



Monitor Water Quality and Algae with LG Sonic Monitoring-Buoy

- ✓ Cost effective solution
- ✓ Online access to real-time water quality data
- ✓ Requires minimum effort and little maintenance

LGSONIC

Real-time water quality monitoring solution

Water quality data embody essential evidence to support decision-making in the management of water resources. This objective information is used to verify compliance with regulations and policies; to alert managers to current and emerging problems and to define new regulations to better protect human health and the environment.



Monitoring Buoy

Monitoring Buoy is a unique combination of real-time water quality monitoring and user-friendly cloud software that stores and analyses received water quality data. The system represents cost effective monitoring and early warning solution for lakes and water reservoirs.

Advantages

- ✓ Easily deployable
- ✓ Upgradable to LG Sonic ultrasound treatment
- ✓ Requires little maintenance
- ✓ Cost-effective

The system is easily deployable with the use of pontoons and anchored in the reservoir on unsinkable floats. It uses solar panels that provide power, all year round in any country. Water quality sensors are equipped with a wiper mechanism for automatic cleaning of the sensors after each reading, keeping the maintenance to a minimum and the readings accurate.

Applicable to any water surface

Monitoring system that helps informed decision-making for every water manager.

Drinking water reservoirs



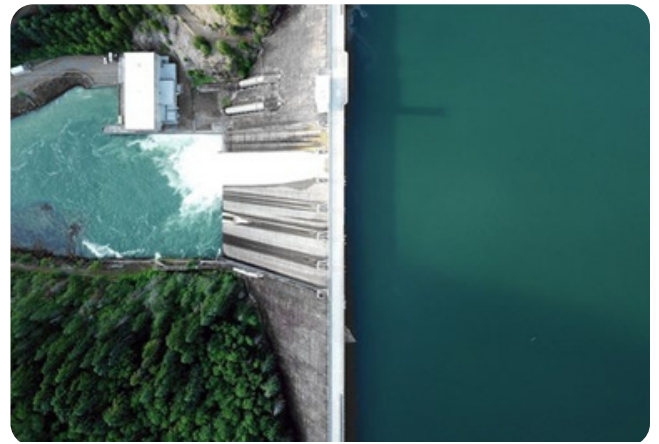
Cooling ponds



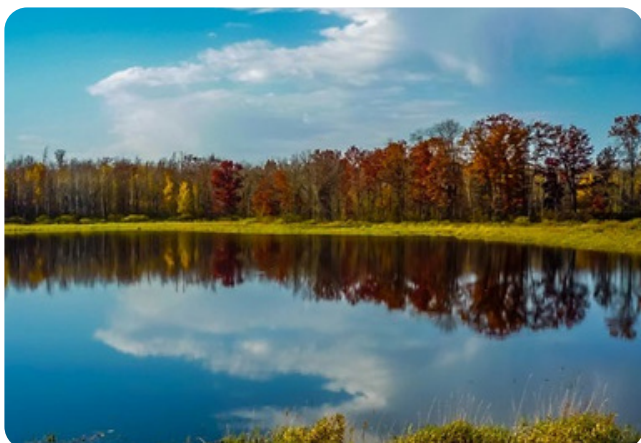
Wastewater lagoons



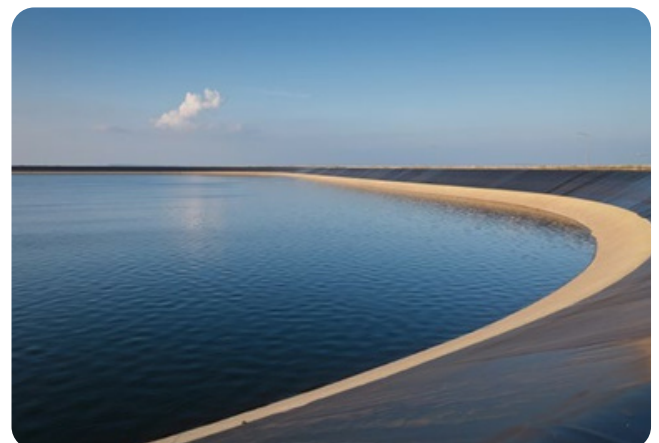
Hydroelectric dams



Lakes



Irrigation reservoirs



Early warning system for detecting algal blooms

By making use of Artificial Intelligence (AI), the Monitoring Buoy predicts algal blooms based on water quality data automatically. An early warning enables to implement management strategies prior to the bloom occurrence, ensuring the protection of human health.



1. Monitor water quality

The Monitoring-Buoy provides a complete overview of your water quality by collecting the following parameters* every 10 minutes:

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

2. 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.

* Additional sensors can be purchased separately

MPC-Buoy components

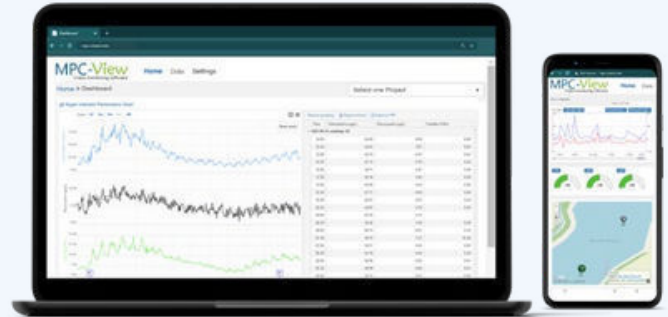


Get real-time water quality insights

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
- ✓ Data transfer through 4G or satellite
- ✓ User friendly software



MPC-View software features



- ✓ The software receives, summarizes, and publishes data into charts, tables, and spreadsheets on your personal webpage.
- ✓ Provides a complete picture of your water body at every monitored location.



- ✓ You can create specific rules that will trigger an email alert when pre-determined parameters are breached.
- ✓ The monitoring software was designed to be user-friendly.

Remote sensing is also integrated into MPC-View. This allows you to view the historic data of a specific water body.

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: 33 lbs • Size: 47 x 23.5 x 8 in • Buoyancy capacity 600 lbs 	<p>Solar panels (3x)</p> <ul style="list-style-type: none"> • Solar cell: Monocrystalline cell • Rated Power (Pmax): 200 Wp Weight: 35.3 lbs • Connectors IP67 • Size: 62.2 x 32 x 1.4 in
<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"> • 1x 24 volt lithium lifepo4 • Capacity: 40 Ah • Weight: 33 lbs 	<p>Solar Charge Controller</p> <p>Overcharge and Deep discharge protection</p> <p>Ip68 Protection</p>

Water quality sensor package

<p>Fluorescence, including anti-fouling wiper:</p> <p>chlorophyll a, phycocyanin, turbidity • 470nm – Chlorophyll a</p> <ul style="list-style-type: none"> • 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 32°F to 122°F • Resolution 0,02°F • Accuracy ± 0,9°F • Response time < 5 s 		<p>It is possible to add additional sensors to the water quality sensor package.</p>

What other products do you need?

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 330 ft 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



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



In California, the MPC-Buoy technology is controlling algae in an open water reservoir where treated reclaimed water is stored to be later used for irrigation.

Since the start of the ultrasonic treatment, overall algae levels have decreased. TSS, pH, and dissolved oxygen levels have also improved, allowing Vallecitos to provide higher water quality to their customers.



For years, power generating company NIPSCO tried lowering TSS levels using algaecide, but it never gave consistent results.

Since the installation of five MPC-Buoy systems in the spring of 2019, TSS levels remained at lower levels than 3 ppm. Additionally, the company could keep pH and TSS in check, complying with EPA's NPDES permit limits.



After installing the MPC-Buoy in their wastewater pond, American Crystal Sugar Company has reduced chlorophyll-a levels by up to 85%.

As a result, TSS values lowered, enabling them to comply with the NPDES limits. American Crystal Sugar is the first company in the sugar beets industry to start using ultrasonic technology for improving water quality.

About LG Sonic

We're global leaders in sustainable algae management. Our patented ultrasound integrated into our technologies can be remotely controlled by our team of experts.

For over 10 years, we've invested in research and development. Today, we deliver technological solutions that restore aquatic ecosystems without the use of chemicals or other pollutants.

100+
Clients

55+
Countries

12+
Industries served



LG Sonic US

In 2018, we opened our US office and expanded our business in North America. Ever since, we've been able to better service the needs of our customers. We are running algae treatment projects across the states, including California, New York, Florida, New Jersey, Pennsylvania, Colorado, and Georgia.

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