



eVOQUA
WATER TECHNOLOGIES



COOLING WATER SOLUTIONS FOR DATA CENTERS

TRUSTED PARTNER FOR MISSION CRITICAL ASSET PROTECTION



COOLING WATER SOLUTIONS FOR DATA CENTERS

Data centers today are energy intensive, 24/7 facilities requiring a large amount of cooling to operate. The building's cooling capabilities play a role in limiting server performance. In many cases for every 100 watts used to power the server, 50 watts is required to cool it. The critical design parameter for these large and complex continuous systems is performance per watt. As a result, **maintaining effective and continuous cooling is critical to server performance.**

Each day thousands of gallons of water can flow through an average data center cooling system bringing with it debris, scale, and biological activity. The fine particulates, under 5 micron in size, build up over time and are the leading contributors to fouling of heat transfer surfaces resulting in decreased energy efficiency and ultimately a less effective cooling system. Additionally, maintenance and operational expense are significantly impacted as particulate builds in a cooling water system.

Plant managers and engineers are in need of high performing, efficient cooling solutions to mitigate the risk of their data center failing or experiencing downtime.

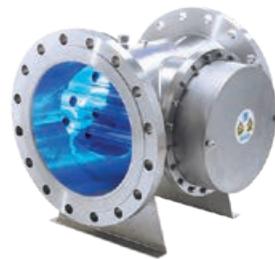
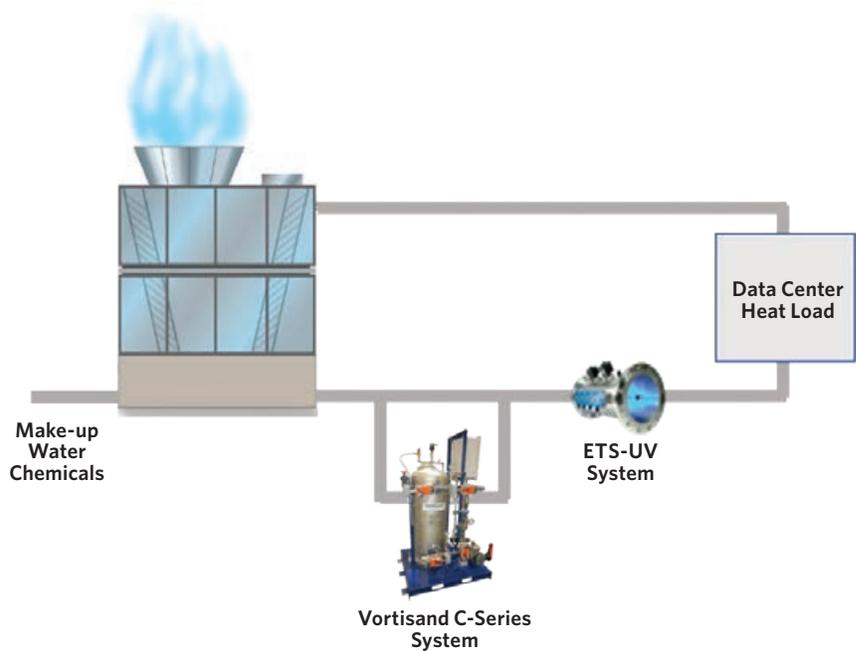
EXPERIENCED INDUSTRY LEADERS IN COOLING WATER TREATMENT

Evoqua is a proven provider of cooling water treatment with over 200 data center installations worldwide and 30 years experience in the industry. By combining our Vortisand® cross-flow microsand filter and ETS-UV™ disinfection generator, optimal data center cooling performance can be achieved.

- **Provide superior filtration of particles 5 micron and below.** Particles 1-5 micron in size are most likely to form build-up on heat transfer surfaces which increases energy consumption. By removing these particles, fouling is less likely to occur.
- **Reduce energy usage, improve power usage effectiveness (PUE).** PUE is directly impacted by water quality. The better the water quality, the lower the PUE. Remove the fine particulate and reduce energy consumption.
- **Reduce biocide and chemical usage.** Continuous UV dosing allows for up to 75% less biocide use.
- **Decrease maintenance costs.** Less frequent manual cleanings are required as there is less build-up on process equipment and in the cooling tower basin.
- **Provide a safer environment.** By reducing chemical use and treating microbial growth with UV, the facility will be safer for maintenance employees and building occupants.
- **Reduce water consumption.** The Vortisand filter requires up to 40% less water to backwash than traditional media filters.
- **Meet sustainability goals.** Less energy and water consumption, along with decreased chemical use and a safer environment for building occupants, means a more environmentally friendly facility.

WATER TREATMENT TECHNOLOGIES FOR DATA CENTERS

The recommended solution for a data center facility is to have a Vortisand® filter on the side stream of the cooling tower and an ETS-UV™ generator treating the full flow of the cooling tower. This reduces both particulate and harmful microbial growth.



VORTISAND HIGH EFFICIENCY CROSS-FLOW MICROSAND FILTRATION SYSTEMS

Technology Benefits for Data Center Cooling Water

- Reduces build-up of fine particulate 5 micron and below that collects on heat transfer surfaces and decreases energy efficiency. The cooling system is kept running at peak performance with minimal maintenance required
- Enables UV disinfection to do its job more effectively. Particles are not accumulating and blocking the UV from penetrating the microbes
- Requires up to 40% less water to backwash than conventional media filters
- Features a cross-flow technology that allows for higher filtration rates, but one of the smallest footprints of any media filter

ETS-UV DISINFECTION SYSTEMS

Technology Benefits for Data Center Cooling Water

- Works to inactivate harmful microbial contaminants prone to develop in cooling systems
- Allows for up to 75% decreased biocide/chemical use when converting to continuous UV and intermittent biocide
- Requires no storage, handling or transportation of toxic/corrosive chemicals
- Microbial tolerance concerns eliminated compared to low dosage biocide use
- Cannot be overdosed as is the case with chemicals



3584 Boulevard Poirier, Montreal, Quebec, H4R 2J5 Canada

+1 (888) 876-9655 (toll-free)

+1 (514) 335-2200 (toll)

www.vortisand.com

www.evoqua.com

Vortisand and ETS-UV are trademarks of Evoqua Water Technologies LLC, its subsidiaries or affiliates in some countries. All other trademarks are those of their respective owners.

All information presented herein is believed reliable and in accordance with accepted engineering practices. Evoqua makes no warranties as to the completeness of this information. Users are responsible for evaluating individual product suitability for specific applications. Evoqua assumes no liability whatsoever for any special, indirect or consequential damages arising from the sale, resale or misuse of its products.

© 2020 Evoqua Water Technologies LLC and Neptune-Benson, Inc Subject to change without notice VS-DATACENTER-BR-0820