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# Silanna UV to Demo Innovative UV-C LED Water Quality Sensors at AQUATECH 2023

## *Detects Nitrates and Organics Rapidly – Environmentally Safe, Low Power, and Long Lifetime*

**Brisbane, Australia, 19th October, 2023** - Silanna UV will demonstrate innovative new technology for detection of nitrates and organic compounds in water at AQUATECH Amsterdam from November 6 to 9, 2023. Contamination of water by nitrates and organic compounds is a growing problem, and regulations to protect the public from this threat are increasingly stringent.

At AQUATECH, Silanna UV will showcase its SF1 series of Ultraviolet LEDs, which are ideal for water purity applications such as nitrate detection, organic compound detection, disinfection, and HPLC chromatography. Silanna UV is a pioneer in developing patented UV LED technology for shorter wavelengths, from 230nm to 265nm, including deep UV-C and far UV-C ranges.

The SF1 series achieves a peak wavelength under 235nm and a Full-Width-Half-Max (FWHM) peak of 10nm, which enables high sensitivity and accuracy for measuring low levels of dissolved nitrate and other contaminants in water. The SF1 series also offers a long lifetime of more than L50 >9,000hrs (>1 X 109) measurements, a low power consumption of less than 0.12W, and a compact and robust design.

### Better Technology for Cleaner Water

Nitrate contamination in drinking water can be harmful to humans, according to the United States Environment Protection Agency, the Minnesota Department of Health, and other respected organizations. With increasingly strong regulations that demand nitrate limits as low as 10mg/L-N, the need for monitoring and controlling dissolved nitrate is now a priority in water supply.

In traditional Nitrate and Nitrite detection, broadband light generated by a lamp is passed through an expensive spectroscopic pathway to extract only the far UV-C wavelength needed for sensing applications. However, this is complex, wastes power, and may require environmentally-harmful materials.

In contrast, narrowband UV light under 240nm is perfect for this application. Silanna’s SF1 series of LED UV-C emitters with peak wavelength under 235nm and a Full-Width-Half-Max (FWHM) of 10nm makes them an ideal candidate for a new generation of nitrate sensing devices.

### Ready-To-Go Nitrate-Detecting Reference Design

At AQUATECH Silanna UV will demonstrate its nitrate-sensing reference design, which uses the 235nm SF1-3U8P3L1 UV LED emitter in a parabolic lens package that produces a quasi-collimated far UV-C beam.

The reference design detects dissolved nitrate in a water sample in only 0.5 sec, with effectively no warm-up delay. This reduces power consumption and allows high-precision results as frequently as once per minute for most applications. The results, including units of mg/L-N (PPM of Nitrogen in nitrate), are displayed instantly on the clear 2.8-inch touch screen. The reference design is cost-effective, power efficient, environmentally friendly, mercury-free, and incorporates a safety interlock to protect users from UV-C exposure.

In addition to nitrate detection, Silanna UV will also demonstrate the detection of organic compound contamination via Chemical Oxygen Demand (COD) and UV254 absorption tests. These tests help monitor water quality and prevent potential health risks from harmful substances such as pesticides, herbicides, pharmaceuticals, and industrial chemicals.

### See the Future of Water Quality at the Show

AQUATECH Amsterdam 2023, the world's leading trade show for clean drinking water production and wastewater treatment, will take place from November 6th to 9th, 2023 at the RAI Amsterdam Convention Centre in Amsterdam, Netherlands.

Silanna UV will be at Booth 07:730.

Silanna UV invites all visitors to its booth to learn more about its innovative deep UV-C LED and far UV-C LED solutions for water applications and more. Silanna UV's application team will be available to answer any questions and provide technical support.

Further details of Silanna’s SF1 series are available at: <https://silannauv.com/products/sf1-235nm-flat-lens/>

### About Silanna UV

The Silanna Group is an Australian semiconductor manufacturer established in 2006. Privately funded since being acquired from Peregrine Semiconductor in 2008, Silanna UV is an ISO 9001:2015 certified solution provider for UV-C LED manufacturing. Based in Brisbane, Australia, Silanna UV provides far UV-C light sources for water quality sensors, gas sensors, disinfection, and HPLC (High-performance liquid chromatography) applications. Silanna UV’s innovative approach allows UV LED technology to push toward shorter wavelengths, from 230nm to 265nm, including deep UV-C and far UV-C ranges. The company holds unique epitaxy technology and holds patents related to UV LED technology. With its unique UV LED technology, Silanna UV strives to create new possibilities by pushing UV wavelength boundaries to the limit. To learn more, please visit <http://www.silannauv.com/>.