

Algae Controller

What causes algae blooms

Growth of algae usually means that the balance in the water has been disturbed. Algae are primitive aquatic plants and their spores are present in every drop of water. Algae feed on nutritional salts, among other things, and if the conditions are favourable they start to grow. This starts to happen at :

- temperatures above 8°C
- exposure to sufficient sunlight
- an excess of nutrients in the water.

An increase in content of protein, ammonia, nitrite, nitrate and phosphate will stimulate the creation of algae.



Floating algae/Filament algae

Two main types of algae are:

- Floating algae
- Filament algae

Floating algae causes the water to become a non-transparent green. Using the algae controller, most floating algae will die in a few days, the dead ones will sink to the bottom. In flowing water the remains of the algae can make the water turbid for some time. With the algae controller in place however, no new algae are created. The remains of the algae will get trapped in filters of circulation pumps.

Filament algae usually attaches to the walls, bottoms (in shallow water) and plants in water bodies and can gradually cover large areas of the water surface. With the algae controller installed, the algae will start to loosen away from the walls, bottoms and plants and will float to the top. This process will take 3-6 weeks and can give the impression that algae growth has increased. After time you will notice a change in colour from bright green to yellow and then black. Once this stage has been reached, you know that you have your algae problem under control.

During hot spells there may be the occasional spot of algae growth, however the algae controller will clear this in a few days. It is therefore essential to keep the algae controller switched on at all time to avoid re-occurrence of large scale algae growth.

Principle of Operation

The Waterman Algae Controller uses the principle of resonation frequency to implode the vacuole (a microscopically small air bubble inside the alga). This is achieved by transmitting very specific sound frequencies through a submersed transmitter about 150 mm below the waterline. Once existing algae are destroyed, no further algae will appear.

Power supply

The controller can operate on AC (16V) and DC (12-24V) voltage and as such can be powered via an AC transformer or by solar as shown in the picture on the previous page. The advantage of the solar powered version is of course the fact that the unit can be placed anywhere without restrictions caused by cable connections. For areas where vandalism is rife, we can provide the unit in an aluminium enclosure that can be bolted to a wall. This does however increase the amount of labour involved in installing the equipment



Installation

In order to properly install the Waterman Algae controller, it is important to understand the operation of the device. In essence, the transducer mounted underneath the float in the water (between 100 and 150 mm below the surface) acts as a loud speaker, transmitting specific sound waves out from its installed position. As with normal loud speakers, barriers will block the sound waves and prevent the effect that the unit will have on stationary algae. Water movements that allow floating algae to get in contact with the sound waves intermittently will however provide limited functionality.

As with loud speakers, the sound only travels forward and sideways out from the transducer, thereby treating a 130-degree pie shaped area with a 100 m radius. It is therefore recommended to install the transducer near the edge of your water area pointing towards the furthest point, please ensure that the effect of obstructions is minimized. Where this cannot be achieved, a second algae controller may be necessary.

For further information please contact our office and ask for Henk de Graaf