

Press Release

Versatile LED irradiation system – from disinfection to medical treatments

For disinfection purposes, the 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.

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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 $>5 \text{ mW/cm}^2$. Therefore, the irradiation system achieves the minimum UV dose of 500 mJ/cm^2 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.



The **press picture** is available here [for download](#). All images are copyrighted.

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About the FBH

The Ferdinand-Braun-Institut, Leibniz-Institut fuer Hoechstfrequenztechnik (FBH) researches electronic and optical components, modules and systems based on compound semiconductors. These devices are key enablers that address the needs of today's society in fields like communications, energy, health, and mobility. Specifically, FBH develops light sources from the visible to the ultra-violet spectral range: high-power diode lasers with excellent beam quality, UV light sources and hybrid laser systems. Applications range from medical technology, high-precision metrology, and sensors to optical communications in space and integrated quantum technology. In the field of microwaves, FBH develops high-efficiency multi-functional power amplifiers, and millimeter wave frontends targeting energy-efficient mobile communications as well as car safety systems. The FBH has a strong international reputation and ensures rapid transfer of technology by working closely with partners in industry and research. The institute has a staff of 315 employees and a budget of 40.4 million euros. It is part of the Forschungsverbund Berlin e.V., a member of the Leibniz Association and part of »Research Fab Microelectronics Germany«.

www.fbh-berlin.de/en

About UVphotonics

Since 2015, UVphotonics NT GmbH offers customizable UV LEDs for the B2B market. The product portfolio covers single chips, fully packaged LEDs and lighting modules in the UVB and UVC wavelength ranges. The profound technological expertise of the UVphotonics team ensures that the LEDs are tailored to meet the specific requirements in terms of emission wavelengths, emission characteristics, power ranges or chip layouts. Additionally, UVphotonics offers consultation on the integration of UV LEDs in application systems. UVphotonics is a spin-off from the Ferdinand-Braun-Institut, Leibniz-Institut fuer Hoechstfrequenztechnik and the Technische Universitaet Berlin. Continued close collaborations with these leading research institutes ensure that UVphotonics stays at the forefront of UV LED technology.

www.uvphotonics.de