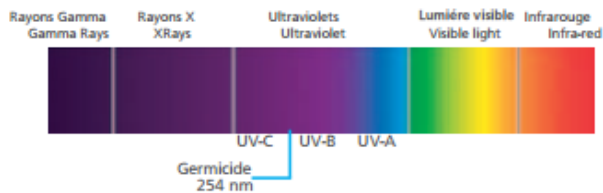


# Biosun Water Purification Systems

## The Principle



At 254 nanometres, the optimum wavelength to eradicate micro-organisms (viruses, bacteria, algae, yeasts, moulds, etc.), the UV-C radiation penetrates the heart of the DNA and disturbs the metabolism of the cells until they are totally destroyed. This deactivates all the germs (including the cholera bacterium and Cryptosporidium) and prevents them from reproducing.

## The effective dose

BIO-SUN is dimensioned according to the flow rate, in order to guarantee the dose required (expressed in  $\text{mJ}/\text{cm}^2$ ) sufficient to eradicate at least 99.9% of the micro-organisms (bacteria, viruses, algae in suspension, etc.).

BIO-SUN guarantees the microbiological safety of the drinking water and enables the elimination of waterborne diseases, particularly in underprivileged peri-urban areas (townships, etc.). You just have to fill up the tank with the water\* to be disinfected. The water is subjected to fine filtration and is disinfected using ultraviolet light (UV-C). In a few seconds the water is safe to be consumed for vital needs.

## Characteristics

- Patented concept,
- Terminal with rugged and hard-wearing composite material housing,
- Filter on a zeolite bed that can be backwashed (very effective technology due to its quality and fineness),
- Activated carbon filter in option,
- Treatment of approximately 500 litres/hour with  $400 \text{ J}/\text{m}^2$  (dose required to make water drinkable),
- 3-day run time, with 4 hours of daily production,
- Supply to the tank:
  - Manual, by 20 l container. In this case, a pump inside the terminal guarantees the necessary pressure for filtration,
  - Via a connection to the mains network (between 1.5 and 3 bar),
  - On the outlet of a borehole/catchment pump with an independent power supply (between 1.5 and 3 bar),



- In the latter two cases, the BIO-SUN internal pump is not required,
- Service life of the UV lamp: 1 year.

## Advantages

- Autonomous water purification station operating with photovoltaic energy,
- Water is made microbiologically safe,
- Drinking water supply for 80 to 100 persons per day (in accordance with WHO standards),
- Low-cost production of drinking water,
- Cost of consumables less than  $\text{€}0.27/1,000\text{L}$  of water treated,
- The terminal can be fixed on a masonry base, or built into the wall of a building (using local materials and labour),
- Simple design, easy maintenance,
- Contribution to local economic development, making users more responsible (installation, maintenance).

Technical Data	BIOSUN 85	BIOSUN 340
<b>OPERATING FEATURES</b>		
Flow	500 liters/hour	500 liters/hour
Number of hours of production per day	4 hours	4 hours
Volume produced per day	2 m <sup>3</sup>	2 m <sup>3</sup>
Operating range	3 days	3 days
Drawing of well water	Manual valve	
Volume meter	Electronic remote control locking to zero	
On-off switch of the UV reactor	Yes, with indicator light included	Yes, with indicator light included
<b>WATER SUPPLY</b>		
Volume of the tank	20 liters	20 liters
Materials of the tank	Stainless steel 304L	Stainless steel 304L
Type of supply	Under pressure network, 1,5 bars	Manual or supply <1
Maximum pressure	3 bars	3 bars
Pump	-	24V DC with pressure switch built in
<b>FILTRATION</b>		
Filtration media	Zeolite	Zeolite
Volume of the filter	7 liters	7 liters
Filtration limit	<10µ	<10µ
Backwash	Manual, with a set of 3 ways valves	
Size of the cartridge (optional)	10"	10"
<b>UV REACTOR</b>		
Power of the UV lamp	14 W	14 W
UVC power delivered	4.6 W	4.6 W
Activation light of the UV	Yes	Yes
Dose delivered	40 mJ/cm <sup>2</sup>	40 mJ/cm <sup>2</sup>
Ballast	Electronic 24 VDC	Electronic 24 VDC
Voltage	24 VDC	24 VDC
Lamp lifespan	13,000 hours	13,000 hours
<b>CARTER</b>		
Materials	Fiber glass and polyester cover: especially for outdoor use	
Dimensions	Height 1400 mm x Width 600 mm x Depth 396 mm	
<b>PHOTOVOLTAIC SUPPLY</b>		
Number of solar panels	1	4
Size of the panel (per unit)	1200 x 600 mm	1200 x 600 mm
Power and voltage of the panel	85 W/12 V	85 W/12 V
Fixing of the panels	Built in the frame	Holder/stand transported (on the roof, on the ground...)
Number of battery	1	2
Type of battery	70 Ah (C100), 60 Ah (C20), 12 V	70 Ah (C100), 60 Ah (C20), 12 V
<b>DIMENSIONS</b>		
Height	140 cm	
Length	60 cm	
Width	40 cm	
Weight	100 kg	

\* the water used must not be heavily polluted by large quantities of sludge nor must it contain high levels of pesticide-type residues or high concentrations of other contaminants such as heavy metals and/or organic matter.