

toscano



Ultrasound against fouling and barnacles

Keep your boat hull clean!

Algae & barnacles removal

The mitigation, destruction and growth-inhibition of algae, fouling and barnacles by use of ultrasonic pulses, which avoids chemical usage, is ideally suited for preventive maintenance and with many advantages.



Destruction and growth-inhibition of algae by ultrasonic energy pulses

Ultrasounds are present in a wide range of frequencies, beyond the range of human hearing (20 kHz - 10 MHz).

Sound propagation in a medium such as water is carried out by continuous waves transition through the medium in two phases: rarefaction (negative pressure) and compression (positive pressure).

Our transducer offers a coupling technology that matches the transmission pulses to the water density, resulting in more effective penetration of the ultrasonic waves, delivering more acoustic pressure over greater distances.

DUMO Algacleaner emits pulses that cause damage in vacuoles or cell tissue (fig.1) and inhibits algal growth process and vital functions.

The system emits different harmonic frequencies, creating waves of different length, generating effective wavefronts against algae by the balance of parameters such as wave shape, wave matching, pressure, and power.

Depending of the environmental conditions water nutrients, hull shape, as well as other biological characteristics, the effect of destruction and growing inhibition, start to be noticed from two to four weeks.



Discover DUMO
Algacleaner
Video

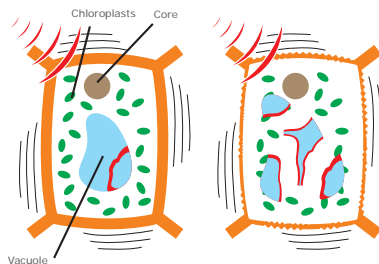
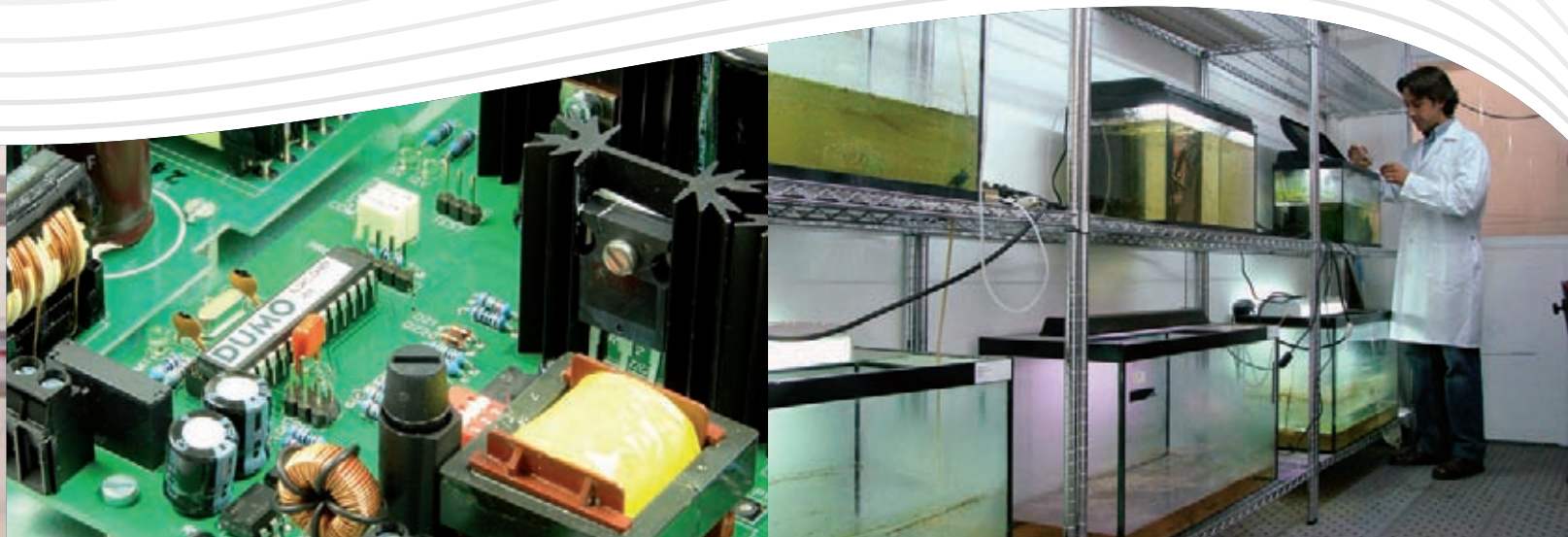
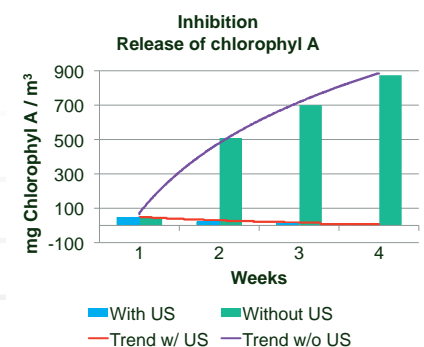
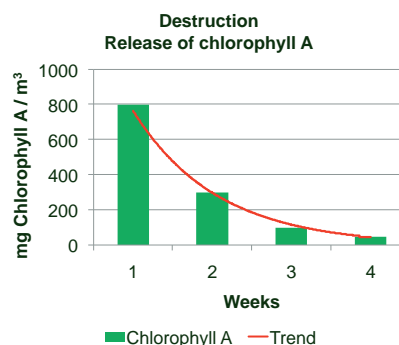
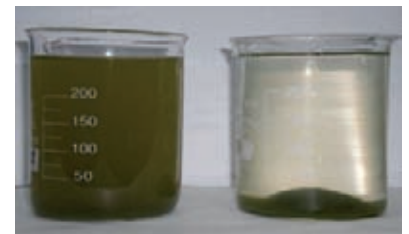


Fig. 1



The most effective and ecological way to prevent fouling and barnacles

DUMO Algacleaner® Marina

It is now possible to mitigate , fouling and barnacles in your boat hull, propellers, dock and submerged structures. DUMO ACM will help the good hull conditions, providing easy maintenance and improving sailing performance.

Installation is easy and versatile. All you need to do is float the device in the bow or stern of the boat and connect it to a power source or solar panel.

Advantages



Ecological



Easy to install



Non-toxic

Causes no harm to humans, animals or plants.



24/7

service



Clean

No need for chemical products



Low power

consumption



Minimal

maintenance



Reduces fuel

consumption



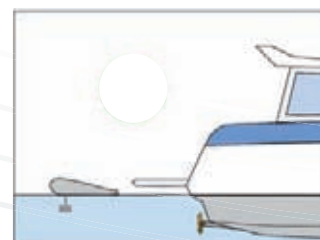
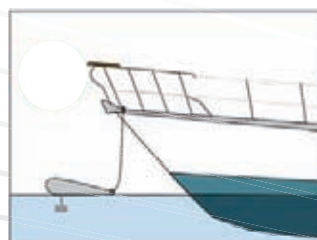
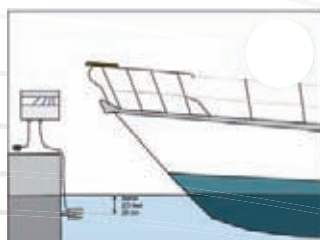
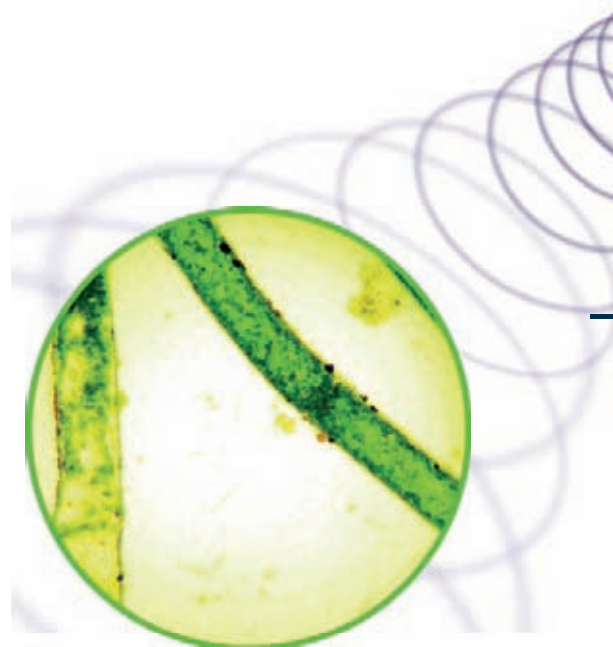
Reduces

maintenance costs



Improves sailing

performance

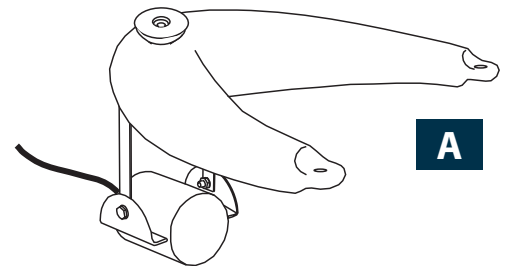


System description

- A. An ultrasonic transmitter attached to a float is placed under the surface of the water.
- B. An ultrasonic electronic generator to activate the transmitter is installed in a waterproof area powered by a 115/230V mains circuit or solar panel.
- C. A 30-meter cable connects the transmitter and generator.



B



C

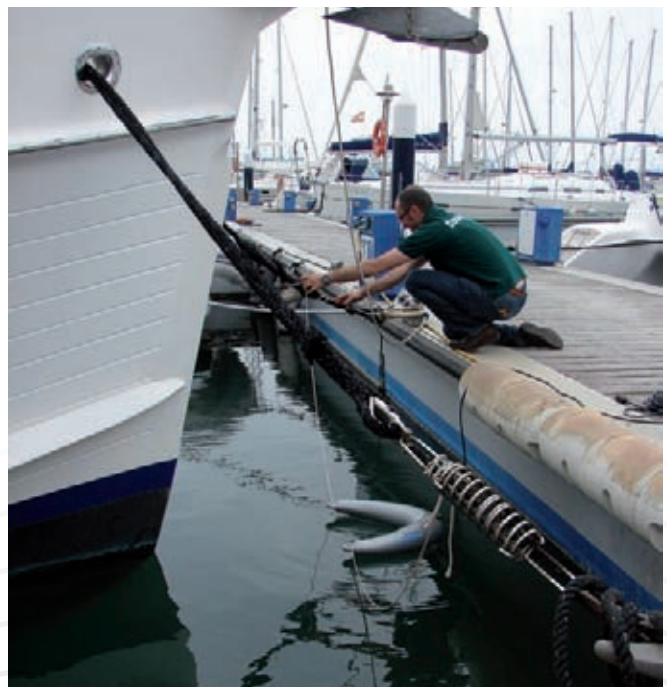
A

Not harmful for fishes



"...there were no alterations
the marine fish-farm on other
companion animal species..."

University of Huelva



Customer reference letters.
For further references and FAQ visit www.toscano.es.

Testimonials

1. MARINA PUERTO SHERRY (CADIZ, SPAIN)

"(...) during the period that this has been running in Dock V, results in protection against algae in the hull of HIPANIA can be considered as satisfactory."

Francisco Colón

Port Captain

Marina Puerto de Santa María S.A.

2. TUG BOAT JETTY (BERGEN, NORWAY)

"The tug hull and propeller are very clean and ultrasound seems to work very well."

Torgeir Andreassen

Slep og Fortøyning AS

3. ROCHELLE MARINA, FRANCE

DUMO ACM has also achieved excellent results in several boats, having minimized the cleaning vessels, and avoiding barnacles.



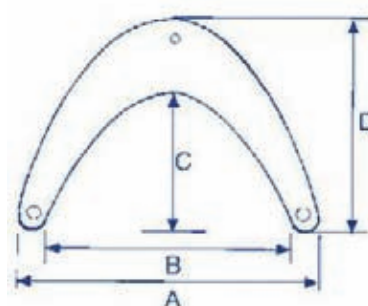
Video



Technical specifications

- Estimated operating lifetime: 8-10 years depending installation conditions.
- Ultrasonic waves: multifrequency digital generator with automatic sequence programs.
- Alarm output of no emission: auxiliary contact output (3A, 250V).
- Protections: surges, overheating and breakage of transmitter cable.
- Pilot lights: emission and voltage ON.

Model	DUMO ACM
Power supply	115/230 Vac (50/60 Hz) or 24 VDC
Transmitter cable	98 feet (30 m)
Med./max. power	60/130 W
Maximum range	up to 82 feet (25 m)
Control box	300 x 200 x 120 mm 11,8 x 7,8 x 4,7 inches



	cm	inches
A	53	21
B	41	16
C	38	15
D	52	21,5

Other DUMO products

Algacleaner for ponds, lakes & water reservoirs

AC-150FL



AC1-SOLAR



AC-360
Special design



Expertise manufacturing & Technical support





toscano

Electronics for the environment

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