



Process
series

&

Waste
series

Reliability in the toughest conditions

Effective UV disinfection for highly contaminated water

Disinfecting highly contaminated water is a difficult task. At the same time, the discharge of waste water or reuse of water is subject to many requirements and regulations. In order to optimally serve organisations dealing with these problems, Van Remmen UV Technology has developed the W and P Series UV disinfection systems.

For reliable disinfection, when conditions are demanding.

Why the W and P Series?

Water has many different applications. Think of drinking water, swimming water, but also process water, cooling water or industrial water. All these types of water have their own requirements and pollutants. For this reason, they also require their own UV disinfection systems. This to continuously ensure microbiologically safe water, regardless of the circumstances. Our W and P series are specially developed for water with high levels of pollution and a low transmittance (light penetration).

W-series

The W series disinfects water with a transmittance ranging from 40 to 60%. This includes waste and reused water that must comply with discharge regulations. The shape of our reactor has been optimised for the strong pollution in the water. Moreover, we also use a custom Flow Management System (FMS), allowing for water disinfection of up to 120 m³/hour at a dosage of 300J/m². The design, FMS and low-pressure lighting in the reactor all together result in a system that ensures that every UV-C beam is effective,

not a single drop will escape and every harmful microorganism will break down.

Reliable and flexible

The W series' operating system is defined by its user-friendliness and level of support. The system records the operating hours of lamps and uses an alarm feature to report when the burning hours are (about to be) reached. The operating system can be expanded with a UV or temperature sensor and can be adapted depending on the circumstances. For example, the chamber can be made of plastic, ATEX regulations can be met, a vent and drain valve may be added and the system can be equipped with an automatic or manual wiper system for cleaning the quartz tube. In addition, a DNV-approved marine cable can also be attached.

P-series

The P series is suitable for disinfecting water with a transmittance (T₁₀) between 60 and 80%. This may

include the reuse of water in processes, industrial water, cooling water and all other flows that are subject to microbiological quality requirements. The series is optimised for all of these applications. The P series also uses a unique Flow Management System, allowing for the disinfection of 0.6 to 360 m³/hour water at a dosage of 300J/m². In comparison with similar models this is a much larger amount.

Optimal support

The control unit of this series is focused on ease-of-use and support for the user. It monitors performance with various alarm features, registers and monitors the operating hours of the lamps and can be adapted to company-specific wishes or requirements. Several additions are possible, such as a vent, drain valve, UV sensor, temperature sensor or blow-down valve. Finally, the system can also be made to comply with the ATEX regulations.

Total Cost of Ownership

Sustainability is in our DNA. For this reason, we use materials with a long service life and continually work on the energy efficiency of our systems. The W and P series are designed to use as little energy as possible to achieve the best possible result. This provides our customers with the most efficient and effective solution in terms of UV, a low total cost of ownership and fast payback times. Our systems offer the following benefits:

- **30 to 40% more energy efficient compared to other UV systems**
- **Optimal dosage distribution thanks to our Flow Management System**
- **Chemical-free control of organisms**
- **Low maintenance interval**

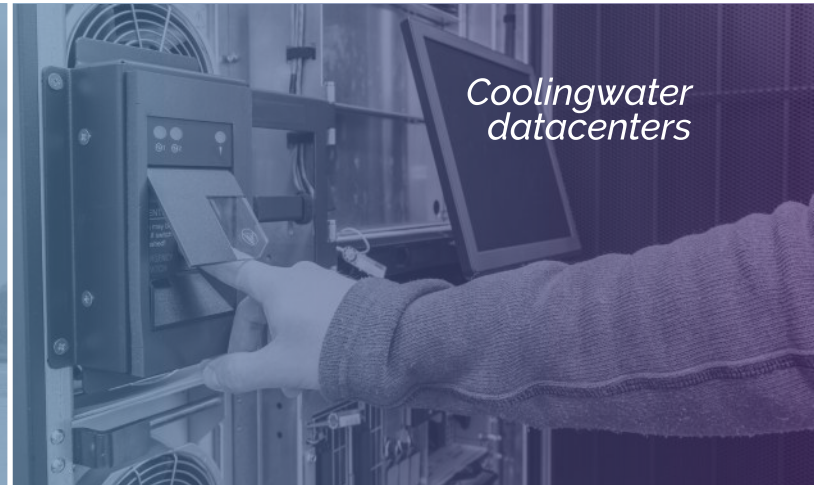


Applications

Marine & Offshore



*Coolingwater
datacenters*



*Process water
industry*



*Irrigation
agriculture*



*Recirculation
water fish farms*



*Wastewater
industry*



Cases

W-series



P-series



Waste water skids on ships

On a ship, you'll see billions of litres of water around. Waste water of ships cannot be discharged immediately back into the sea, it should meet strict discharge conditions and requirements. In order to protect the sea and environment, skids should be installed to treat this waste water. These skids are complete solutions provided with UV disinfection systems to treat the water and discharge it safely without damaging the environment.



Cooling Datacenter

Datacenters grow enormously in numbers and want to pursue an increasingly green image. In this example of an advanced datacenter, rainwater is collected in large buffers. Primary, the air is being used to cool, however in case of good weather with high temperatures, water cooling is necessary. The rainwater is not directly suitable for cooling. Pre-treatment requires the necessary steps, from filtration and disinfection to membrane filtration. Monitoring and surveillance are an essential part of this watertrain. UV disinfection in this case takes place with P-series units, equipped with transmission measurement and automatic quartz cleaning. Operational security and minimum maintenance are guaranteed. Chemicals are avoided.

Reliability in the toughest conditions

Product



UV-C Lamps

The UV-C lamps have a lifespan of up to 16000 hours

Control Unit (CU)

- 230 VAC
- Specially developed control
- Menu-driven interface
- Continuous monitoring of the performance
- Alarm features
- Plug-and-play

Flow Management System (FMS)

For optimal dosage distribution

Dosage

The sensitivity of microorganisms for UV-C light is dependent on their structure (nucleus, cell wall, pigments, etc.) The dosage (J/m^2) is established on the basis of this sensitivity. In other words, each microorganism has its own specific disinfectant dosage.

UV-C disinfection

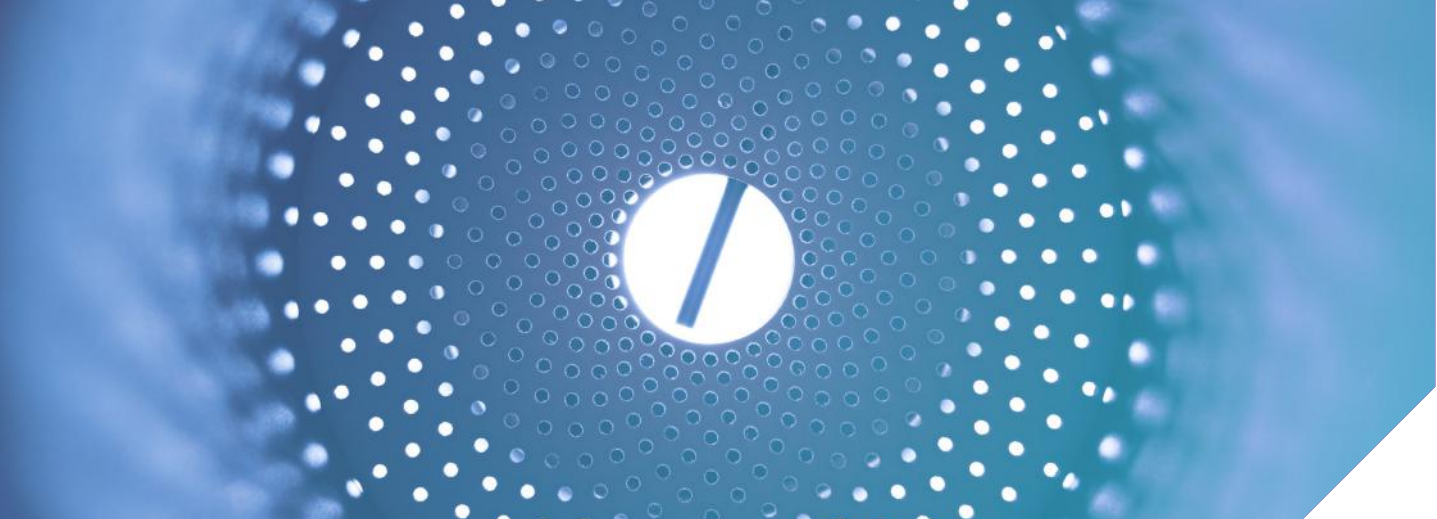
UV-C disinfection is an environmentally friendly technology that is used to disinfect water, air and surfaces. This technology does not use chemicals and the treated product is not affected.

About UV-C

UV-C light is electromagnetic radiation that cannot be observed with the naked eye. Microorganisms absorb UV-C light, which causes the radiation to penetrate the microorganism's cell. Inside, the DNA compounds are then broken down. The hereditary properties of the cell change, making the microorganisms unable to multiply and causing the organism to die.

Transmission value

One of the most important aspects of disinfecting with UV-C is the light transmittance of the liquid being treated, also referred to as transmission. The UV-C light must be able to penetrate the fluid in order to reach the micro-organism, even further away from the light source. When the transmission is high, the light penetrates deeply into the liquid. When the transmission is low, it is easily absorbed and less effective. Transmission is usually depicted in percentages and measured over a distance of 10 mm (T10) or 50 mm (T50). The transmission of a liquid is impossible to see with the naked eye.



Van Remmen UV Technology

Van Remmen UV Technology is a designer and supplier of sustainable UV disinfection systems for liquids and surfaces. Our great passion for the profession is the major strength of our company. In order to ensure our systems are most effective, we test and validate our UV equipment with microorganisms. We look beyond current standards and offer optimal solutions. Based on this idea, we have been developing systems that are both effective and highly energy-efficient for over 18 years now.

Van Remmen UV Technology is an experienced partner for organisations seeking the most effective approach to disinfect water with a low transmittance (40 - 80%), such as waste and process water. For this purpose, we developed the W and P series. The W series is suitable for treating water with a transmittance (T₁₀) between 40 and 60% and the P series for applications with a water transmittance (T₁₀) between 60 and 80%. Both series use a highly-efficient disinfection approach.

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