

**UV222<sup>TM</sup>**

# **Report: Installation in Ambulance**

PROJECT

Falck ambulances

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Report:

Disinfection of patient cabin with UV222™ lamps from UV Medico.

Performed by:

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## Background

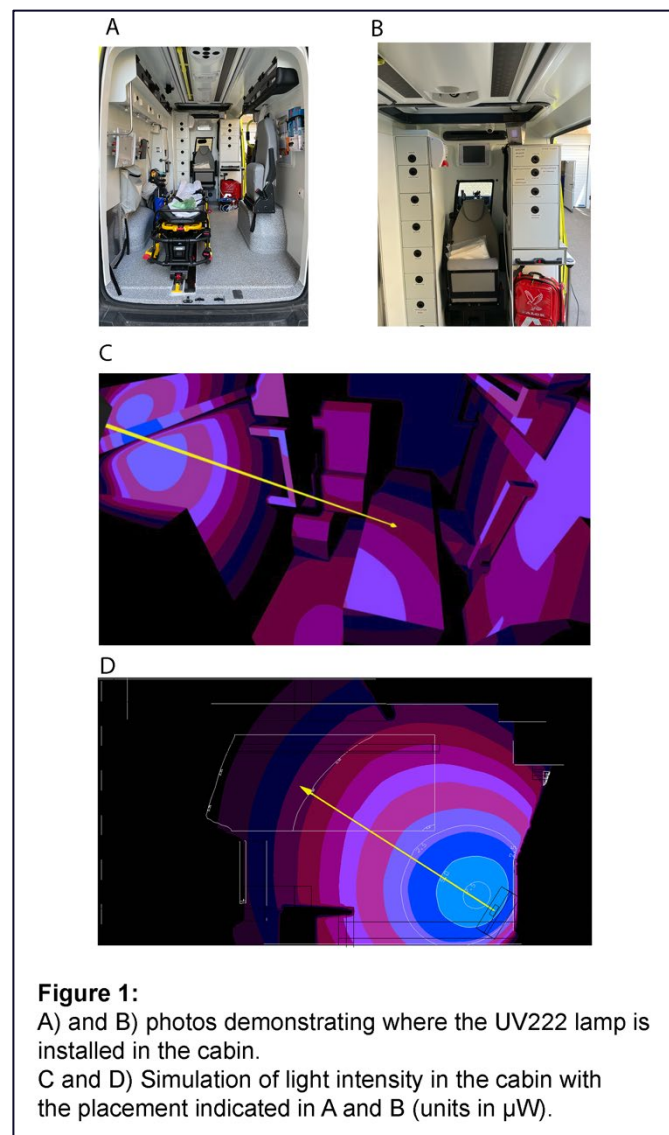
With this study, we wanted to determine and verify the anti-microbial effect of a UV222™ lamp from UV Medico mounted in the patient cabin of an ambulance from Falck Group. Previous scientific reports from international universities have documented that UV222 lamps inactivate various pathogenic microorganisms including several bacteria, bacterial spores, viruses, and fungi due to the emission of Far-UVC light at 222nm [1-4]. In addition, UV222 lamps have recently been shown to be effective in inactivating SARS-CoV2, the etiological background for the COVID-19 pandemic [5].

## Experimental setup

Testing the anti-microbial effect of ceiling mounted UV222 lamp in an ambulance.

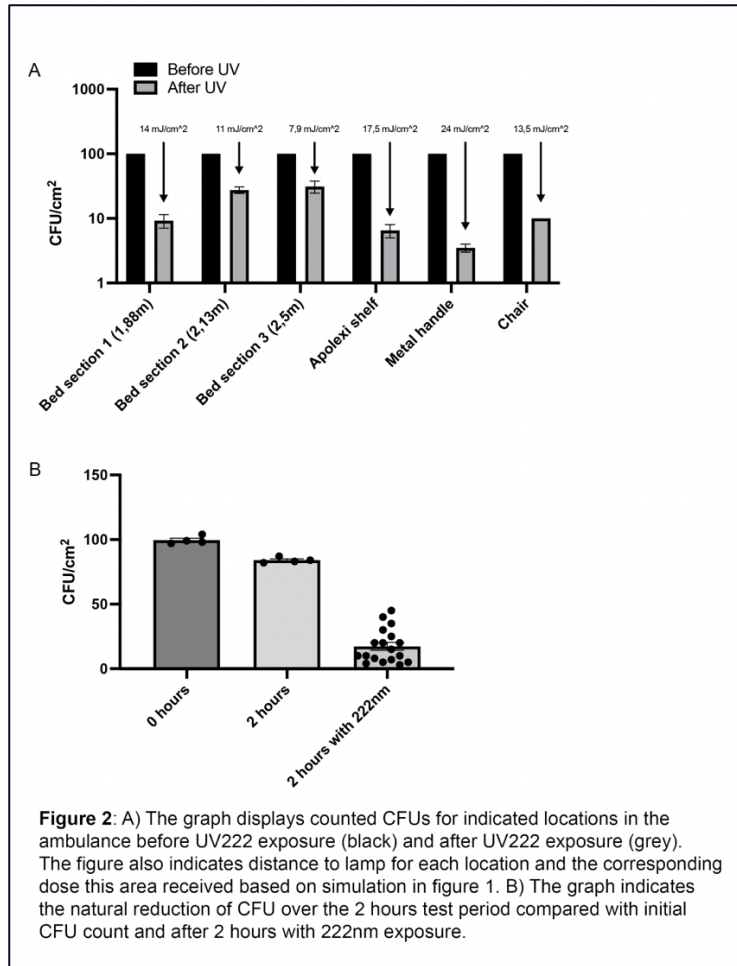
The UV222 lamp was mounted in the upper right corner of the ambulance cab (figure 1). Tests were performed using HygiCult TPC (Aidian) to determine the number of live bacteria (colony forming units, CFU) on different surfaces in the cabin. After sampling, HygiCult TPC test samples were stored in a heating cabinet (37 degrees Celsius) before the bacterial count was performed. Colonies were counted and presented as Colony Forming Units (CFU) per cm<sup>2</sup>.

The various surfaces were spiked with live bacteria of the species *Staphylococcus epidermidis*. This approach was chosen to simulate a significant contamination of the cabin with bacteria. These bacteria are part of the normal human flora and are often found naturally on surfaces in office environments. The bacteria are also known to cause opportunistic infections in hospitals. Samples were taken to determine bacteria counts before and after 222nm exposure. The UV222 lamps were left on for 2 hours before sampling. In addition, the natural reduction in bacteria counts without UV222 light over 2 hours was measured.



## Results

As indicated in Figure 2A, exposure to 222nm UVC from the mounted UV222 lamp resulted in a significant reduction in the number of bacteria as measured by germ count. It can be assumed with a high degree of certainty that the reduction in bacteria was caused by illumination from the UV222 lamp as the reduction in bacteria over the same time interval without exposure to 222nm UVC from the UV222 lamp was negligible (Figure 2B).



## Conclusion

Installation of a UV222 lamp in the patient cabin of an ambulance will significantly reduce bacterial load in the cabin. This includes bacteria on surfaces such as patient bed, handles chairs, and panels. Further, viruses and bacteria suspended in the air will be closer to the lamps and thus receive higher doses than those on the tested surfaces. Further, viruses need approximately 10x less of the 222nm for inactivation. It is therefore safe to assume that this setup will have a strong anti-viral effect as well.

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## Contact

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