

## Ultrasonic Algae Control Without Chemicals



**SonicSolutions SS 400** is a powerful ultrasonic algae control unit with the same bandwidth coverage and number of generated frequencies as the SS 500 but with a slightly less output range for smaller water bodies. Built with the same performance standards, this system has the power to cover a 2.3 acre pond for all roaming algae types and up to 16.4 acres for blue-green algae.

Both the piezo transducer and the power supply box are waterproof. The power supply is UL rated for outdoor use. The frequency generator is housed in the transducer assembly and drives a piezo element that acts like an underwater speaker. It generates sound frequencies that are fatal for most types of algae, but are harmless to humans, animals, fish and aquatic plants. It damages green algae by tearing the inner cell wall away from the connected outer surface contractile vacuole that controls pressure and fluid flow thus preventing normal cell function. In a different manner, blue-green algae are killed by breaking hundreds of very tender floatation tubes in each cell called gas vesicles. Without them these algae can no longer float to the surface for sufficient light and they die.



Additionally, ultrasound has been shown to prevent bacterial colonization on clean surfaces. The effect occurs due to sufficient sound energy levels to cause a sensation of turbulence for facultative anaerobic bacteria. These types of bacteria form the initial under layer colonies that eventually form biofilm, a colony of various organisms including algae and higher order organisms that plague many water facilities. By preventing the initial layer formation, the biofilm building process is thwarted to substantially reduce cleaning costs by increasing cleaning cycle time periods, reducing cleaning time, and reducing chemical use for this purpose. In potable water facilities, this reduces THM and HAA levels by limiting halide disinfection products such as Chlorine, Sodium hypochlorite, etc. This effect requires higher levels of sound intensity, so the effect range is less than for algae at about 203 feet (62 meters). See beam pattern below.

## Applications and Technical Data:

The **SonicSolutions SS 400** has a maximum control ranges of up to 1354 feet (413 meters) for simple blue green algae and up to 509 feet (155 meters) for other roaming algae. Potential applications are: Industrial and municipal water supplies and treatment lagoons, lakes, ponds, drinking water storage impoundments, water purifying systems, cooling towers, horticulture water storage, irrigation systems, recycled water containers, aquaculture raceways and recycled water plants.



### Technical data Sonic Solutions SS 400

<b>Control Range:</b>	<b>Green roaming, filamentous and diatoms:</b> 509 feet (155 meters), 2.3 acres (0.94 hectares) <b>Blue-green algae:</b> 1354 feet (513 meters), 16.4 acres (6.7 hectares) <b>Biofilm growth on cleaned surfaces:</b> 203 feet (62 meters), 0.37 acres (0.15 hectares) (See control pattern on next page.)
<b>Power Used:</b>	9.2 watts on AC power (6.2 watts on DC power)
<b>Input Voltage</b>	110 volt AC common household current with GFCI or 24 volt DC (solar rechargeable). 220 volt AC EU and UK style plugs available.
<b>Cable:</b>	50 feet (15 meters) extendable to 200 feet (61 meters) rated SJTOW for heavy duty outdoor use. Waterproof connectors.
<b>Certifications</b>	UL listed power supply for outdoor use (E249834) NSF/ANSI 61 CE listed EPA Registration #074929-MA-001
<b>Warranty</b>	2 Years Service by Manufacturer

# SONIC SOLUTIONS SS 400

## Ultrasonic Algae Control Range Estimates, Feet

**Legend:**

- Blue-Green Algae Range
- Green Roaming Algae Range
- Biofilm Control Range

