrane distillation and ultrafiltration. Our expertise is in the design and integration of water treatment systems that operate on low or intermittent energy sources.

SolarSpring is a pioneer in membrane distillation systems driven by solar energy. The first field system was deployed in the Canary Islands in 2004 and is still in operation today. Systems have now been installed in countries from Mexico to the Middle East, Africa and Australia.

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