UV LED Lamp: Your best Antifouling ally

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Ultraviolet (UV) radiation is an innovative alternative for preventing the formation of biofouling on surfaces that are constantly immersed in seawater. **Mariscope**, leader in marine technology development, produced a lamp using this revolutionary technology: The **UV LED Lights**.

This type of lamps includes a LED capable of inactivating the reproduction process of microorganisms present normally in salty water through the emission of electromagnetic radiation. This characteristic allows an immersed surface to be free of biofilm formation and larger incrustations when irradiated by the lamp.

Is a compact and versatile tool, features that allow it to keep different types of surfaces free of fouling.

Figure 1. UV Lamp after 7 weeks under sea. The part of the lamp that irradiates UV light can be appreciated in a clean state.

It is design to actuate over bounded surfaces like filters, sensors, or different kind of instruments (with about 50cm of maximum diameter of irradiated light), where the obstruction damages crucial data and measures from investigation purposes and underwater operations.

The capability of working continuously under low costs of operation make the UV lamp an **attractive and practical** tool, above all, to prevent complex and constant cleaning operations that requires to take equipment out of the water. In addition, it is **programmable**, so the on cycle, off cycle and the power can be selected by each user.

Research carried out with lights at different radiation emission cycles demonstrated to be successful in maintaining a fish tank-type mesh free of incrustations.

Figure 2. Metal structure with net prior to immersion in the sea. Condition: New.

Observation of the mesh prior to immersion (Fig.2) and after multiple weeks of exposure to microorganisms (Fig.3) allows us to verify the **efficiency** of the lights. Furthermore, the difference that exists for different light emission configurations is observed, for a larger off cycle in one of the lights (that consequently has a smaller clean radio).

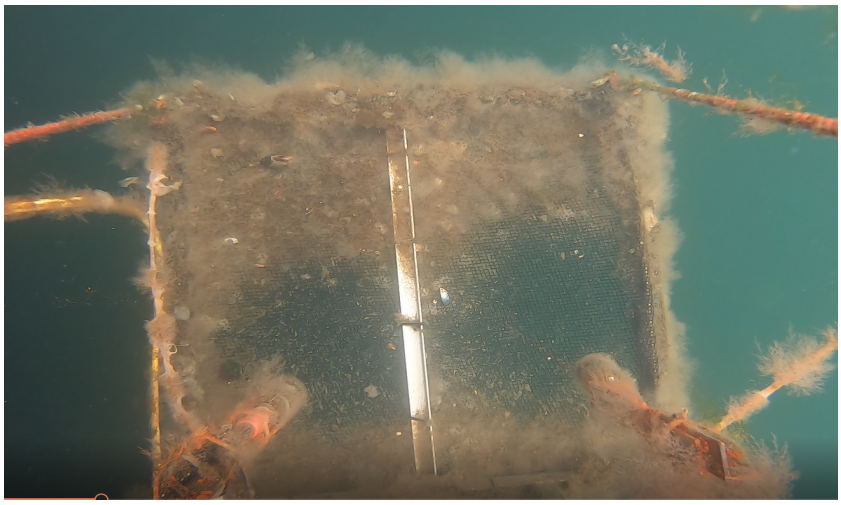

Figure 3. Mesh structure after 7 weeks of immersion in sea water. Different effects of lamps configurations can be observed. On the left, a Lamp with an on/off cycle of ¼ seconds, and on the right, a lamp with an on/off cycle of 1/1 seconds. Both at 40mW/s.

Figure 4. Detailed observation of areas irradiated by light on the left and areas free of UV radiation on the right. High presence of caprelids in the second case.