

## Water is a Global Problem

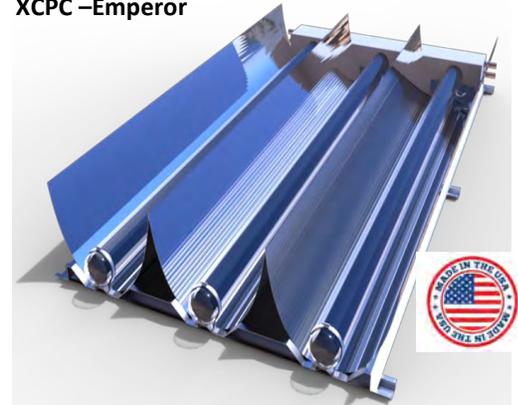
- Rain water cannot be used in food production due to pathogens collected off the roof.
- 1 in 10 People globally do not have access to clean water.
- 800 children die every day from disease related to dirty water.
- A newborn dies every minute as a result of the lack of clean water and an unclean environment.
- 42% of Health Care facilities & 31% of schools in Africa do not have safe water.

Artic Solar is making a difference with Solar Thermal Pasteurization and Distillation systems.

**Pasteurization**—Solar Thermal generated by the XCPC collector at 200°F will kill all the pathogens in dirty or unsafe water. Cleaning rain water for human or agricultural use. Filtered water to remove solids and Pasteurization can be applied to food crops and human consumption safely.

**Distillation** – The boiling and evaporation of dirty water will produce clean vapor that can be condensed back to water and provide clean and safe water for Hospitals and Health Care Facilities or evaporation and disposal of waste water.

XCPC –Emperor



## What Makes Us Different

- ⓐ Non-tracking design = no moving parts reduces or eliminates O&M costs
- ⓐ 53% efficient for temperatures up to 400°F
- ⓐ Non-imaging optics allows for use from sunrise to sunset regardless of cloud cover
- ⓐ Low cost solutions for Clean water



6—XCPC Collector array for pasteurization of rain water at Traders Hill Farm in Hilliard, Florida

Uncontrolled water withdrawals, land-use or deforestation, climate change and population growth are altering the global water cycle. We at Artic Solar pride ourselves on being able to make a difference.

Research and testing has proven our advanced solar thermal technology reaches temperatures high enough to distill or pasteurize water. We also realize the lack of power in these villages. Therefore, we designed the system to operate with the power of the sun. Using PV to provide DC power to run a circulator and we thermosiphon the collector array to transfer the heat.

Each XCPC collector will produce 1.5kW/hr which will pasteurize up to 5-gallons of water per hour. Each system contains 3 collectors which will clean approximately 120-gallons of water per day (depending on climate).

Distillation would use the solar array to evaporate dirty water then condense the vapor to make distilled water. Water safe and pure enough to use in Hospitals and Medical Clinics. Distillers are a little more complicated so we would prefer to customize the system for the desired daily output and size the solar array, evaporator and condenser for the location.

### **Clean Water is:**

- Safe to consume and drink.
- Safe to use on food products.
- Safe water for a healthy child.

