evoqua
WATER TECHNOLOGIES

VXM RANGE - ULTRAVIOLET DISINFECTION SYSTEM

UV FOR DECHLORINATION OF WATER

Chlorination provides significant benefits in the disinfection of water. Most municipal water supplies have small amounts of residual chlorine present in the water. However, for many industrial processes, the presence of chlorine in the feedwater is undesirable. For many items of process equipment, such as RO, the chlorine—even small quantities, can damage equipment. In the food and beverage industry, chlorine can introduce unwanted flavors and odors to the final product as well.

It is common therefore to require dechlorination. Typically, the most common forms of dechlorination are sodium metabisulphite and granular activated carbon. As a chemical, sodium metabisulphite has all the associated chemical issues—maintenance of dosing equipment, handling, recording and potential odor and taste problems. GAC also has drawbacks. The GAC media itself can become a breeding ground for microorganisms and needs to be regularly cleaned and sanitized. Frequent replacement of the media is required resulting in additional operating costs. Finally, as a filter, GAC also has an additional pumping requirement to overcome any headloss within the filter itself.

THE UV ADVANTAGE

UV is an alternative method of dechlorination due to its key advantages:

- No chemicals are added to the water
- No significant headloss is added to the piping system
- UV acts as a powerful disinfectant and is effective versus chlorine resistant organisms such as Cryptosporidium
- UV is located in the piping system and requires very little space, ideal for retrofits
- The equipment requires little maintenance and is easily integrated into SCADA/BMS systems

The VXM products are very suitable for the dechlorination of water, providing a high level of power density within the product. This is necessary as dechlorination requires considerably higher doses than standard disinfection. Depending on inlet concentrations and the required level of dechlorination, doses may varry.

SPECIFICATIONS

- Designed for very high dose applications
- Efficient and enhanced power control
- High performance lamps
- Simple, fast, and reliable maintenance
- Enhanced performance monitoring and integration by sophisticated control system
- Built in safety features
- High power density suitable for dechlorination and other high dose requirements.
- MODBUS® or PROFIBUS connectivity

HIGHLY EFFICIENT & COST EFFECTIVE

Using energy efficient UV lamps and the latest variable power electronic ballasts, the VXM products provide cost-effective and efficient liquid treatment with flexible options for easy integration. The medium pressure polychromatic lamps, combined with the variable power option allows the operator to minimize OPEX costs while still delivering the required dechlorination levels. The range of options, from surface finishes to pipe connections allows the user to configure the product easily to their specific requirements either for pharmaceutical, food and beverage or any other process requiring dechlorination.

SOPHISTICATED CONTROL SYSTEM

The Spectra 3 control system is a sophisticated microprocessor designed for control flexibility and system integration. The Spectra 3 allows full integration into production process lines, and is essential for applications of this type, with a range of user-selectable analog, and digital input and outputs, combined with Modbus® capability. The Spectra 3 also provides data logging capability for quality records and monitoring.

TwistLok Lamp Configuration

Spectra 3 Controller

INCREASE PRODUCTION UPTIME

Operators will benefit from the patent-pending* TwistLok™ lamp configuration, combining a simple lamp connection with a mechanical safety interlock for safe and speedy lamp replacement. In addition, the V-Clamp quartz system into the system ensures that the seal can be fitted accurately without stressing the quartz sleeve or having a leaking seal. The systems use the latest AT-900 UV intensity system, traceable to NIST standards to provide an effective method of monitoring performance, ensuring confidence in the system operation at all times. Using the feedback from the AT-900 also enables the power to the lamps to be varied depending on the quality of liquid to be treated, allowing power savings and increased lamp life.

Performance is not claimed nor implied for any product not yet validated; unvalidated products use single point summation calculations to provide delivered dose recommendations. Performance limitations depend on feed conditions, overall installed system design, and operation and maintenance processes; please refer to Operations Manuals. For more information: contactus@evoqua.com

*Patent pending in some countries.

CHAMBER SPECIFICATIONS

Features	Standard Chamber Specification	Options
Lamp Life	9,000 Hours	
Lamp Design	TwistLok™ Quick Release, Enhanced Safety, Medium Pressure Lamp	
Lamp and Wiper Access	Single Ended Access (Excl VXM-125-4 + VXM-180-3/4)	
Design Pressure	150 psi Design (225 psi Test)	
Variable Power	100% to 30% Power (Automatic Dose Pacing)	
Connection Type	ASME Class 150	EN 1092 PN10, EN 1092 PN16, DIN 32676, ASME BPE DIN 11851 (VXM-180-3 Only)
Material Construction	316L Stainless Steel	
Internal Surface Finish	32 Ra (VXM-25-4/6, VXM-180-3/4 Only) 63 Ra (VXM-260-10, VXM-460-10, VXM-660-10, VXM 860-12 Only)	16 Ra (VXM-25-4/6, VXM-73-4 Only) 32 Ra (VXM-260-10, VXM-460-10, VXM-660-10, VXM 860-12 Only)
Internal / External Surface Treatment	Machine Polish	Electropolish (VXM-25-4/6, VXM-180-3/4 Only)
Quartz Type	High Purity Quartz Thimble/Sleeve	TiO2 Doped Quartz Thimble/Sleeve
Installation / Mounting	Adjustable Inlet/Outlet Orientation	Z-type (VXM-180-3/4 Only)
Wiper System	Not Included as Standard	Automatic Wiper System (Excl VXM-180-3)
Sensors	1 Monitor Package Incl NIST UV Sensor + PT100 Temp Sensor	
Vent Port	NPT	BSP, DIN 32676, ASME BPE DIN 11851
Drain Port	NPT	BSP, DIN 32676, ASME BPE DIN 11851
Seals	EPDM	

CONTROL PANEL SPECIFICATIONS

Features	Standard Control Panel Specification	Options
Material	Epoxy Coated Mild Steel - RAL 7035	Stainless Steel (304)
Control Type	Microprocessor	
Power Supply	Electronic Ballast	
Panel Rating	NEMA12	
Ventilation	Forced Air Cooled (Fan)	
Interface	Spectra Membrane	Spectra Touch
Communication	Modbus (RS-422 / RS-485)	Profibus DP
Protection	Door Locked Isolator	
Operating Temperature	Max Working Ambient +113°F	
Digital Inputs / Outputs	3 Selectable	Additional 3
Analogue Inputs / Outputs	1 Selectable	Additional 1

TRANSFORMING
WATER
ENRICHING
LIFE

evoqua
WATER TECHNOLOGIES

558 Clark Road Tewksbury, MA 01876

+1 (866) 926-8420 evoqua.com

Disinfection performance will vary based on product, system design, facility operating conditions, water quality, and maintenance protocols. Refer to product, system, installation and validation documentation for details.

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.

DS-VXM-DECHLOR-EN-US-PS-0823