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Disinfection devices to fight coronavirus

- **The VDE Institute is examining potential applications in schools, nursing homes, hotels and gyms**
- **Disinfection devices effectively fight the coronavirus (SARS-Cov 2) in enclosed spaces**
- **The VDE Institute is globally unique in offering inspections of the devices' application and effectiveness**
- **The VDE Institute's testing also includes mutations of the virus**

(Frankfurt/Offenbach, Germany, 3/1/2021) With the coronavirus situation still tense, effective hygiene measures remain an important topic with no alternative in the fight against the pandemic. One indispensable element for school classrooms, nursing homes, hotels and gyms is disinfectant devices that quickly neutralize the SARS-Cov-2 virus. They use UV-C radiation to eliminate viruses. It is crucial that the devices emit the correct level of radiation when in use. Not every device is capable of this. As a leading testing institution, the VDE Institute inspects these devices for their actual disinfection effect and offers manufacturers a corresponding service. For UV-C devices, the disinfection effect is checked using normative light measurement and deterministic evaluation methods based on WHO models. With this approach, VDE is the only provider worldwide that can test the effectiveness of disinfection devices in combating the coronavirus.

Not every device is suitable – it all depends on the right dose of radiation

“A VDE test report or quality certificate provides manufacturers of disinfection devices with the necessary information on whether their device successfully neutralizes coronaviruses and how long the device must be used to effectively combat germs, viruses and fungi,” explains Dragana Zdravkovic-Stojanovic, a testing expert at the VDE Institute. She adds that this promotes trust in the disinfection devices. At the same time, she warns against using uncertified UV-C devices to eliminate coronaviruses, as the potential danger for users is too high. There is always a risk that the devices could emit ozone. When inhaled, this gas can have serious health consequences.

Difference between closed and open channel systems

With this in mind, VDE Institute inspections include ozone-level testing. Another aspect of the device check is that it considers both closed and open channel radiation systems, both of which are available on the market. It is important to note here that open systems, in which UV-C radiation is released directly, are subject to strict safety regulations. Living organisms must be blocked from direct exposure to radiation, which can also degrade plastics and other sensitive materials. In closed systems, however, no direct radiation is released – the air circulates through a lightproof system. Experts at the VDE Institute also investigate the extent to which radiation reflected off surfaces affects the length of disinfection and provide specifications for room temperature and humidity. “These two factors influence the required dosage and duration of radiation,” explains Zdravkovic-Stojanovic.

Testing in real-world conditions also considers coronavirus mutations

VDE is furthermore participating as a research partner in a project supported by the German Federal Ministry for Economic Cooperation and Development (BMZ) and LESS GmbH (based in Halle, Germany). In a feasibility study, the experts are testing the application of open UV-C systems in schools, gyms and hotels under everyday conditions. The goal of the study is to give users a concrete estimate of how many devices they need to use in which room size and for how long in order to kill off viruses. The testing includes the current COVID mutations. In addition to the feasibility study for UV-C manufacturers, the research team also plans to generate a cost-benefit calculation for users to show how much they can save compared with conventional disinfectants and heating costs.



Image caption: Joining forces against the coronavirus: Dragana Zdravkovic-Stojanovic, testing expert at the VDE Institute (second from left) and her colleagues check disinfection devices used to fight the SARS-Cov-2 virus (image source: VDE Institute).

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About the VDE Institute:

Over 100 years of the VDE mark – the VDE Institute, a subsidiary of the VDE Group, celebrated its 100th birthday in 2020. The VDE Institute is a worldwide partner for industrial clients, retailers, public authorities, electricians and consumers. The VDE mark serves as a synonym for the safety and quality of electrotechnical devices, components and systems. Over 100,000 devices per year are subject to product, quality and safety tests by independent VDE Institute testing engineers before they receive the VDE mark. VDE experts monitor more than 7,000 manufacturing facilities around the globe. Cooperation agreements with over 50 countries ensure that checks performed by the VDE Institute are internationally recognized. The VDE mark can be found worldwide on 200,000 product types with one million model variations. The non-profit VDE Testing and Certification Institute comprises over 500 employees in Offenbach am Main, Germany. More information at www.vde.com/tic-en.

About VDE:

VDE, one of Europe's largest technology organizations, has stood for innovation and technological progress for over 125 years. This makes VDE the only organization worldwide combining science, standardization, inspections, certification, and application consulting under one roof. VDE has been synonymous with the highest safety standards and consumer protection for over 100 years. We are dedicated to fostering research and young talent as well as lifelong learning with on-the-job further training opportunities. 2,000 employees at over 60 locations worldwide, more than 100,000 volunteer experts, and approximately 1,500 companies work within VDE to create a future worth living in: networked, digital, and electric. We are building the e-dialistic future.

VDE (Verband der Elektrotechnik Elektronik und Informationstechnik e.V.) is headquartered in Frankfurt am Main, Germany. More information at www.vde.com/en.

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