

# Scientific Operations Information

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According to Studies found Below, UVGI uniquely impacts bacteria and viruses - it actually damages their RNA and DNA, rendering them "inactive" and incapable of repair or regeneration or interacting with other RNA and DNA to reproduce and infect a host and reproduce.

UVGI has been successfully used by hospitals and other medical and laboratory facilities in air handling systems for over 40+ years in operating rooms, treatment rooms, and laboratories. "Approximately 60% of all UVGI air disinfection systems are installed in health care facilities"

source:

[https://www.orf.od.nih.gov/TechnicalResources/Bioenvironmental/Documents/Applicationsofultavioletgermicidalirradiationdisinfectioninhealthcarefacilities\\_508.pdf](https://www.orf.od.nih.gov/TechnicalResources/Bioenvironmental/Documents/Applicationsofultavioletgermicidalirradiationdisinfectioninhealthcarefacilities_508.pdf)

The Book Sanitizer utilizes a similar approach as UVGI air disinfection systems, blowing the material (pages, covering, cases, etc.) with compressed air to aerosolize pathogens and separating the pages for sanitization while illuminating UV-C lights from both above and below combined with the surface disinfection of the material with direct surface irradiation - all within the confines of the closed cabinet to maximize the results.

It is for these reasons, we believe that the UVGI in use in the Book Sanitizer has merit for our customers and will benefit them during this difficult pandemic.

The sheer number of uses of UVGI in operating rooms and laboratory safety cabinets provides a sound expectation that the similar use of UVGI in the Book Sanitizer will have a corresponding result against pathogens that may be present on books, Laptops, Tablets, DVD's, hot spots and cell phones and other material in use by libraries.

On the following page you will find links to various articles, papers, and abstracts online from the DCD, FDA, WHO, and other agencies and academic facilities.

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<https://www.cdc.gov/niosh/nioshtic-2/20034387.html>

<https://sites.nationalacademies.org/BasedOnScience/covid-19-does-ultraviolet-light-kill-the-coronavirus/index.htm>

<https://www.sciencedirect.com/science/article/pii/S0190962220305089>

(There are a number of good references in the footnotes of the paper above)

<https://aem.asm.org/content/78/6/1666>

[https://wwwnc.cdc.gov/eid/article/26/5/19-0994\\_article](https://wwwnc.cdc.gov/eid/article/26/5/19-0994_article)

<https://www.medrxiv.org/content/10.1101/2020.03.25.20043489v2>

<https://www.medrxiv.org/content/10.1101/2020.03.25.20043489v1.full.pdf>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2789813/>

# **ILS Book Sanitizer™**

## **Scientific Operations Information**

"ILS, Inc (and the PIK, Inc subsidiary) want to provide some much needed scientific information about the operation of the Book Sanitizer. With 40+ years of experience in the Library industry, we value our customers and our reputation above all and will not mislead anyone.

We want to be clear and leave no room for misinformation. The Book Sanitizer has been successfully tested against commonly found bacteria, ecoli, and s.aureus. It has not been currently tested against known infectious viruses such as M Tuberculosis, H1N1 (Influenza), SARS, MERS, or Covid-19. Even if testing resources were available for such testing (which they currently are not) , our priority in the testing queue would be well below the current testing needs of society at large - as they should be.

However, the nature of the Book Sanitizer and the mechanism it uses is widely reported (scientifically) and widely used (in hospital and water sanitation) for 40+ years.

The ILS Book Sanitizer employs UltraViolet Germicidal Irradiation (UVGI) - more commonly called "UV-C". The device uses 1 15 Watt UV-C bulb from above and 1 30W bulb from below which activate when the device is operated. This specific type of UV light has a unique effect on both ecoli and s.aureus bacteria and viruses and there are numerous studies and scientific papers supporting the use of UV-C and the results. We have provided direct quotes with citations and annotations below so that you may read for yourselves and see the evidence currently available for the use of UV-C against such microorganisms.

The UVGI bulbs in the ILS Book Sanitizer produce a UV-C wavelength of 254 nm (nanometers), the region of germicidal effectiveness most destructive to bacteria, mold and virus. The complete specifications on the lamps used can be found via the following link: <https://www.sankyo-denki.co.jp/en-uv-c-lamps>

It is vital that when replaced, only lamps emitting 254 nm wavelengths from a reputable source be installed and used in the device, to maintain its full capabilities.