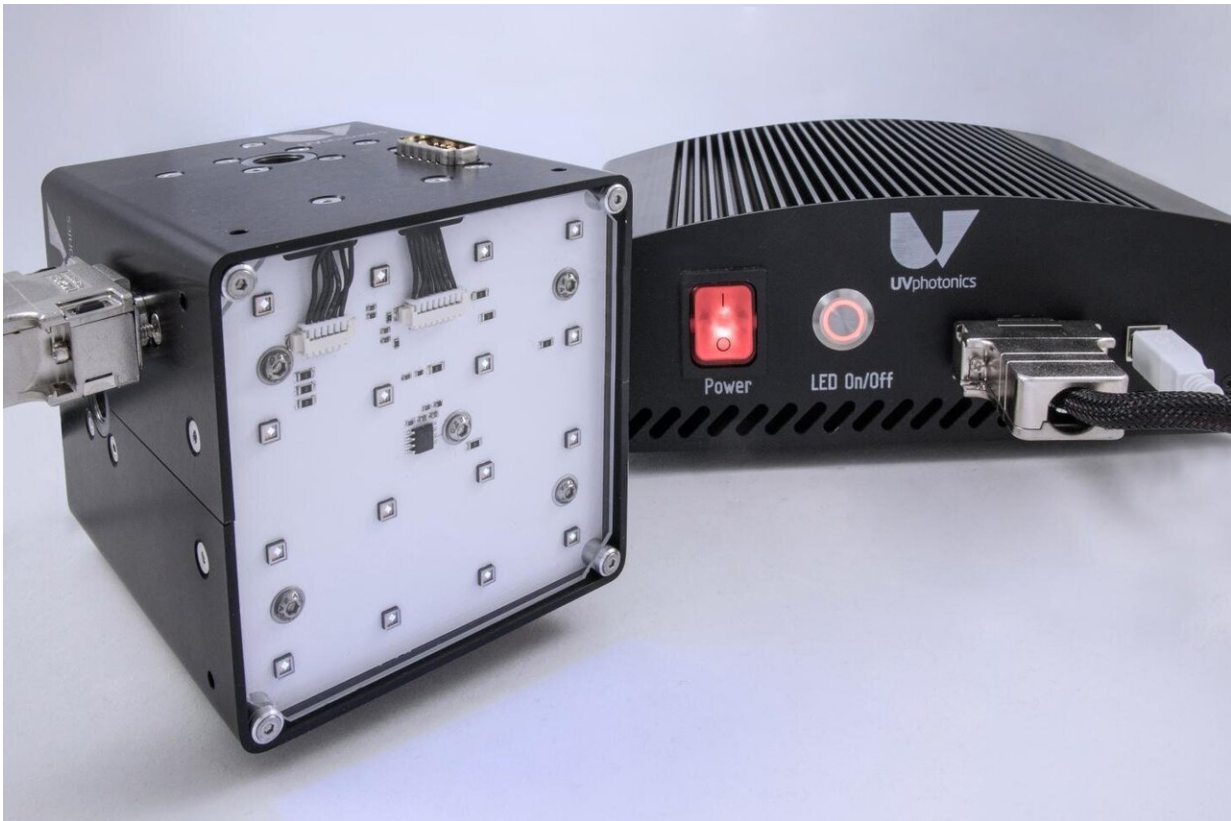


# Versatile LED irradiation system: From disinfection to medical treatments

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Modular LED irradiation system equipped with UVC LEDs for disinfection.  
Credit: FBH/P. Immerz

For disinfection purposes, a compact system can be equipped with UV LEDs to eliminate germs on critical surfaces such as mobile phones. It

can also be assembled with LEDs providing the optimum emission spectrum for polymer curing and medical treatments—even multiple wavelengths are possible.

Berlin-based Ferdinand-Braun-Institut (FBH) and its spin-off UVphotonics NT GmbH have designed and developed a versatile turnkey irradiation system for surface treatment. Since the compact, modular system can be flexibly equipped with both in-house developed UV LEDs as well as with commercially available UV, visible and infrared LEDs it can be flexibly adjusted to the targeted emission spectrum.

For disinfection purposes it can be equipped with in-house developed LEDs emitting at 265 nm to eliminate germs on surfaces—this includes personal items like mobile phones and reusable masks as well as menu cards in restaurants. The system can also be used in the professional sector, for example in healthcare clinics and laboratories. It is equipped with an illumination module comprising 16 UV LEDs distributed over an area of 80 mm x 80 mm. The LEDs provide an intensity >5 mW/square centimeter. Therefore, the irradiation system achieves the minimum UV dose of 500 mJ/square centimeter recommended by the Centers for Disease Control and Prevention (US Department of Health) in less than two minutes. An integrated timer ensures the correct dosage.

## **Flexible und expandable plug & play solution**

The module can control up to four different wavelengths separately, which can be an enormous advantage in applications such as [medical treatments](#) and curing. To cover larger areas, the modular segments can be mechanically interconnected wire-free and therefore the system is flexibly expandable into 1-dimensional as well as 2-dimensional arrays. Also, individually shaped arrays are possible, which can be integrated into a large number of disinfection systems. The overall system is a plug

and play solution. It can be computer-controlled or operated as a stand-alone solution with constant power. Even programming a timing pattern is possible.

Provided by Forschungsverbund Berlin e.V. (FVB)

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