



Monitor, Predict, and Control Algae with the MPC-Buoy

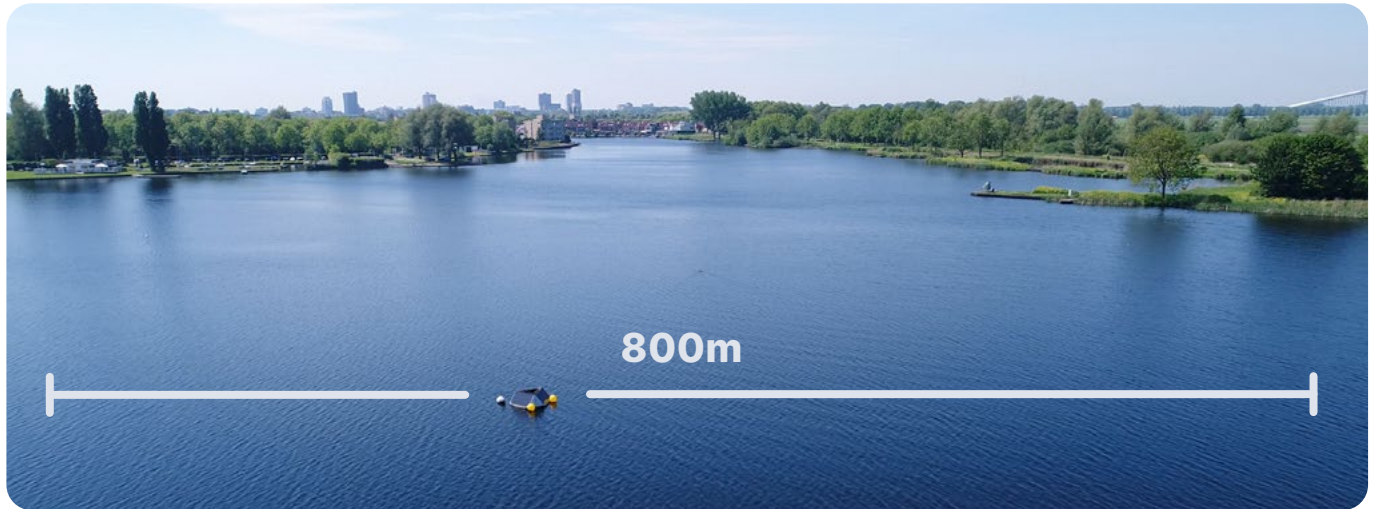
- ✓ Reduce cyanobacteria & diatoms up to 95%
- ✓ Reduce TSS, pH, and chemical usage
- ✓ Safe for fish, plants, and other aquatic life

LGSONIC

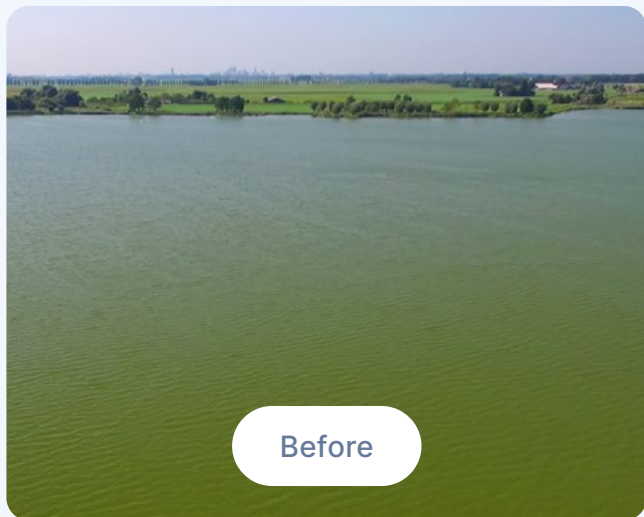
Complete algae control solution

Meet the MPC-Buoy

The MPC-Buoy is a floating, solar-powered system that combines real-time water quality monitoring and ultrasound to effectively control algae (blooms) in lakes and reservoirs.



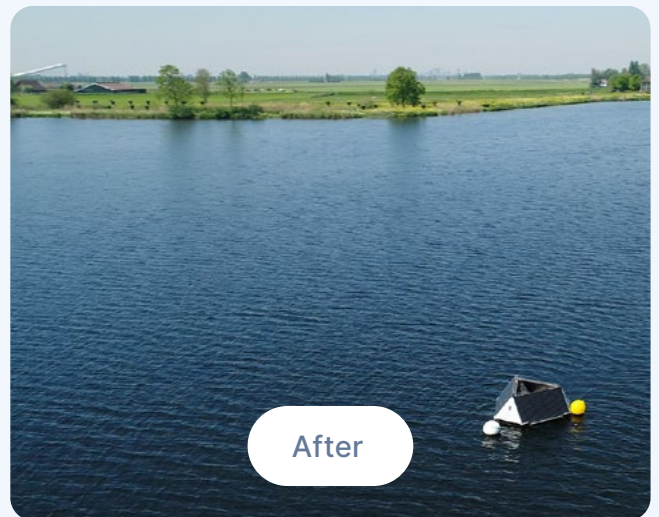
Each MPC-Buoy device can control algae in areas up to 800m in diameter.



📍 Zoetermeer, The Netherlands, 90 hectares recreational lake

Algae problem

A combination of high temperatures, stagnant water, and nutrient overload can result in excessive algae growth. These organisms deplete oxygen levels in water, release toxins, and cause bad taste and odors. The solution is to deploy one or more MPC-Buoys that emit targeted ultrasound into the water.



Algae solution

- ✓ Eliminate up to 90% of the algae
- ✓ Prevent the growth of new algae
- ✓ Reduce TSS, pH, and chemical usage
- ✓ Safe for fish, plants, and other aquatic life

Designed for large water surfaces

The MPC-Buoy is specifically designed to control algae and improve water quality in large water surfaces.

Drinking water reservoirs



Reduce chemical consumption, odor and taste issues.

Cooling ponds



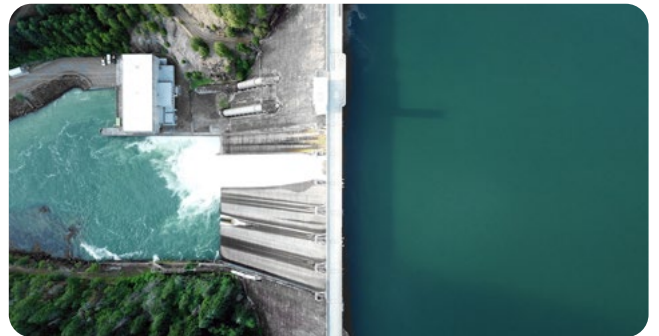
Increase the water quality and efficiency of your cooling water.

Wastewater ponds



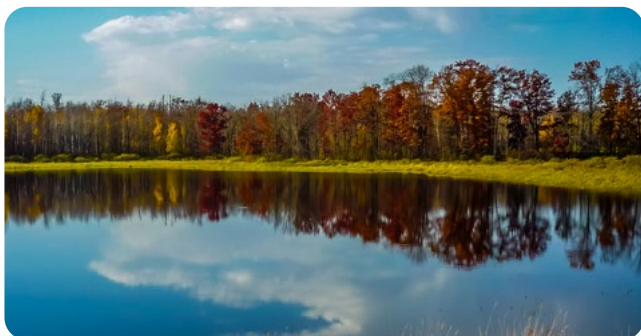
Control algal blooms to lower pH, TSS, and BOD levels.

Hydroelectric dams



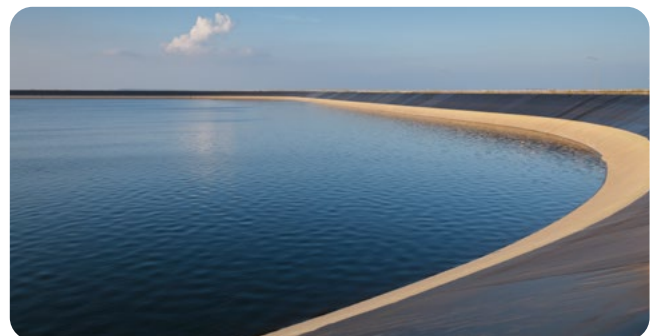
Lower chemical consumption and improve water quality.

Lakes



Reduce odor problems and prevent dangerous toxins.

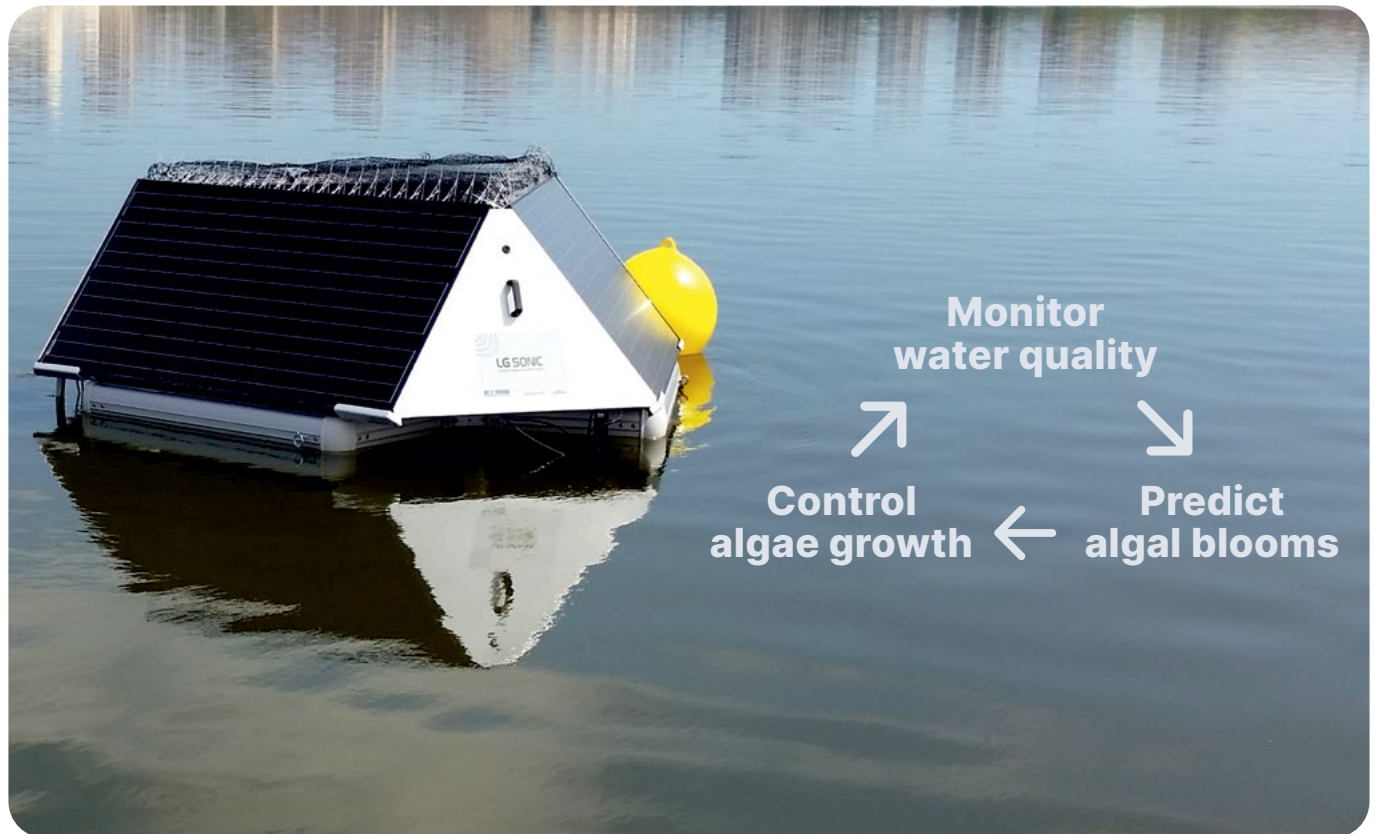
Irrigation reservoirs



Prevent clogging of filters and pipes of drip irrigation systems.

Monitor, predict, and control algae with ultrasound technology

The MPC-Buoy uses low-power ultrasound to stop algae growth without harming the environment.



Monitor water quality

The LG Sonic MPC-Buoy provides a complete overview of your water quality by collecting key algae and water quality parameters in real-time.

- Chlorophyll α (green algae)
- Phycocyanin (blue-green algae)
- pH
- Turbidity
- Dissolved oxygen
- Temperature

Predict algae blooms

Our database contains more than 10 years of information collected from thousands of LG Sonic devices operating around the world. It includes datapoints on different types of water bodies, algae species, seasons, etc. Our database is continually refreshed with new information, always optimizing predictive algorithms for the benefit of all our customers.

Control algae growth

Algae can become resistant to treatment methods, including ultrasound. To avoid this, we'll determine the most effective ultrasonic program for your unique situation. The program parameters will be specific for wave form, frequency, pause, and amplitude. The key to long-term results is adjusting settings before the algae mutate.

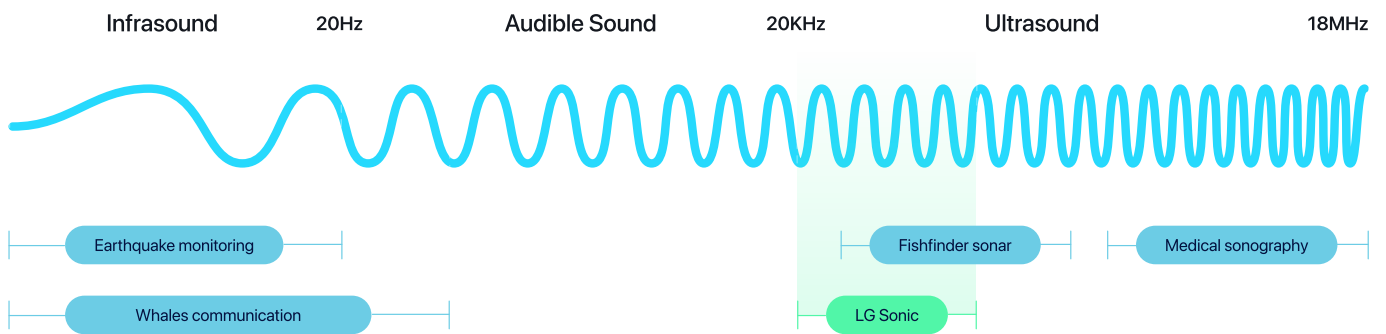
* Additional sensors can be purchased separately

How ultrasonic algae control works

Eco-friendly ultrasonic treatment

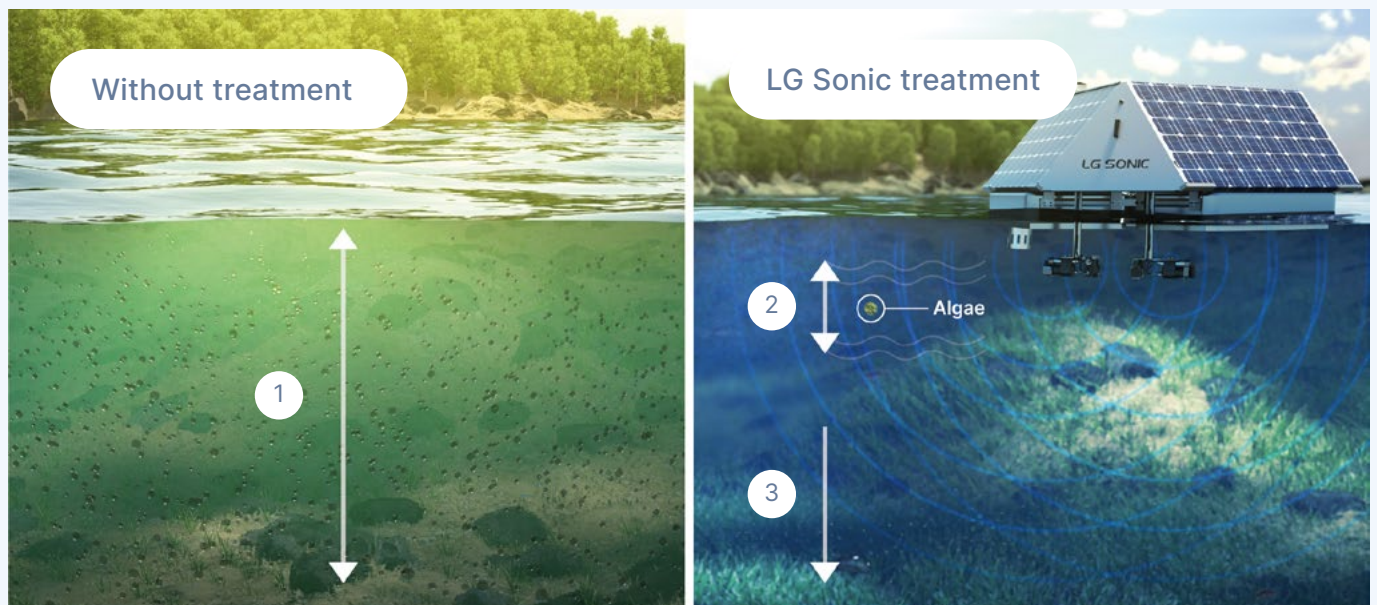
Algae blooms reduce light penetration, deplete oxygen, and release dangerous toxins, harming fish, plants, and other aquatic organisms. By controlling algal growth, LG Sonic's ultrasonic technology has the power to restore entire ecosystems.

After one year of treatment, algae levels will significantly reduce as water clarity increases, encouraging plant growth and therefore, increasing oxygen levels. Our ultrasonic treatment reduces algae blooms by up to 95%, compared to no treatment.



How ultrasound targets the algae

- 1 Algae move to the water surface for photosynthesis. The ultrasound creates a sound layer at the top of a water body.
- 2 The low-power ultrasound waves affect algae's vertical movement by fixing them in the water column.
- 3 Without access to sunlight and nutrients, the algae sink to the bottom, where they decompose without releasing toxins. In time, bacteria will degrade the algae.



MPC-Buoy components

Solar-powered

- 3× 250 Wp high quality solar panel that provide power all year-round in any country
- 1× 24 Volt, 40 AMP lithium battery
- Switches to energy-saving program during periods of low sun irradiation

Smart communication system

- 4G, Satellite, LAN
- Real-time water quality data with the MPC-View software
- Integrated alarm functions



4 ultrasonic transmitters

- Treatment range: 800m in diameter
- Integrated Aquawiper™: automatic cleansing system for the transmitters
- Chameleon Technology™ adjusts the ultrasonic program to specific water conditions

Anchored floating construction

- Aluminium powder coated frame
- UV and corrosion resistant construction
- Unsinkable floats

Complete quality sensor package

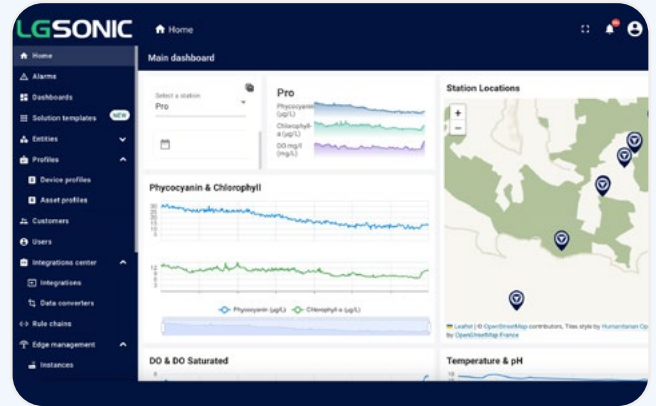
- In-situ water quality sensors to provide real-time data
- Monitors DO, turbidity, pH, chlorophyll α , phycocyanin, and temperature
- Automatic antifouling wiper ensures optimal readings

Get real-time water quality insights

Meet the MPC-View

MPC-View is an advanced web-based software. It provides a complete water quality overview of one or more water bodies.

- ✔ Real-time insights into your water quality
- ✔ Integrated data visualization and reporting
- ✔ Ultrasonic programs change based on the water quality data received



MPC-View software features



- ✔ Comply with water quality regulations and standards by delivering precise data and reports
- ✔ Analyse historical data trends to identify patterns and potential issues.



- ✔ Integrate with other systems and databases for a comprehensive view of water quality across various sources
- ✔ Generate detailed reports and visualisations to offer insights into water quality over time

Set up alerts for specific water quality thresholds, triggering notifications when levels are outside acceptable limits

Technical specifications



<p>3x aluminum framed polyethylene buoy</p> <ul style="list-style-type: none"> • Material: Rotationally-moulded UV-stabilized HDPE polyethylene • Filling: Closed-cell polyurethane foam • Buoy frame: Anodized aluminum • Weight: 15 kg • Size: 120 × 60 × 20 cm • Buoyancy capacity 270 kg 	<p>Solar panels (3x)</p> <ul style="list-style-type: none"> • Solar cell: Monocrystalline cell • Rated Power (Pmax): 250 Wp Weight: 16 kg • Connectors IP67 • Size: 158 × 81 × 3,5 cm
<p>Telemetry</p> <ul style="list-style-type: none"> • GSM/GPRS • CDMA (optional) • Radio (optional) • GPS (optional) • Iridium Satellite (optional) 	<p>Data acquisition system</p> <p>4 x analog channel (user-configurable for either 4-20mA)</p> <ul style="list-style-type: none"> • 1 x RS485 port for instruments • 1 x high frequency pulse counting channel • 1 SDI-12 input • 3X RS232
<p>Battery</p> <ul style="list-style-type: none"> • 1× 24 volt lithium lifepo4 • Capacity: 40 Ah • Weight: 15 kg 	<p>Solar Charge Controller</p> <p>Overcharge and Deep discharge protection Ip68 Protection</p>

Water quality sensor package

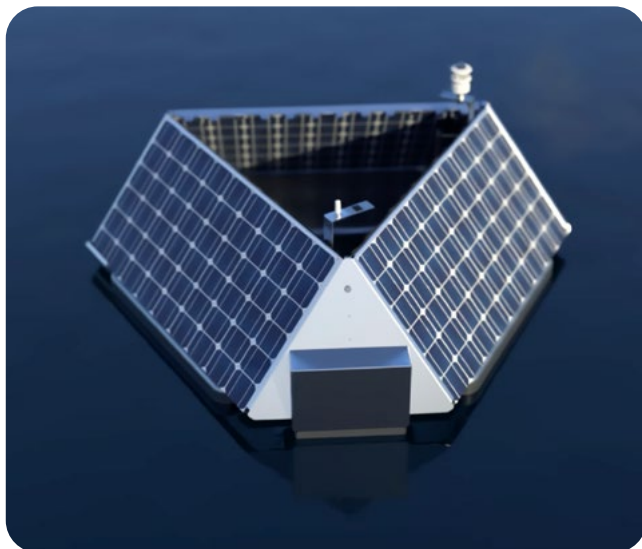
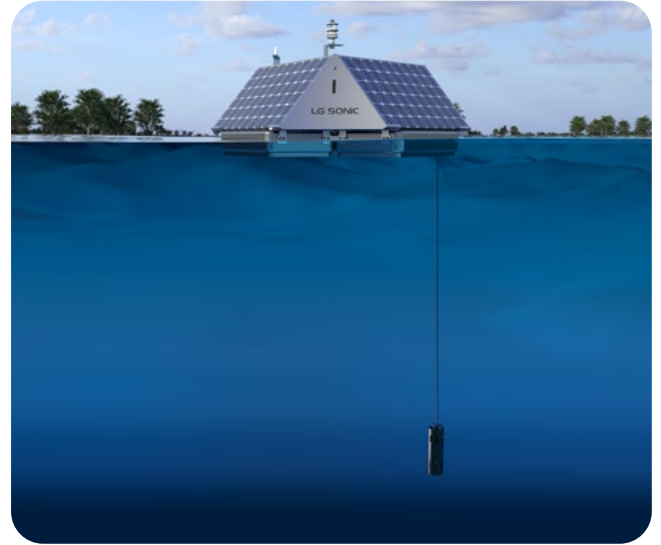
<p>Chlorophyll a, phycocyanin, turbidity</p> <ul style="list-style-type: none"> • 470nm – Chlorophyll a • 610nm – Phycocyanin • 685nm Turbidity 	<p>Dissolved Oxygen</p> <ul style="list-style-type: none"> • Optical measure by luminescence • Measure ranges: • 0.00 to 20.00 mg/L • 0.00 to 20.00 ppm • 0-200% 	<p>pH</p> <ul style="list-style-type: none"> • Combined electrode • special glass, Ag/AgCl ref. • Gelled electrolyte (KCl) • Range 0 – 14 pH • Resolution 0,01 pH • Accuracy +/- 0,1 pH
<p>Temperature</p> <ul style="list-style-type: none"> • Technology CTN • Range 0°C to 55°C • Resolution 0,01 °C • Accuracy ± 0,5 °C • Response time < 5 s 		<p>It is possible to add additional sensors to the water quality sensor package.</p>

Water quality monitoring solutions

Vertical profiling system

LG Sonic Vertical Profiler can be pre-set to take samples from a wide range of depths within a water body and measure key water parameters in real-time. Data is transmitted through 4G, radio or satellite to the MPC-View online software.

- Easy maintenance: can be done from the boat, without bringing it back to shore
- Possible to measure up to 100m in depth
- 50% more affordable than other Vertical Profilers on the market



PO₄ sensor

By measuring PO₄ in a water body, you're able to predict harmful algae blooms and you gain a better understanding of the different PO₄ sources in your water.

- Reliable measurements at different depths
- 2-POINT calibration with each measurement
- High durability of reagents
- User-friendly and highly customizable
- More affordable than other PO₄ sensors
- Operates completely autonomously
- The sensor can be supplied on a stable buoy

Weather station

Our Weather Station is a low-maintenance unit that enables more accurate algae bloom predictions by integrating local weather data into your MPC-Buoy and MPC-View software.

- Real-time weather data
- Highly customizable
- Low maintenance



A selection of our customers

We work together with top-level water and energy utilities.



American Water is the largest and most geographically diverse U.S. public water and wastewater utility.

To control harmful algae and eliminate foul odor and taste issues, American Water installed MPC-Buoy systems in their reservoir located in New Jersey. Amongst other positive results, the utility achieved 100% chemical reduction in the reservoir



Anglian Water provides drinking water to more than four million customers and water recycling services to almost seven million.

Since the installation of the MPC-Buoy systems in Alton Water Reservoir and the implementation of additional control measures in the upstream catchment area, Anglian Water has started to see a reduction in algal blooms which minimises the extra pressure on the treatment works.



Agua Andinas, a multi-service company in Santiago, supplies water, sewerage, and wastewater services to about 8.5 million people through its subsidiaries.

The customer values the MPC-Buoys' real-time monitoring, which provides immediate biochemical data access and water quality change alerts. This helps ensure compliance with SEA Chile regulations and safeguards employees and the water supply during crises, like extreme weather.



Maynilad Water Services, responsible for water and wastewater services in the West Zone of the Greater Manila Area, caters to over nine million people and has proactively tackled the challenges faced by Laguna de Bay.

MPC-Buoy provides real-time data on water quality, included parameters are; Chlorophyll α , Phycocyanin, pH, Turbidity, Dissolved Oxygen, and temperature. With real-time monitoring, Maynilad can swiftly detect potential threats and take immediate action to uphold water quality.

About LG Sonic

LG Sonic is a leader in ultrasonic algae control with a mission to restore aquatic ecosystems without the use of chemicals or other harmful pollutants. Leading the way by producing cutting-edge technologies that manage algae blooms sustainably, LG Sonic's solutions are present in over 55 countries, serving 12 industries.

For over 10 years, we've invested in research and development. Today, while striving to provide smart strategies against water pollution, LG Sonic expands its expertise to offer comprehensive solutions for surface water management, including vertical profiling, phosphate monitoring, remote sensing, and the creation of a digital twin for surface water.

100+

Customers

55+

Countries

12+

Industries served



LG Sonic Headquarters

Opened in 2011, this European venue is where we established our corporate headquarters and our R&D department. At this location we continue to improve our features and technologies in our in-house water laboratory.

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Award-Winning Innovation



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