

LG SOUND - INNOVATION BASED ON KNOWLEDGE



After more than 10 years of experience with the usage of ultrasonic devices in controlling algae and biofilm, LG Sound now proudly presents the LG Sonic® technology.

The LG Sonic® technology consists of a new generation of ultrasonic devices, which inhibit algal growth on an environmentally friendly basis without chemical additives.

“Control algae the environmentally friendly way in different applications,,



- Enclosure & Boxes
- EATON Circuit Breaker & Contactor
- Pushbutton & Cam Switches
- Relay, Timer & Fuse Module
- DC Power Supply & UPS
- Indoor Lighting
- Wiring Accessories
- Terminal Block & Strips
- Digital Multimeters
- Panel Accessories
- Wiring Crimping Tools
- Control & Power Cables
- Switches & Sockets
- LG Sound

ADVANTAGES OF THE LG SONIC® TECHNOLOGY



Using ultrasonic sound waves only, the LG Sonic® controls algae and biofilm on all places where water is being stored.

- **Controls algae**

The **LG Sonic®** technology combines strength, safety and efficiency in one product to control algae without chemicals.

- **Environmentally friendly**

LG Sonic® offers you a method to control algae without using chemicals. Besides that, the **LG Sonic®** technology has a very low power consumption.

- **Effective on large water surfaces**

The **LG Sonic®** products can efficiently control algae on a distance up to 186 meter. with a power consumption of just 10 Watt. For reservoirs larger than 186 meters, the biologists from LG Sound can assist you with a detailed plan to install multiple devices for optimal water treatment.

- **Controls biofilm**

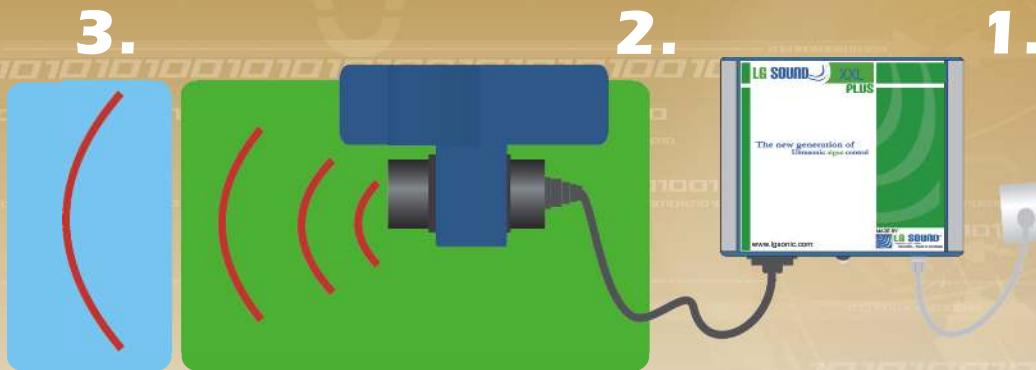
LG Sonic® uses the latest technologies to control biofilm in many applications where chemical additives are unwanted.

- **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 and water plants, but no negative effect was found.

- **Easy to install and maintain**

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



• CONTROL ALGAE IN 3 SIMPLE STEPS

Algae control does not have to be complicated.

LG Sound provide you with a simple system to control your algae.

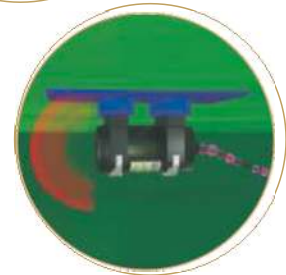
1. Generate ultrasound

Sound pulses are being generated within the power box. Thanks to the Dc-Mf Technology™, used only by the **LG Sonic®**, the power box generates several different frequencies simultaneously and sends them to the transducer.



2. Transmit ultrasound

The transducer transmits these sound pulses into the water with a very high sound pressure (dB). The sound waves have different frequencies but all lie in the ultrasound range and are thus inaudible.



3. Damage algae

The high pressure ultrasound emitted by the **LG Sonic®** targets many different algal structures. Components of algae cells, within the long range of **LG Sonic®**, oscillate on the sound frequencies. This leads to tearing of different cell organelles such as the vacuole's tonoplast, cell wall or membrane and the gas vesicles of blue-green algae. Because many frequencies are used simultaneously different species of algae can be controlled on an efficient manner within a very short time span.



Before and after ultrasonic treatment with the LG Sonic® solution

BENEFITS OF THE LG SONIC® TECHNOLOGY



- **Controls algae in a range up to 186 meter...**

One **LG Sonic**® device can control algae in a range up to 186 meter. For applications larger than this, multiple devices can be used.

- **Low Power - Bright Signal Technology™**

We feel that the strength of a sound wave is not in the power you put into them, but in their shape and transmission.

The Lp-Bs technology™ enables the **LG Sonic**® devices to send out a sound signal under optimal conditions. This makes it unnecessary to apply high power to obtain a long range.

- **Low energy consumption**

Due to the highly advanced Lp-Bs technology™ the **LG Sonic**® models use a maximum of 13 Watts.

- **Dual Core-Multi Frequency Technology™**

Controlling one type of algae in a water reservoir often means another type will have a better chance to grow. Therefore the **LG Sonic**® uses the Dc-Mf Technology™, which produces multiple frequencies simultaneously, controlling several algal species at the same time.

- **Weatherproof control box**

Completely innovated aluminium control box to better protect the PCB from weather influences. The aluminium box has better cooling capabilities and is water resistant.

- **Highly advanced broadband transducer**

The **LG Sonic**® transducer has been especially manufactured for LG Sound and has a protected formula.

The transducers have been designed to gain the highest efficiency in transmitting the sound energy to the water.

- **Easy to install**

The **LG Sonic**® devices are easy to install. After delivery the product can be installed immediately in a water reservoir.

- **Low maintenance**

LG Sonic® devices have hardly any maintenance.

- **3 years guarantee**

The **LG Sonic**® XXL plus, XL plus, and XXL models have a guarantee of 3 years. Smaller models have a 2 year guarantee

- **Solar system available**

The **LG Sonic**® plus models can operate on 24 or 36V using only 10 Watt and are thus capable to operate on a standalone solar system.

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LG SONIC® MODELS

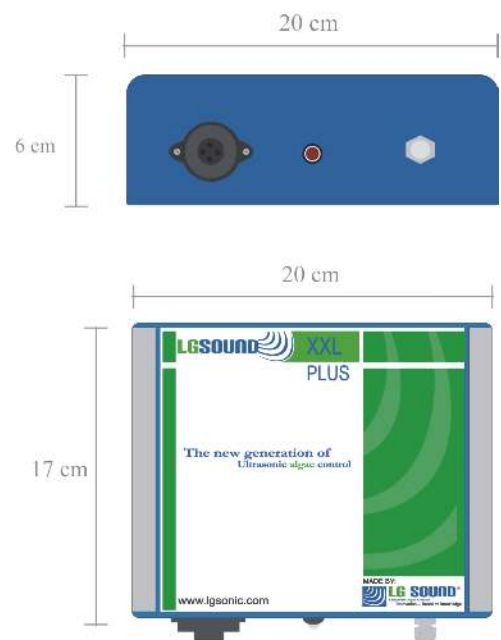
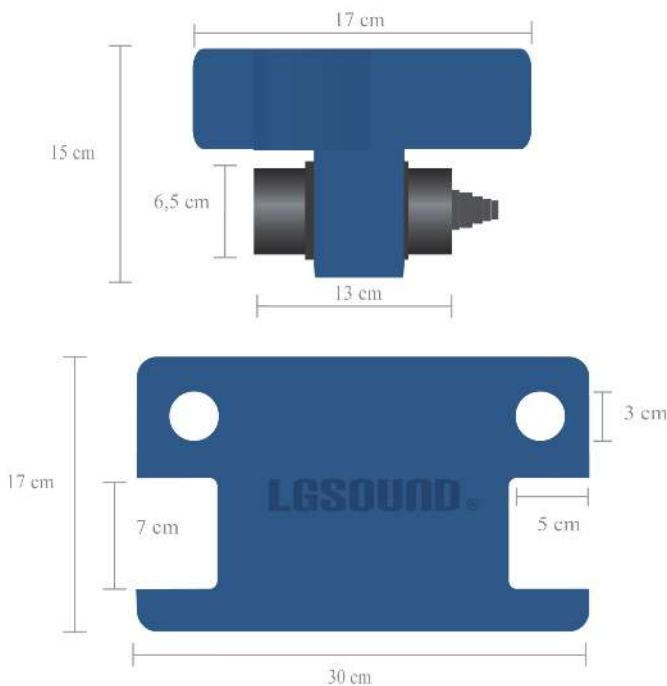
LG Sonic® MODELS

Whether you require a strong unit capable of treating very large water surfaces, or are looking for a device capable to control the algae in your garden pond efficiently, **LG Sonic®** offers you the best solution.

The **LG Sonic®** technology consists of 7 devices which have their own benefits and strengths to optimally control algae or biofilm in every application. Because of the highly advanced technique, the **LG Sonic®** models produce the strongest sound signals, with the lowest possible power consumption.

TECHNICAL SPECIFICATIONS

MODELS	XXL PLUS	XL PLUS	TANK	POOL	SSS
Range Meter (Feet)	186 (600)	150 (350)	70 (230)	50 (150)	10 (30)
AC Power input 110-240V 50/60 Hz	✓	✓	✓	✓	✓
DC Power input	24V	24V	36V	36V	36V
Energy consumption (W/h)	11W	10W	13W	13W	12W
Lp-Bs Technology™	Yes	Yes	No	No	No
Dual Core Multi Frequency™	Yes	Yes	Yes	Yes	Yes
Type of electric plug	Variable	Variable	Variable	Variable	Variable
Cable length meter (feet)	17(55)	17(55)	17(55)	10(30)	10(30)
Float	Yes	Yes	Yes	Optional	Optional
Weight kg (lb)	6(13)	6(13)	6(13)	5(9)	5(9)
Guarantee	3 years	3 years	2 years	2 years	2 years



LAKES



“A safe method to control algae in a large area.”

- **Controls algae**

The **LG Sonic**® technology combines strength, safety and efficiency in one product to control algae in large lakes. Blue-green algae are known to cause serious health problems and make recreational use of a lake nearly impossible.

This can be controlled efficiently with the **LG Sonic**® products.

Furthermore, green algae, whether filamentous or suspended, are affected by the **LG Sonic**® technology.

- **Effective on large water surfaces**

The Lp-Bs technology™ enables the **LG Sonic**® products to efficiently control algae with a range of 186 meter with a power consumption of just 10 Watt.

For larger lakes, the professional biologists from LG Sound can assist you with a detailed plan to install several devices for optimal water treatment.

- **Beneficial to its environment**

The **LG Sonic**® technology controls algae but is safe for humans, animals, water plants and insects.

Using the **LG Sonic**® in a lake, the natural balance between all these life forms will be restored leading to a healthier and more stable environment.

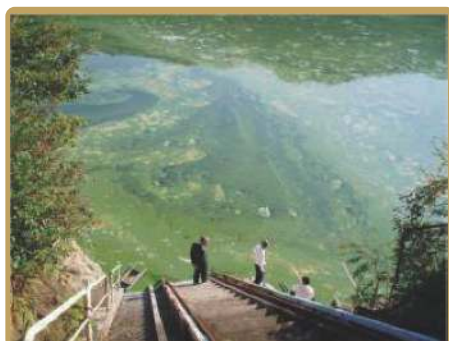
- **Solar power available**

In lakes where a power source is not available the **LG Sonic**® devices can be installed on a solar system.

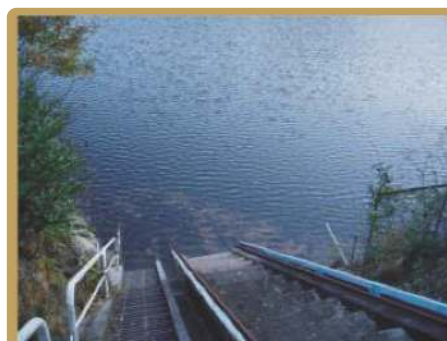
The technicians working for LG Sound can advise you on the best installation for your application.

- **Easy to install and maintain**

The installation of the devices is easy and there is hardly any maintenance necessary.



Before



After

- Enclosure & Boxes
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(KOI) POND



• Controls algae

Forget scooping off algae and start enjoying your pond. Algae growth in your pond can now effectively be controlled with the **LG Sonic**® technology. Ponds clear up in only a few weeks and will be kept clean with one of the **LG Sonic**® products.

• Friendly for fish, waterplants and insects

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

• Easy to install and maintain

The **LG Sonic**® products work on the total surface of the pond. Installation of an extra pump or other system is not necessary, the products can just be placed in the pond. After installation the devices are nearly maintenance free.

• Environmentally friendly

The **LG Sonic**® products can be used without chemicals and have a very low power consumption.

Which product do I need?

- For ponds smaller than 10 meter in length:
LG Sonic XS or SSS
- For ponds up to 50 meter in length:
LG Sonic Tank
- For ponds up to 100 meter in length:
LG Sonic XL Plus
For bigger ponds
LG Sonic XXL Plus



Before



After

SWIMMING POOL



“Enjoy a clean swimming pool with less chlorine.”

- **Controls algae**

Controls algae on an environmentally friendly manner without causing any harm to humans or animals.

- **Effective against black algae**

Black algae, which stain your pool walls and floors become easy to remove once treated with the **LG Sonic**® Pool. After removing the layer of algae from the walls, the **LG Sonic**® technology will prevent them from growing back.

- **Reduces biofilm**

A biofilm, the slimy attachments on the sides of the pool, will loosen and can be cleaned easily due to the sound waves produced by the **LG Sonic**®.

- **Reduction of chlorine**

Controlling algae and biofilm in your swimming pool, the **LG Sonic**® technology will assist you in reducing the chlorine treatment in your swimming pool. Experience healthier water to swim in with the **LG Sonic**® technology.

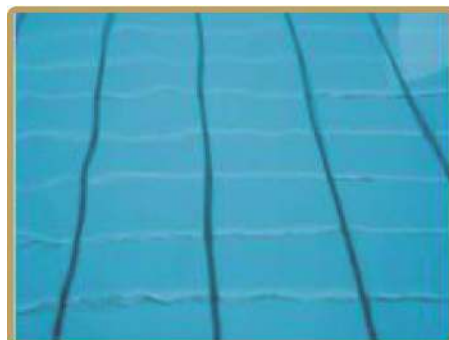
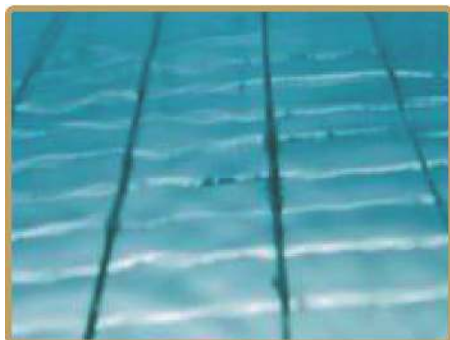
“ Even the largest swimming pool in the world uses **LG Sonic**® to keep it clear ”

Which product do I need?

- Swimming pools up to 50 meter can be treated with the **LG Sonic Pool**

Typical installation?

- Within the swimming area



• Reduction of black algal growth over a period of 5 days of **LG Sonic**® treatment

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IRRIGATION



“Control algae on an easy, cost-efficient manner.”

- **Controls algae**

Algae growth in water reservoirs can be controlled without chemicals or labor, with the **LG Sonic**® technology.

The sound signals produced by the **LG Sonic**® technology are so strong that they can even control algae in reservoirs with a low retention time.

- **Prevent clogging of filters**

It is mostly algae that clog filters, drip installations and nozzles. Prevent frequent maintenance to your system due to algal growth with the **LG Sonic**® technology.

- **Also effective in tanks with a low retention time**

LG Sonic® uses the Dc-Mf technology™ which enables the devices to affect several different algal species within a second. Therefore the LG Sonic technology works fast and efficient enough to be applied on tanks with a low retention time.

- **No maintenance**

The **LG Sonic**® devices are almost maintenance free.

- **Easy to install**

Placement of the **LG Sonic**® devices involves only placing the device in the water and turning it on.

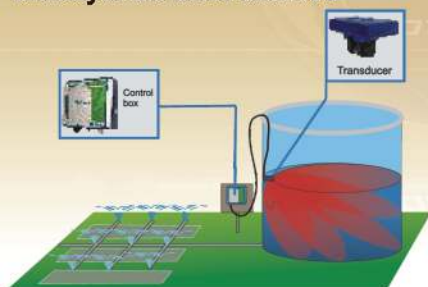
Which product do I need?

Measurement of reservoir :

- Up to 50 meter : **LG Sonic Tank**
- 100 meter : **LG Sonic XL plus**
- 150 meter : **LG Sonic XXL Plus**
- 150+ meter : 1 or more, **LG Sonic XXL plus**

Typical installation?

Directly in the water reservoir



• **Ask us for our irrigation brochure!**



Before



After

AQUACULTURE



INLAND AQUACULTURE

- **Controls algae**

The **LG Sonic**® technology will retain a 90% algal reduction in your fish tanks in a environmentally friendly manner without the use of chemicals.

- **Controls cyanobacterial toxins, MIB and geosmins**

By controlling blue-green algae growth, toxins and other negative side effects of an algal bloom will be reduced simultaneously with your algal problems.

- **Reduces TSS, Turbidity, BOD, COD and pH.**

- **Safe for fish, waterplants and insects**

No negative effects by the **LG Sonic**® products were found on fish, waterplants and insects in various studies performed at various universities.

OPEN SEA AQUACULTURE

- **Reduces biofouling**

By directly aiming the **LG Sonic**® towards a fish cage the formation of biofilm will be prevented, together with the adherence of algae and other organisms present in the water

- **Reduces maintenance of fish cages**

LG Sonic® prevents the fouling of fish cages in open sea, thereby drastically reducing maintenance to the fish cages.



Before



After



Salmon net cage



• **Ask us for our aquaculture brochure!**

WATER TREATMENT PLANTS



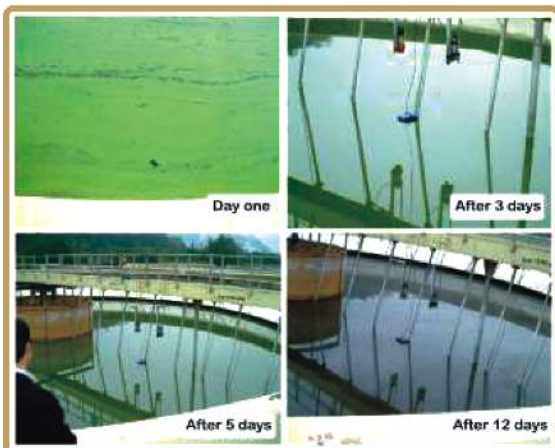
“Controls algae without killing beneficial bacteria.”

- **Controls algae**

Algal growth in clarifiers, sand filters or filter basins can be controlled without using chemicals. LG Sound provides special industrial models to control the growth of filamentous and suspended algae in water treatment plants.

- **Improves sludge reduction**

The **LG Sonic**® technology does not harm bacteria in charge of sludge reduction. Various studies have proven that the **LG Sonic**® technology, combined with a bacterial treatment of both aerobic and anaerobic bacteria leads to a faster sludge reduction.



- **Better interaction between both solids and bacteria**

A higher interaction surface between dissolved solids and bacteria can be established in DAF or flocculation tanks using the ultrasound produced by the **LG Sonic**®. Because **LG Sonic**® does not harm the bacteria used, sludge reduction becomes more efficient.

- **Environmentally friendly**

With the introduction of the Lp-Bs Technology™, the **LG Sonic**® devices have an increased strength and efficiency yet only use 10 Watt. Chemical treatment to prevent algal growth becomes hardly necessary and the treatment plants' efficiency can be increased.

Which product do I need?

- Measurement of tank:

Length

- 13 meter 1xLG Sonic XL Plus
- 20 meter 1xLG Sonic XXL plus
- 25 meter 2x LG Sonic XL Plus
- 40 mete 2x LG Sonic XXL plus

- **Ask us for our waste water brochure!**

COOLING TOWERS



“Reduces chemical treatment by controlling algae..”

- **Controls algae**

The **LG Sonic**® technology directly controls existing algae and prevents the growth of new algal cells without using chemicals. Thanks to the new Lp-Bs Technology™ the **LG Sonic**® products can control algal growth in a circuit using only 10 Watt.

- **Controls biofilm formation**

The sound waves produced by the **LG Sonic**® are strong enough to inhibit the adherence of bacteria to a surface. EPS, present in an existing biofilm, is directly targeted, degrading the biofilm.

- **Prevent damage to pumps and pipes**

Bacteria present in a biofilm can produce acids, corrosive for metal, or even use metal as fuel. Debris present in the cooling tower water can be collected in the biofilm, leading to damage to pumps and pipes. With **LG Sonic**® the formation of a biofilm can be controlled, preventing damage to the system.

- **Reduces chemicals**

The **LG Sonic**® technology effectively controls algae, biofilm and Legionella which diminishes the need to frequently add chemicals, to shock the cooling water.

- **Improved efficiency**

Even a small layer of biofilm within a pipe reduces its diameter. This means less water can be pumped around the circuit and more power is needed. Besides that, a biofilm can function as an insulating layer around the grids and pipes, thereby reducing the cooling efficiency of the tower. By reducing the formation of a biofilm, the **LG Sonic**® helps increase the efficiency of the cooling tower.

Which product do I need?

• **LG Sonic**® **XXL PLUS** or **XL PLUS** :
for installation, more information and reference please ask us about our cooling tower brochure

- Enclosure & Boxes
- EATON Circuit Breaker & Contactor
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LG SOUND - INNOVATION BASED ON KNOWLEDGE



Why choose LG Sound :

- ✓ 3 years guarantee on the industrial **LG Sonic**® devices
- ✓ More than 8000 **LG Sonic**® devices have been installed in 48 countries worldwide
- ✓ Scientifically proven technology
- ✓ Safe for fish, plants, and other aquatic life
- ✓ No high current or high voltages are transmitted into the water
- ✓ **LG Sonic**® units are developed in the Netherlands in collaboration with several renowned universities :
 - University of Amsterdam (VU)
 - UNICT Catania (Italy)
 - University of Portsmouth (UK)
 - Limnos (Slovenia)
 - BOKU (Austria)

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