

Triangularwave TECHNOLOGIES, Inc. (TWT®)

# QUATTRA-UV50 (50 GPM)

## Effluent Wastewater Treatment System



This ultraviolet disinfection/purification system is ideally suited for commercial/ industrial and marine effluent applications.

The Quattra UV50 treatment system is a small footprint, high dose disinfection sterilizer unit for the treatment of effluent wastewater. It is equipped with a pneumatic air drive wiper system (on-site air required) for low maintenance operation and is very well suited for use aboard ship and other applications where space is at a premium.

The Quattra UV50 has an automatic integrated pneumatic wiper system to maintain lamp efficiency and a proprietary UV reaction chamber, designed to increase the dwell time inside the chamber. Engineered and designed to provide a very high UV dose, extended dwell time at rated flow of 50 GPM,

The Quattra UV50 is designed to significantly reduce bacterial load in effluent wastewater and is an integral part of a full wastewater treatment program.

### Specifications

**Clear Water Rated Flow:** 189 liters per minute (50 GPM)  
11,340 liters/hour, 272,160 liters/day  
(3,000 gallons/hour, 72,000 gallons/day)

**Initial UV Dose Rated Flow:** 40 mJ/cm<sup>2</sup> (40,000 uwsec/cm<sup>2</sup>)  
@ 95% T

**Electrical:** 110-130V / 50-60 Hz or  
220-240V / 50-60H

**Number of Lamps:** 4 (at 44 watts each)

**Maximum Operating Temp:** 40°C (104°F)

**Maximum Operating Pressure:** 125 psi - 8.6 bar (tested to 500 psi)

**Plumbing:** 1 1/2" MNPT In/Out

**Chamber Material:** 304L Stainless Steel (316L available)

**Control Panel:** Integrated UV- Monitor

### Optional Features

Solenoid Valve  
Deposit Control Technology  
NEMA 4X Control Panel  
Alternate Current Source  
All Available Upon Request



### Fail-Safe Operation

The Quattra UV50 treatment system is equipped with a control panel that has an integrated UV Monitor to monitor the UV light intensity in real time. A solenoid valve (optional) can be driven by the monitor to shut off the flow of water if an inadequate UV power is detected.

This industrial water purification system offers very efficient water treatment at a low cost per unit volume. The system is designed for ease of installation and is fully tested prior to shipment.

# Recommended component configuration for the combined use of TWT® Deposit Control Technology, Ultraviolet (UV) Disinfection & Purification System

Technologically advanced Microprocessor Deposit Controller, Reaction Chamber, and UV Disinfection units are combined to provide an enhanced effluent waste water treatment system. TWT solutions are scalable to fit your industry specific application, contact us to discuss the system that works best for you!

## TWT Patented Deposit Control Technology:

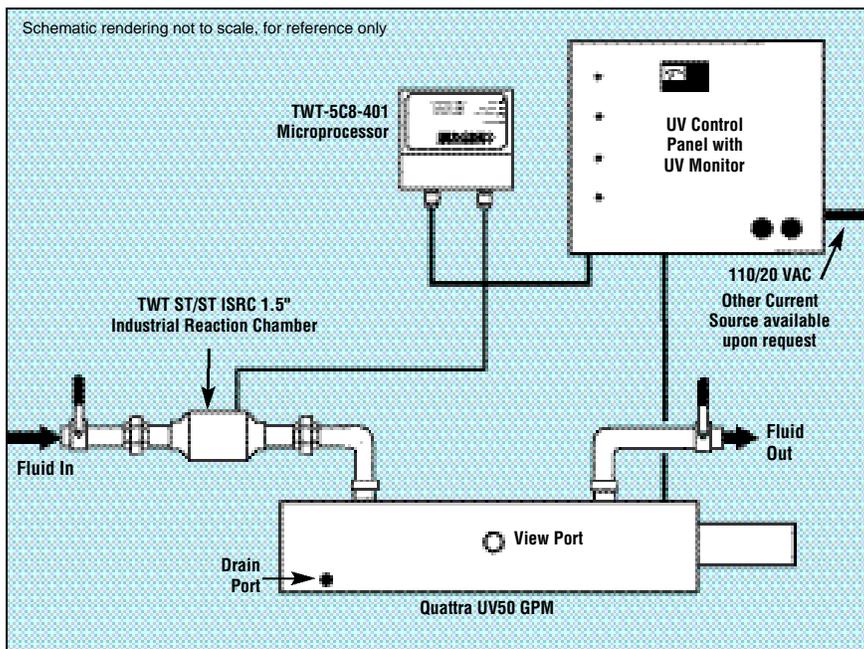
The basic component in the TWT® systems is the deposit controller. The microprocessor is a patented controller that functions like a computer to relay a continuous electrical power supply to the solenoid coil reaction chamber. The reaction chamber is plumbed into the fluid line just before each piece of vital processing equipment, and provides a factory-wrapped wire coil forming a solenoid. The solenoid conveys the triangular wave signal at the appropriate power level (as allowed by the model chosen) to the fluid passing through the chamber.

This signal constantly changes the polarity, frequency, and amplitude of the current entering the fluid. This triangular wave treatment produces several benefits. **It increases the capability of the fluid to hydrate scale ions and other colloidal particles.** In effect, the surface charge of the hydrogen molecules is enhanced and the fluid is made "wetter". This "hydrated" fluid can dissolve unwanted particles, suspend them in solution, and allow them to be easily filtered out or flushed from the system. Accordingly, the mineral and biological particles that cause scale, deposits, and corrosion are dissolved and washed away.

This means that the breeding environments for bacteria, such as bio-film and corrosion, are eliminated. The agitation created in the reaction chamber also disrupts the conditions essential for the normal reproduction of bacteria and they die. **If left untreated, scale build-up inside the reaction chamber and on the quartz sleeve containing the UV lamps may rapidly diminish the UV disinfection effectiveness by reducing the amount of UV light which is absorbed into the fluid stream.** The TWT Deposit Control System will further condition the treated fluid stream so as to prevent this scale-build-up inside the UV reaction chamber, helping to maintain maximum UV life cycle and penetration into the fluid stream.

## Ultraviolet Disinfection

The UV disinfection technology is used in the system to provide safe fluids, free of disease-causing pathogens. As fluids pass through the UV chamber, UV light will attack and render harmless any bacterial, viral or spore contamination present in the treated fluid. High intensity UV light destroys these contaminants. The output fluid is thus disinfected and offers exceptionally high quality fluid for processing. The Quattra 50 UV has an integrated pneumatic wiper system to maintain lamp efficiency, and a proprietary UV reaction chamber designed to increase the dwell time inside the chamber. The system is engineered and designed to provide a very high UV dose via extended dwell time at multiple flow rates.



TWT Deposit Control & Quattra UV50 Integrated for High Volume Application



TWT-ISRC-1.5" Industrial StainlessSteel Reaction Chamber



TWT-5C8-401 Deposit Controller

University test proves Triangularwave Technologies, Inc. (TWT®) Deposit Control System reduces the fouling effects caused by "hard water" on the quartz sleeve and UV lamp inside the disinfection/purification unit while maintaining the residual effects downstream chemically free.

**The return on investment of a TWT Deposit Control System is undeniably significant from operational, economical, and safety points-of-view.**

