



eVOQUA

WATER TECHNOLOGIES



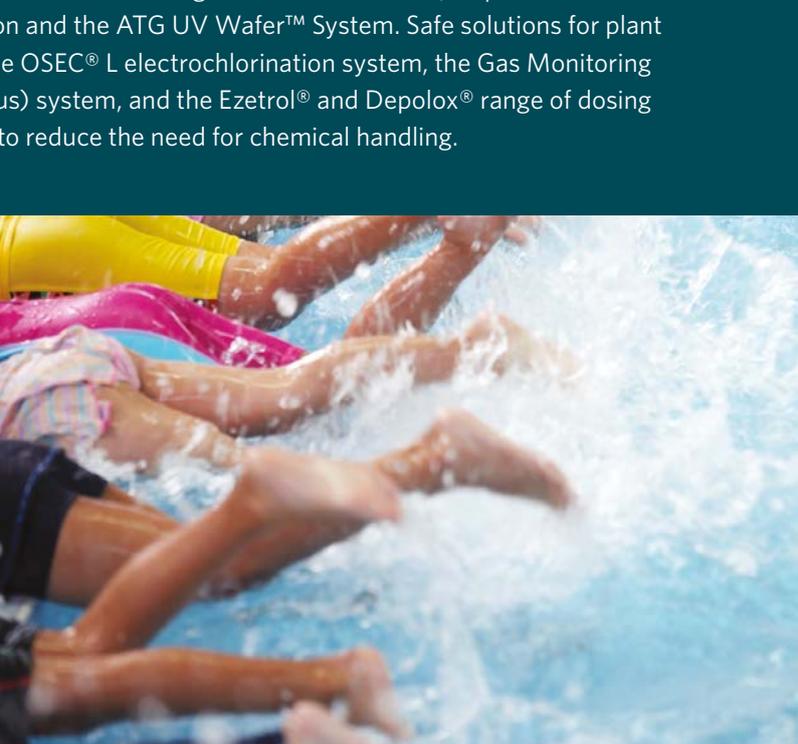
SAFE & EFFICIENT SOLUTIONS FOR CLEAN AND CLEAR WATER

DISINFECTION, FILTRATION, MONITORING & CONTROL



ABOUT US

Evoqua Water technologies has been synonymous with water disinfection since 1913, and filtration since 1956. Featuring award winning equipment such as Wallace & Tiernan® dosing and instrumentation, Neptune-Benson® Defender filtration and the ATG UV Wafer™ System. Safe solutions for plant rooms include the OSEC® L electrochlorination system, the Gas Monitoring System (GMS plus) system, and the Ezetrol® and Depolox® range of dosing control systems to reduce the need for chemical handling.



DEFENDER® REGENERATIVE MEDIA FILTRATION

Evoqua's Defender® Regenerative Media Filter is simply one of the most cost efficient filtration system available today. The Defender filter is a cost-effective solution for a more sustainable future. Developed from vast experience within the market the filter utilises an automatic control panel which provides enhanced efficiency and ease of operation.

REDUCED WATER DEMAND

The Defender Regenerative Media Filter significantly eliminates the amount of backwash water associated with sand filter operation. Instead of backwashing, the Defender filter is programmed to automatically "bump" to regenerate the fine-grade perlite media for a fresh start. Eventually the filter will require a quick and easy media discharge and replacement. Depending on bather load, the life cycle of the media averages around every four weeks.

SPACE AND CONSTRUCTION SAVINGS

The Defender filter takes up 1/4 to 1/6 of the space required by an equivalently sized sand system. In newbuild situations this allows the construction of smaller plant rooms giving more chargeable space. The smaller systems also provide the following benefits

- No backwash holding tank
- Smaller waste line to sewer
- Overcomes local waste water flow restrictions
- Smaller balance tank required
- Operating weight may be as little as 10% of a similar sand filter
- For retrofit the filter fits into existing spaces and utilizes existing pipework.
- Fits through existing smaller access pathways without the need to remove walls or widen door ways.

ENERGY SAVINGS

Energy savings are derived in several ways. First, Defender filtration cycle at lower head pressures throughout the filter cycle saving power demand. Second, the elimination of backwash waste associated with sand filtration provides significant wastewater treatment savings and less replacement water means less heating to bring it up to temperature.

LESS FUEL AND CHEMICALS

The dramatic reduction of backwash waste directly translates to savings in chemicals and fuels for reheating associated make-up water. Less backwash equals less chemicals and heat needed to treat the make-up water.

REMOVES PARTICLES DOWN TO 1 MICRON

The Defender Regenerative Media Filter achieves the highest quality of water by removing particles down to 1 micron. This is a significant improvement over conventional sand filtration. The removal of smaller microns provides greater protection against E-Coli and Cryptosporidium organisms.



DISINFECTION SOLUTIONS

THE ULTIMATE COMBINATION

When used together, UV disinfection, chemical disinfection and Defender® regenerative media filtration provide a multiple barrier approach for exceptional protection from harmful contaminants, providing the cleanest, safest water.

ULTRAVIOLET DISINFECTION SOLUTIONS

UV disinfection is an established solution for Aquatic facilities of all types and sizes; protecting against chlorine resistant microorganisms, providing crystal clear water and reducing chloramines, the cause of red burning eyes, itchy skin and chemical odours.



WAFER™ (WF) UV RANGE

The Wafer Range is the world's most compact UV System. At around a third of the size of comparative UV systems, with a smaller, lighter control system, the WF offers an easy to install and retrofit solution that will fit the tightest of plant rooms. Designed by CFD and proven by validation, the WF represents performance efficiency when compared to previous generations of products.

The Wafer System's hydraulically optimised reactor design and leading lamp technology make it one of the most efficient and best performing UV units, suitable for treating flow rates of 5 m³/hr up to 700 m³/hr.

Operators will benefit from Twistlok™ lamp connections designed to provide enhanced safety and ease of maintenance, together with the latest Pulselok™ automatic wiper system which significantly reduces maintenance.

Evoqua's premium Spectra Control Panel comes as standard which includes a wide range of features, such as data stream monitoring, process interlocks and programmable set points. A key feature included is variable power stepping from 100% to 50% power, allowing operators to optimise the operational power of their system to match bather loads and pool opening times.

In addition, the Spectra Control Panel features a reactive boost function that will automatically operate the lamps at maximum power from a combined chlorine alarm signal when teamed with a suitable chlorine controller. This is a feature specifically designed for swimming pool applications to break down problem chloramines as soon as they are detected, significantly improving water quality and eliminating the cause of strong chemical smells, red burning eyes, itchy skin and building corrosion.

WF models are 3rd party validated, NSF-50 certified* & Model Aquatic Health Code (MAHC) compliant.

CHLORAMINE REDUCTION

Chloramines are the chemical compounds which are formed when free chlorine reacts with nitrogenous compounds such as uric acid, urea, ammonia, histidine and creatine introduced to the pool environment by bathers. As the cause of itchy skin, eye irritations (red eye), headaches and unpleasant chemical odours, chloramines pose a significant problem for leisure operators worldwide. Independent research has linked chloramines as a cause of asthma in regular swimmers, lifeguards, and instructors. Chloramines also damage the structure of aquatic facilities through corrosive condensation, degrading structural steel, roof supports, furniture, pool side equipment and ventilation ducts.

The polychromatic wavelengths of medium pressure UV systems break the bonds within all three of the chloramine molecules. The result is crystal clear water and fresh clean air. Requirements for 'shock dosing', and additional chlorine are reduced, and in most cases, combined chlorine levels are reduced to as little as 0.2 ppm.



Wafer™ System installed within a pool plant room

CRYPTOSPORIDIUM PROTECTION

UV-C light is a proven and effective deactivator for Cryptosporidium and other emerging chlorine resistant microorganisms such as Giardia. Used extensively in drinking water for over 100 years, many leisure operators are now installing UV systems as standard to ensure their water does not pose a risk to public health and safety.

Our UV systems have undergone independent 3rd party validation testing which can be trusted to deliver a 99.9% reduction of Cryptosporidium in a single pass.



ON SITE ELECTROCHLORINATION GENERATION SYSTEMS

The OSEC® L system provides a stable disinfection solution on-site and on-demand. An inherently safe solution to bulk chlorine, liquid sodium hypochlorite and calcium hypochlorite, the OSEC system does not require handling of any hazardous chemicals. The generator produces a dilute hypochlorite solution <1.0 wt% concentration using saturated brine (salt), water and electricity in an electrochemical process. With an embedded process controller the system is fully automated and can work in batching or direct feed operation modes.

The compact design allows plant operators to reduce downtime with easy push button operation and long service intervals. The cell is easily replaceable, thus does not require cleaning. The unit only requires minimal annual maintenance. The footprint is 50% smaller versus other on-site generators and NEMA 4X rated components minimize corrosion and provide a safe long-life disinfection solution with low life-cycle costs.

MONITORING AND CONTROL

Utilising an automatic measurement and control system for pools water provides reduced chemical handling reducing risks to employees. It greatly reduces the risk of over or under dosing of pool chemicals ensuring enhanced safety for users.

EZETROL® TOUCH



The Ezetrol Touch controller is a state of the art disinfection controller that measures the pool water free chlorine levels, the pH and temperature as standard. An ORP redox measurement

or a conductivity measurement can be added as options. The controller provides outputs to various chemical feed devices to control the parameters to their desired set points.

The unit is built on the proven technology of its predecessors, updated for the modern plantroom. The 4.3 inch colour touchscreen provides simpler, intuitive operation. Web visualisation and operation of relevant parameters is enabled through ethernet connectivity. The flowcell has an LED indicator which specifies the pool water chemistry status at a distance.

DEPOLOX® POOL E 700P MANAGEMENT SYSTEMS

The Depolox Pool E 700P is a complete pool water management system which measures the pool water free chlorine levels, pH, ORP redox and temperature as standard. In addition, the user can add total chlorine measurement and/or conductivity. The 7 inch screen provides an intuitive interface complete with data logging/graphical display on all measured parameters.

In addition to these key features the Depolox Pool E700P also offers the following pool management modes. The CEDOX algorithm ensures the pool is disinfected whilst adding the minimal amount of chemical required. Economic mode enables the pool circulation flow to be reduced at set times or under various conditions. This is only enabled as long as the water parameters are within user determined ranges.

THE PROCESS MONITORING SYSTEM

The Process Monitoring Systems enables the facility an overview of all the Wallace & Tiernan® disinfection systems on site. It provides data visualisation and parameter adjustments using an integrated web server. A secured email function is available for scheduled process updates or event driven emails triggered by pre-configured alarms. Data archiving is available on a removable card and the archive data is also remotely accessible. The unit is fully password protected to ensure secure operation.

The benefits can be summarised as:

- Intuitive visualisation of several disinfection processes from one configurable screen
- Visualisation and adjustment of key parameters to ensure safe and reliable operation
- No special software, licences or subscriptions required
- Email alarms configurable

GMS PLUS MULTI-FUNCTION GAS DETECTION SYSTEMS



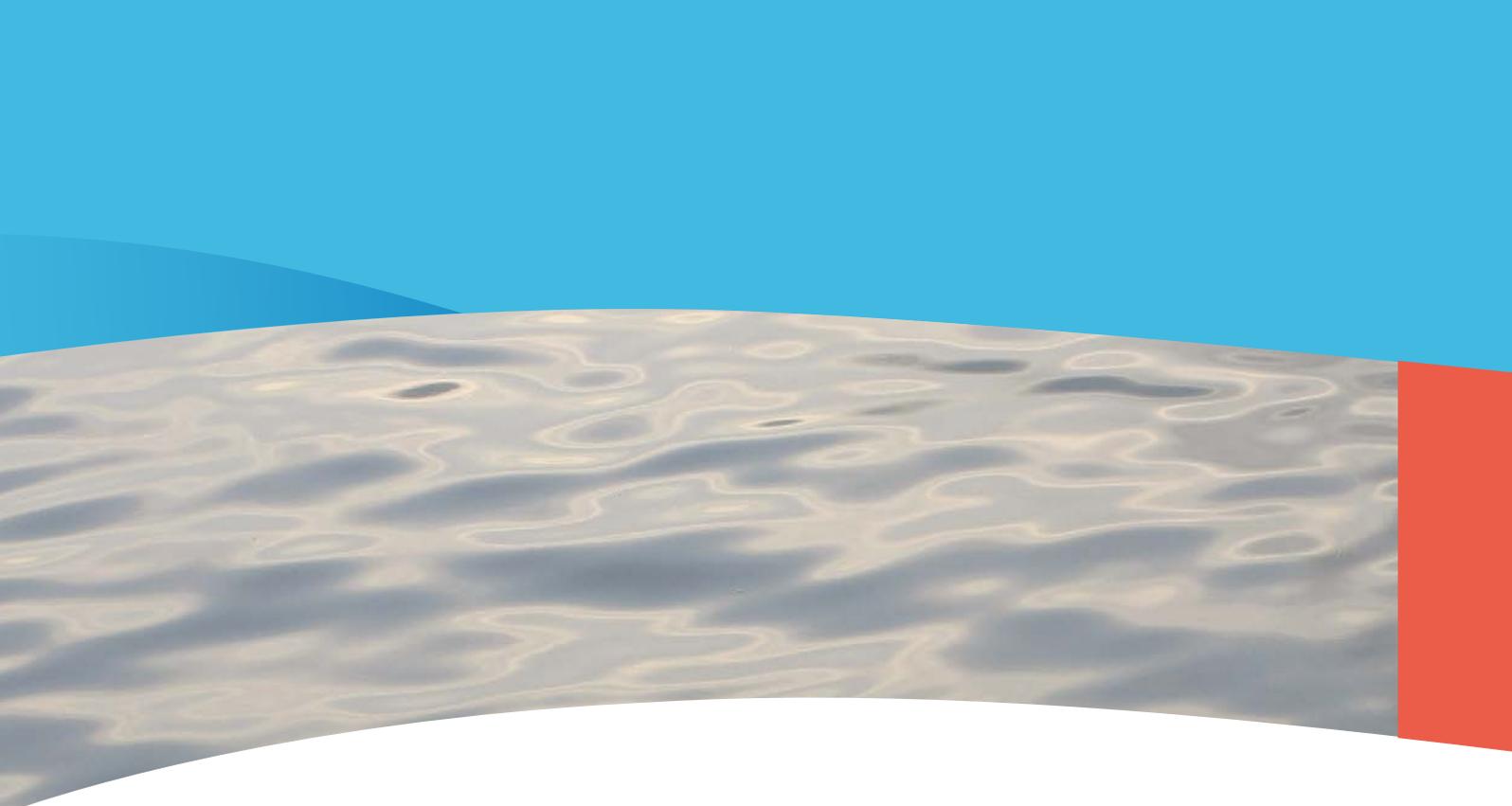
The GMS+ is a 2 channel measuring system designed for pool plant rooms. It can use a single sensor or dual sensors to measure the release of

chlorine gas in a plantroom offering protection to site staff and users of the facilities.

The key benefits can be summarised as:

- User adjustable alarm contacts
- Clear, easy to read display of current reading and 8 hour average, min and max peak reading
- Automatic fault detection and sensor monitoring
- Audible and visual external alarms are available
- Battery back up available





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NB-AQUATICS-BR-EN-1219