

# PHOTONICS spectra

## WHITE PAPERS & APPLICATION NOTES

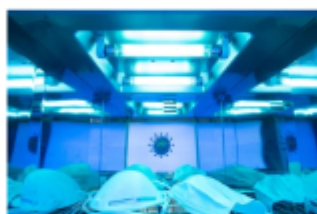


 GAMMA SCIENTIFIC

### Health and Sanitization through UV Lighting

*How do you go about determining the light levels and exposures needed to sufficiently sanitize a surface?*

With the SARS-CoV-2 pandemic, a strong demand for UV disinfecting lamps has developed. UV light, especially the UVC region from 255nm to 265nm, has been shown to render viruses noninfectious by **destroying their genetic material, DNA and RNA**. In general, a **dosage of 20 to 100 mJ/cm<sup>2</sup> of UVC light** is usually sufficient to destroy most bacteria and viruses, including coronaviruses like SARS-CoV-2. How do you go about determining the light levels and exposures needed to sufficiently sanitize a surface? Instrumentation from **Gamma Scientific** will provide you with the information on the irradiance and radiant exposure values you need.



#### What is Irradiance and Radiant Exposure?

Irradiance is the amount of flux per unit area of radiant power falling onto a surface. In simple terms, it is the amount of light hitting an object, expressed in units of Watts per unit area. The SI (International System of Units) unit of irradiance is Watts per square meter (W/m<sup>2</sup>), but for different applications it can be expressed in microWatts per square centimeter (µW/cm<sup>2</sup>) or milliwatts per square centimeter (mW/cm<sup>2</sup>).

Radiant Exposure is similar to irradiance in that it is the amount of flux per unit area of radiant power falling onto a surface but **calculated over time**. It is expressed in units of Joules per unit area. The SI unit is Joules per square meter (J/m<sup>2</sup>), which can similarly be reported as µJ/cm<sup>2</sup> or mJ/cm<sup>2</sup>.

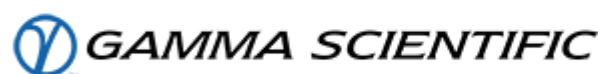
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[www.gamma-si.com](http://www.gamma-si.com)

## Health and Sanitization through UV Lighting

With increased awareness and necessity for rapid disinfection methods due to the current coronavirus pandemic, ultraviolet disinfection has become a viable method to achieve it. Determining the amount of UV energy the light source emits onto the surface to be disinfected is required to understand how long and at what power levels the source needs to be. This is where UV optical power and energy meters play an important role in achieving proper disinfection while remaining safe for people.

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