Air To Water

XDOBS.COM LLC 800-658-8745

info@a2wh.com Heber City, UT USA

Water from air with no electricity

High purity water

Net positive producer of electricity

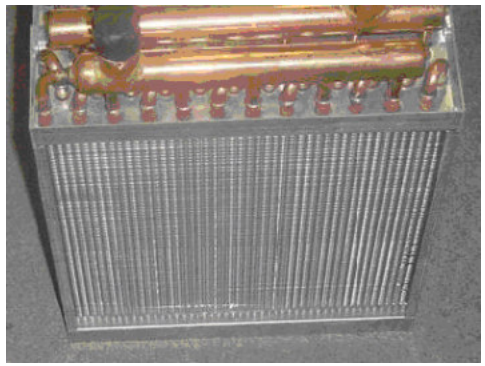
Uses Night Radiant energy to send heat into night sky.

Overview

- Produces water by chilling local air below dew point temperature
- Broad range of operating conditions
  - Designed for humid region, but operates in other regions
- Does not require external power source
- Uses less than 1% of power required by a typical Atmospheric Water Generation system
- Power provided by integrated solar panel

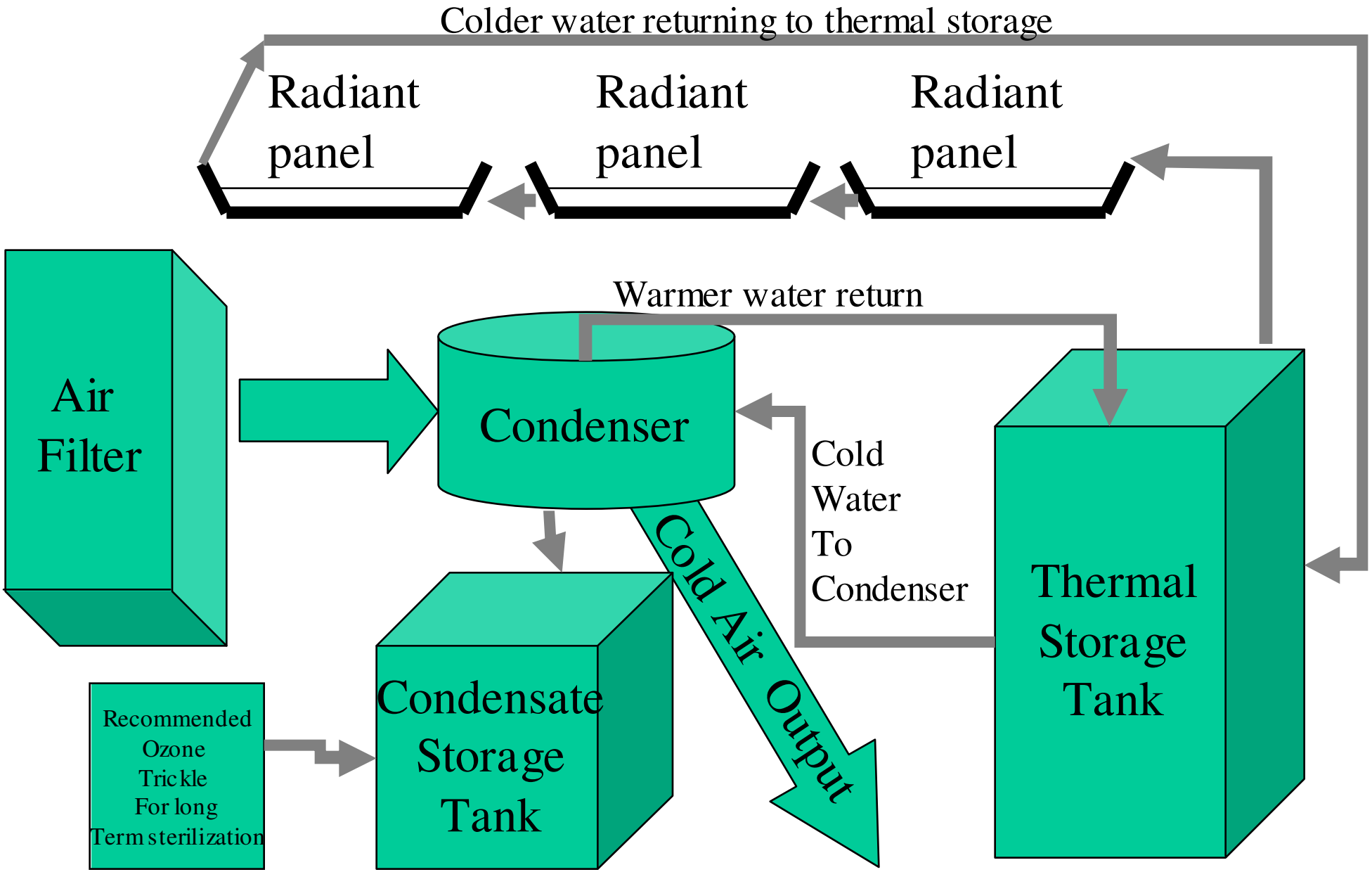
System Components

- Night Radiant panels
  - Optional Thermal / wind shield
- Primary Heat Exchanger / Condenser
- Other Components
  - Micro Controller, Pumps, Valves, Blower,
  - Solar Charger, Battery
- Optional rain capture system
- Optional Thermal Storage Tank
- Optional Wind boost chilling compressive chilling system.



A2WH - System Overview

With Thermal Storage



Night Radiant panels

- Temperature 8F-20F below atmospheric temperature
- Designed to minimize convection and conduction and maximize radiation heat transfer
- Designed to last over 20 years in outside atmospheric conditions
- Dissipates between 100-140 watts of heat /square meter panel

- 33 square foot per gallon per night
- 8.8 square foot per liter per night
- 4950 liters per acre per night

Thermal / Wind Shield

- Prevent convective warming of radiator surface
- Provides stagnant cold insulating layer of air.
- Helps reduce the temperature by 3F
- Should be installed in area where wind speed is greater than 3 MPH. Effective to 8 MPH.

Optional Wind boost

- Directs wind way from panels
- Converts wind energy to additional chilling energy
- Increase production by 50% with 7 hours per night of 8 MPH wind.
- Allow system to be used in warmer and drier climates
- Provides up to 40F of additional chilling.

Primary Heat Exchanger / Condenser

- Chills air during high absolute humidity time of the day
- Provides condensing surface for the water
- Precisely Controlled to maximize condensation
- Exit air can be used as conditioned air for cooling
- Effective when thermal storage fluid is at least 2F below current dew point.
- Note: systems without thermal storage must do condensing during the night.

Thermal Storage Tank

- Optional use for improved performance
- Stores cold at night to use during best humidity conditions
- Sized as 120 to 300 gallons per gallon of condensate per day
- Ideally buried and insulated
- Average system requires 60 to 120 days of production to replace water invested
- Alternatively, salt water can be used
- Tank is usually provided locally
- Existing cisterns can be used for thermal storage with addition of insulation

Micro Controller, Pumps, Valves, Blower, Solar charger, Battery

- Controls airflow through the system
- Controls thermal conditions for optimal broader range of operation
- Thermosyphon is used whenever possible to eliminate or reduce pumping power
- Thermal drop concept is used for air flow to eliminate fan energy
- Heat pipe can be used to eliminate pump energy
- Optional Geoexchange heat pump can supplement water production during marginal conditions.