

VillageWater™ 850



Features:

- Completely Self-Contained
- Solar Powered with Foot Pump
- Assembles in Less Than an Hour
- Save Lives with Awesome Water Quality
- Reach Remote Villagers with VillageWater's Compact Design

Product Configurations:

Product #	Water Source	Flow Rate (Liters/Hr)	People / Day	Hrs of Sun / Hrs of Operation	Solar Panel	Water Pump	Pressure Regulator
850W	Well	340	850	10 / 10	30W	Foot pump	n/a
850S	Surface ¹	340	850	10 / 10	30W	Foot pump	n/a
850T	Elevated Tank ²	340	850	10 / 10	30W	n/a	n/a
850P	Domestic ³	340	850	10 / 10	30W	n/a	Included

Product Specifications:

Max Flow Rate	340 liters / hour (90 gal / hour)
Disinfection Rate	U.S. EPA quality: bacteria and viruses
Dimensions	1.2m x 0.9m x 0.6m (4ft x 3ft x 2ft)
Weight	64 kg (141 lbs)
Power Source	Two 15W solar panels and foot pump
Operating Temp	2 °C to 43 °C (35 °F to 110 °F)
Max Water Temp	32 °C (90 °F)
Design Life	5 years (<27 bulb starts / day)

A prior version of VillageWater has been demonstrated to remove more than 99.9999% of bacteria and more than 99.99% of viruses at flow rates up to 2,650 liters per hour from visually clear water at 25 degrees C under circumstances similar to the United States Environmental Protection Agency's Guide Standard and Protocol for Testing Microbiological Water Purifiers during testing performed at The University of Arizona, Tucson, AZ, USA.

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¹ Source: Lake, River or Stream. System includes Input hose, Stainless Steel Source & Inline Strainers.

² Elevated input tank not included. Pump not required or included.

³ System uses water pressure regulator (included). Pump not required or included.

Note on VillageWater Purity Test Results:

The prior version of VillageWater has been demonstrated to remove more than 99.9999% of bacteria and more than 99.99% of viruses at flow rates up to 2,650 liters per hour from visually clear water at 25 degrees C under circumstances similar to the United States Environmental Protection Agency's ("U.S. EPA") Guide Standard and Protocol for Testing Microbiological Water Purifiers during testing performed at The University of Arizona, Tucson, AZ, USA.

Because the prior version of VillageWater disinfected 7 logs of waterborne viruses, it irradiates water with high levels of ultraviolet light (UV-C light). Its high disinfection rate for viruses suggests it disinfects at least the minimum rate of protozoa required by the U.S. EPA Guide Standard because more UV-C light is required to disinfect viruses than protozoa. If a purifier disinfects viruses with UV-C light, then it necessarily disinfects protozoa too. The U.S. EPA publishes the UV-C light levels needed to disinfect viruses, as well as other pathogens, to its Guide Standard.

Table: UV-C Irradiation Requirements – millijoules per centimeter squared (mJ/cm²)

Target Pathogens	Log Disinfection							
	0.5	1	1.5	2	2.5	3	3.5	4
Cryptosporidium	1.6	2.5	3.9	5.8	8.5	12	15	22
Giardia	1.5	2.1	3	5.2	7.7	11	15	22
Virus	39	58	79	100	121	143	163	186

The U.S. EPA Guide Standard requires 4 log (99.99%) disinfection for viruses. A purifier must deliver a UV-C irradiation of 186 mJ/cm² to disinfect 4 log of viruses. The US EPA Guide Standard requires 3 log (99.9%) disinfection for Cryptosporidium and Giardia (two common protozoa). To disinfect Cryptosporidium and Giardia to 3 log, a purifier must deliver a UV-C irradiation of only 12 mJ/cm².

Because the 186 mJ/cm² of UV-C irradiation needed to disinfect viruses is substantially greater than the 12 mJ/cm² irradiation needed to disinfect Cryptosporidium and Giardia, any purifier that delivers UV-C irradiation of at least 186 mJ/cm² will kill Cryptosporidium, Giardia and viruses to the U.S. EPA Guide Standard. VillageWater's outstanding performance (7 log) on viruses disinfection suggests that it easily disinfects the Cryptosporidium and Giardia to the minimum set by the U.S. EPA Guide Standard.

Increased dissolved solids, total organic carbon and turbidity, along with decreased temperatures, will reduce the effectiveness of this unit.