

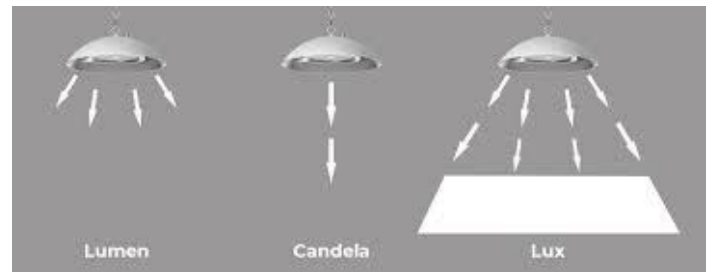
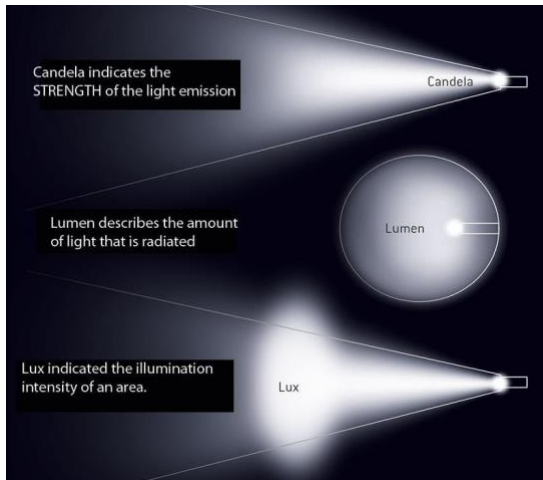
**Advantages of *N*Biotech *Light on Cells (LOC)* vs Normal Black Lights in the detection of Biofilms in in Food, Dairy, Beverage, Personal Care, Meat Processing, Pharmaceutical and other Sanitary Plants**

**LIGHT ON CELLS<sup>®</sup>**  
DESIGNED BY NBIOTECH



## Lux versus Lumens

The concepts of lux and lumen are closely related. While lumens measure the amount of light emitted by a source, lux determine the same amount of light, but are projected onto a surface. Therefore, one lux is equivalent to one lumen per square meter.



When detecting biofilms in plants, especially in areas where white light is present or where the distance or area between the operator and the area being inspected is great, such as in large deep tanks and vats, spray dryers, or other equipment it is important to have a UV light that produces the required intensity and wide UV-A spectrum to in order to provide visual detection and presence of biofilms.

The **NBiotech LOC** with its nine specialized LEDs and uniquely developed filters produces 18,000 Lux in different wavelengths which allows inspectors to see biofilms at a great distance even in the presence of ambient white light. These may not be detectable by weaker UV lanterns that produce only one wavelength and which require close proximity to the equipment surface. Weaker UV devices also have trouble detecting biofilms in the presence of ambient white light.

## Bacterial Detection

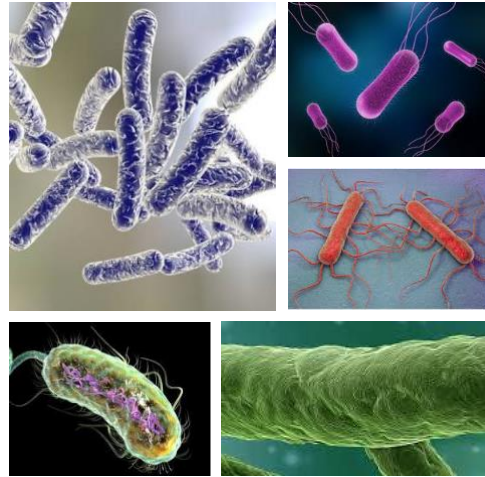
Most UV lights only produce one wavelength of UV which may detect only one or two types of bacteria at close range only and miss the critical ones.

The **NBiotech LOC** instrument and the special filters produce a variety of wavelengths in the UV-A spectrum which allows for detection of all types of bacteria even at great distances and in the presence of ambient white light according to our independent laboratory testing and white paper from UFSCAR Laboratories in Brazil as well as

independent customer internal testing. Normal black lights that some plants use do not possess the independent laboratory validation and proofs needed to show that they are effective on all types of bacteria.

**NBiotech LOC** can detect all of the more dangerous bacterial pathogens that are commonly found in processing plants such as:

- Salmonella
- Listeria Monocytogenes
- E-coli
- Cronobacter
- Campylobacter
- Cyclospora
- Shigella
- Vibrio
- Yersenia
- Legionella



**NBiotech LOC** can detect biofilms in all three phases: Active Bacteria, Bacteria in Sporulation (dormant) and also Dead Bacteria. Many times these are not detectable by normal UV lights or ATP swabs.

The **NBiotech LOC** lantern utilizes LifePO4 (Lithium Iron Phosphate) batteries which are non-combustible and anti-explosive versus normal Lithium Ion batteries.

All sanitary production plants need to prove that the equipment is clean before proceeding with the next batch so they need a device that can prove that the equipment and process are clean in order to pass the validation audit and also be able to track contamination during potential outbreak and product recall.

The **NBiotech LOC** device has helped many sanitary plants increase uptime by helping plant personnel visually detect areas of contamination, reduce their consumption of ATP swabs, and providing significant bottom line savings in testing time and consumables.