

HERO21

The First UV-C Disinfection Robot „Engineered in Germany“ with a Nationwide Service Infrastructure



The initial situation: Hygiene challenges of our time

The importance of disinfection in hospitals has increased considerably - and not just because of the current coronavirus pandemic. Conventional disinfection methods, such as manual disinfection, only solve the problem rudimentarily. Often, they even produce more resistant germs. UV-C robots can help out: reliable, with state-of-the-art technology and high efficiency.

Now, the renowned technology company ICA Traffic GmbH from Dortmund, Germany, has cooperated with the Chair in General Electrical Engineering and Plasma Technology (AEPT) of the Ruhr University Bochum. Together, they have created an implementation solution on an industrial scale and even achieved an optimum price-performance ratio.

HERO21: leading the way in disinfection technology

In many respects, the HERO21 leaves its competitors far behind. It moves completely autonomously through the rooms that need to be disinfected. If the robot is switched on, it can be moved to the contaminated areas via an app on a mobile device so that the person navigating the robot does not need to enter the room themselves. The HERO21 scans all room data and saves it. Its special sensor technology detects whether there still is a person in the room. In this case, the robot would not activate itself but send a hazard alarm to the mobile device. Even during the disinfection process, its sensors detect, for example, when a person opens the door - and switch off the UV-C light.

But the HERO21 does not only protect hospital staff and patients: if it is used for the initial disinfection in contaminated rooms, the cleaning staff that normally works at the frontline are also exposed to a much lower risk of infection.

Standardized and scientifically sound

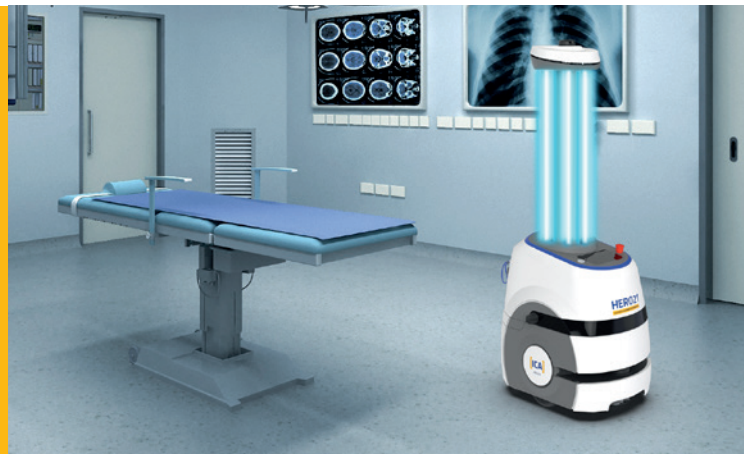
No standard tubes were used for the HERO21, but specially produced UV-C lamps, which were assessed in an efficiency test against six conventional lamps in the laboratory and have an extremely long service life. The HERO21 achieves a level of disinfection of 99.99 % with a 360° coverage.

In addition, the HERO21 has a very long operating time: After a short preheating phase, it disinfects for up to 3.5 hours straight. This capacity corresponds to about 14 rooms (25 m² in 5-10 minutes). The HERO21 is operational again after only four hours of charging.

All analyses are carried out in a certified BLS-1 laboratory.

UV-C radiation: an ultraviolet digestion

UV-C radiation is electromagnetic radiation in the wavelength range of 280 to 100 nanometers. It penetrates the genetic material of the bacteria, fungi or even viruses and damages their DNA or RNA.



ICA: a company on an innovation path

ICA was founded in 1986 by Dipl.-Ing. Heinz Sander. It is an owner-managed, independent, medium-sized company that primarily manufactures intelligent ticketing systems or machines. As a specialist for complex software, ICA has also devoted itself to the development of innovative and future-oriented technologies.

As a result, the Health Division was created in 2020. The founder had the idea to create an innovative disinfection robot, which resulted in the development of the HERO21 under the direction of Managing Director & COO Dipl.-Ing. Stefan Walko. It not only sets new standards in terms of functionality - ICA is also the only company to offer a comprehensive nationwide technology service and supports its customers 24/7.

HERO21: technical data

Size L*W*H	Approx. 700 mm x 500 mm x 1,650 mm
Environment	Indoor application
Safety	Two-stage safety system, shutdown on opening the door, person and object recognition by laser sensor technology
Speed	1 m/s
Disinfection time	5-10 minutes per 25 m ²
Disinfection cover	360°
Operating time	3.5 hours
Navigation	Free navigation; HERO21 scans the room independently and stores room data
Connectivity	Wireless network and LTE (optional)
Configuration	8 UV-C lamps, 254 nm
Control	Via App