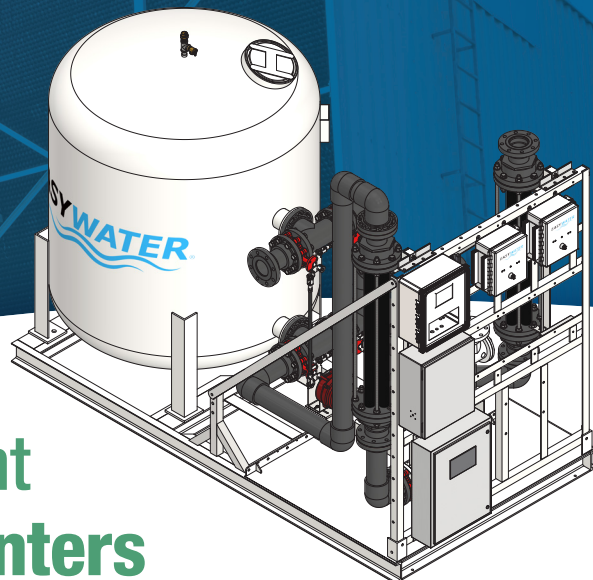


CTF System



Cooling Tower Water Treatment for Mission-Critical Data Centers

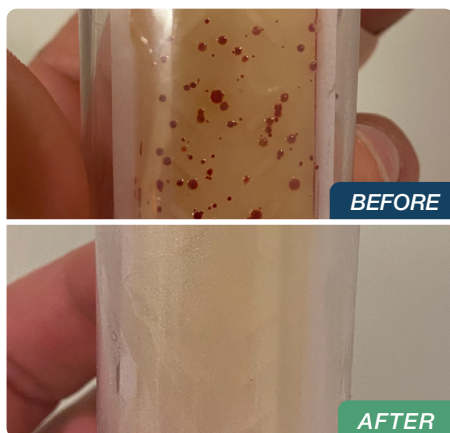
An innovative way to reduce scale, corrosion, contaminants and Legionella risk in cooling towers.

Why Cooling Towers Are High-Risk in Data Centers

- ▶ Scale and biofilm reduce heat-transfer efficiency across condenser and heat-exchange surfaces
- ▶ Elevated bacteria and Legionella risk require continuous biological control
- ▶ Fouling increases energy consumption and ongoing maintenance requirements
- ▶ Chemical programs introduce operational, safety, and regulatory complexity

Observed Results from Mission-Critical Cooling Tower Applications

- ▶ **Energy Savings:** Up to 45% by reducing biofilm & scale
- ▶ **Chemical Use:** 80–90% reduction
- ▶ **ROI:** 0.5–3 years
- ▶ **Longer Equipment Life:** Less corrosion & scale
- ▶ **Lower Maintenance:** Fewer intervention & downtime
- ▶ **Safer & Greener:** Fewer chemicals, lower bacterial risks, safer for people and the environment
- ▶ **Water Savings:** Potentially less blowdown, effective treatment of reused or alternative water sources



Bacterial dip slides showing reduction from 10^5 to 10^0 within two weeks



Improved sump water clarity after two weeks of CTF System operation



Algae in the cooling tower sump basin reduced after two weeks

“In less than 3 weeks of CTF treatment, the bacteria levels went from 10^5 to 10^0 , and Legionella from 1,790 to None.” — Boca Raton Regional Hospital

How the CTF System Works

A three-stage approach designed for continuously operating cooling tower systems



1. Sub-Micron Filtration

Removes fine sediment and suspended particles using proprietary sub-micron media that backwashes clean, reducing turbidity and particulate fouling.



2. UV Disinfection

Provides continuous UV disinfection to reduce bacteria, algae, and Legionella, with filtration and conditioning stages improving clarity and preventing deposits for optimal UV performance.



3. No-Salt Conditioning

Prevents and removes scale and biofilm without chemical addition, improving overall system cleanliness and helping maintain heat-transfer efficiency.

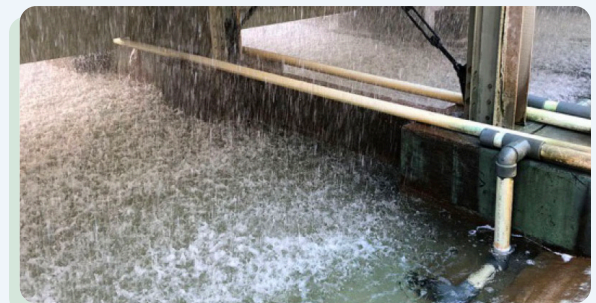


OPERATIONAL IMPACT

- ✓ Cleaner basins and lower biological loading support stable operation
- ✓ Lower chemical dependency simplifies ongoing water treatment
- ✓ Reduced fouling helps limit maintenance interruptions
- ✓ Supports large, multi-cell cooling tower system configurations

ENERGY IMPACT

- ✓ Scale and biofilm degrade heat-transfer efficiency at condenser surfaces
- ✓ Fouling increases fan, pump, and chiller energy demand
- ✓ Cleaner systems operate closer to original design efficiency
- ✓ Reduced chemical dependency lowers treatment overhead and system variability



Designed for high-reliability data center cooling environments.

