

# WHAT IS UV BASED TECHNOLOGY?

UV DISINFECTION EXPERT

BEYOND  
CLEAN



Daan Hoek | Co-Founder UV Smart

*Beyond Clean UV Disinfection Expert™:*

## WHAT IS UV BASED TECHNOLOGY?

*Daan Hoek | Co-Founder UV Smart*

### Do You Know What UV based Technology Is and Where It Comes from?

Ultraviolet (UV) is radiation from the sun that emits a short and high wavelength. Sunlight consists of different kinds of ultraviolet radiation. UV is an electromagnetic radiation just outside the electromagnetic spectrum, making it invisible to the human eye.

Different types of radiation have different properties, depending on their wavelength. UV light which is blocked by the atmosphere and doesn't reach the Earth. This is just as well because this type of radiation is very harmful for living organisms.

### What are the effects of UV light?

As wavelengths get shorter (like UV), light contains a greater amount of energy.<sup>1</sup> This energy can damage the DNA and RNA of viruses and bacteria. Thymine, cytosine, adenine and guanine together form the basic components of DNA. When DNA comes into contact with enough UV light, a chemical bond is formed that causes the thymines to dimerise, meaning they grow together. The energy of the UV light disrupts the DNA and prevents micro-organisms from dividing.

While UV light doesn't remove the cells, it kills the organisms and prevents them from reproducing. This also prevents organisms from becoming resistant to UV light.

This is why UV light is used as a highly effective disinfectant (among other things) and it can achieve a high log reduction across the spectrum of pathogenic microorganisms. UV light can be generated with the help of special lamps, such as LEDs and fluorescent lamps. To function as a great disinfection method for the healthcare sector.

Would you like to know more about UV light? Stay tuned to the Beyond Clean Expert Series.

Rob Reddick. (2021). Type of ultraviolet light most effective at killing coronavirus is also the safest to use around people. Retrieved from:

<https://theconversation.com/type-of-ultraviolet-light-most-effective-at-killing-coronavirus-is-also-the-safest-to-use-around-people-169602>

Honeywell. (2000). Tech Lit Documents. Consulted from:

<https://customer.honeywell.com/resources/techlit/TechLitDocuments/50-0000s/50-8788.pdf>

Have more UV disinfection questions? Contact Daan at: [daan.hoek@uvsmart.nl](mailto:daan.hoek@uvsmart.nl)

*Beyond Clean UV Disinfection Expert™ Biography:*

## DAAN HOEK CO-FOUNDER UV SMART



Daan Hoek is the Co-Founder of UV Smart and very passionate about UV-C light as a disinfecting agent in the medical field. UV Smart is an innovative company based in the Netherlands with an established US office in New York.

The UV Smart devices can disinfect medical equipment quickly, efficiently, and consistently by using UV-C light. By refining this ancient technology, UV Smart made it possible to disinfect medical equipment in a rapid and effective way. UV-C light also eliminates the use of chemical disinfectants that are harmful to medical equipment, operators, and our planet, while saving a substantial amount of turnaround time. UV Smart is the front-runner in applying UV-C technology to medical devices. UV Smart is currently active in over 20 countries worldwide.

Daan is also the chairman of the Taskforce UV-C light of the Dutch Normalization Committee. Along with the taskforce, he developed the first European guideline for UV-C disinfection devices in the medical field. He is also in charge of all the clinical (multi-center) studies of UV Smart, three of which are running in the US and in Europe.

If you have any questions regarding UV-C light, feel free to reach out to him!

 **BEYOND**CLEAN 