



PUROXI

PURE WATER GLOBAL INC.

“THE BEST
WATER
SOLUTION”

What is ultrasonic algae control?

Ultrasonic algae control devices from LG Sound, are very specific, underwater systems, that emit ultrasonic sound waves which destroy algae. Using scientifically proven frequencies.

LG Sonic[®] offers the possibility to eliminate many types of algae, including the toxic blue-green algae (cyanobacteria) and biofilm build-up that can cause problems in drinking water and cooling towers.

An effective ultrasonic technology can be used to treat water environmentally friendly and reduce chemical treatment in different applications. The LG Sonic[®] products are typically found to be useful in industrial water systems such as irrigation tanks, aquaculture basins, cooling towers and (waste) water treatment plants. Other common applications for LG Sonic[®] are (more or less) stagnant water bodies such as ponds and lakes.



The Advantages of our Technology

Controls algae

The LG Sonic[®] technology combines strength, safety and efficiency in one product to control algae in many applications.

Environmentally friendly

LG Sonic[®] offers a method to control algae without using chemicals or to reduce chemical treatment. Besides that, the LG Sonic[®] technology has a very low power consumption.

Friendly for fish and water plants

The LG Sonic[®] technology is tough on algae yet completely harmless for other life forms present in the water. Various universities have researched the effect of the LG Sonic[®] products on fish, zooplankton and water plants, but no negative effect was found.

Controls biofilm

LG Sonic[®] uses the newest technologies to control biofilm in many applications where chemical additives are unwanted or need to be reduced.

Effective on large water surfaces

The LG Sonic[®] products can efficiently control algae up to 186 meter per device with a power consumption of just 5 Watt.

Easy to install and maintain

The LG Sonic[®] devices are being placed in the water body itself, emitting sound waves through your water reservoir.

How does ultrasonic algae control work?

Collapse of gas vesicles

Blue-green algae are capable of travelling through the water column vertically due to their possession of gas vesicles. The ultrasound from the LG Sonic® ruptures these vesicles, preventing the algae from rising to the surface and absorbing light for their photosynthesis.

Creating a sound barrier

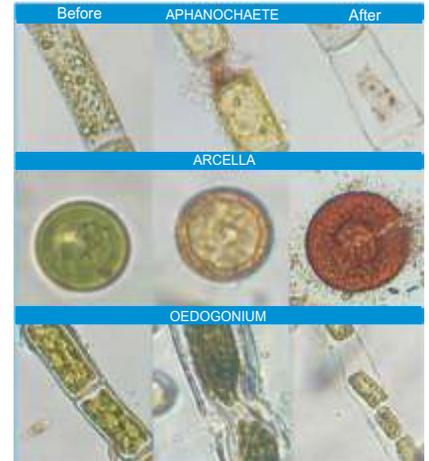
Ultrasound from the right frequency creates a sound barrier in the top layer of the water, reflecting on objects with a different density than water. This affects the buoyancy of many types of algae and prevents algae from floating up to the surface, thus dying by lack of light.

Prevent bacterial adherence

In an unstable environment bacteria adhere to a surface, creating a biofilm. LG Sonic® devices create a pressure area around a surface, preventing bacteria to adhere.

Damage of tonoplast

As an effect of ultrasound, the tonoplast of green algae can rupture, releasing the content of the vacuole into the inner cell. Besides this, the adhesion of the cell membrane and the cell wall can be damaged.



Before and after ultrasonic treatment with the LG Sonic® solution



Changing the ultrasonic program according to the water conditions, type of algae & application, results in:

- More efficient algae control
- Quicker results
- Limited growth of resistant algae

Chameleon Technology™

Why do you need the Chameleon technology™?

Within a body of water, physico-chemical parameters, waterflow and micro-organisms present can differ. The type of algae in different reservoirs can also vary and even change during the season.

To use ultrasonic sound waves effectively for algae or biofilm control, it is important that very specific frequencies are used, issued under specific circumstances and with the right amplitude and burst duration. Only then, the micro-organism can be controlled effectively.

Current ultrasonic algae control products work with one selected, broadband frequency program that has to target all micro-organisms in the water. That means, only during a short time span, the ultrasonic unit will actually be emitting the right frequency for the present algae.

What is the Chameleon technology™?

The Chameleon technology changes its frequency program based on the water quality, type of algae or other micro-organisms present in a specific water reservoir. By changing the frequency program at any given time, new or different algae blooms can be suppressed when they arise.

The Chameleon technology can be used remotely, by sending a SMS message, or you can change the program with the interactive LCD screen on the control box.



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Applications for the LG SONIC e-line



Cooling Tower

The most effective algae and biofilm control solution in cooling towers with the multiple frequency programs of the LG Sonic e-Line. Due to its high efficiency, you can now reduce biocide consumption in the cooling tower and improve the water quality.

Drinking water Plant

LG Sonic prevents taste and odour problems by controlling the growth of Cyanobacteria, biofilm and filamentous bacteria. Thereby reducing metabolic by-products such as toxins, geosmins and MIB, along with THM formation when chemicals are used. LG Sonic can be installed in tanks with low retention time and also in flocculation tanks where they improve the interaction between reagents and reactants.



WWTP

Controls suspended and filamentous algae without using chemicals and without killing beneficial bacteria in different stages of the wastewater treatment plant. Aids to reduced levels of TSS, BOD, COD and PH facilitating easier discharge of the wastewater.



Ponds

Reduces algae blooms and bad odour, thereby increasing the recreational value of ornamental and golf course ponds. Thanks to the Chameleon technology, targeted algae are being controlled without harming fish, frogs, zooplankton, water plants and other types of life present in the water.

Swimming pools

LG Sonic e-Line can efficiently aid in a reduced chlorine consumption of your swimming pool. The specific frequency programs of the e-Line can be set to target black algae, biofilm or suspended algae. The e-Line features a special swimming pool program so the ultrasound can not be heard while swimming.



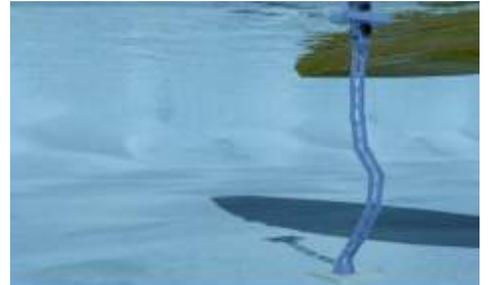
Aquaculture

Several aquaculture ponds, can be treated at the same time. thanks to the multiple transducer option of the e-line. LG Sonic improves the water quality for fish and shrimp and reduces cyanobacterial toxins, improving their taste and minimizing losses of the cultures animals.

Flexi-arm:

This product has been especially designed to make the installation of the units easier.

The Flexi-arm offers the possibility to aim the LG Sonic® unit more precise in the right direction, leading to an even better result of your ultrasound treatment. The connecting arm is flexible and it can be adjusted to fit every (possible) application, where previously improvised techniques, such as ropes and poles were used. The Flexi-arm can be extended up to 50 meters.



LG Sound company

LG Sound has developed the LG Sonic technology to control algae, cyanobacteria and biofilm safely. Our objective has always been to reduce or eliminate harmful chemicals in our environment. Therefore we have developed a technology that controls algae without disturbing the natural balance of water ecosystems.



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