



IONAIR INACTIVATES VIRUS OVER 99%

In view of the current Coronavirus pandemic, we find ourselves in an unprecedented and exceptional situation. Coronavirus affects us all in the most diverse ways. As specialists in hygienic indoor air, we have suddenly had to be even more intense than usual in our focus. We felt that we could create something positive and favorable. And in this way, we pursued the clear question for us: whether, and if so, how the virus load in indoor areas can be reduced. We needed precise information as right from the beginning of the first wave of the pandemic at the start of this year, we were inundated with inquiries about how the ionair Air Quality System (AQS) responds to SARS-CoV-2. At that time we had to be guarded in our responses and our standpoint was that there were still no well-founded scientific explanations.

Inhibiting action

This is why we appointed the Fraunhofer Institute for Building Physics IBP to investigate this issue. The goal of the analysis was to test the reduction and inactivation of airborne surrogate viruses (non-pathogenic covered Phi6 bacteriophages with structure, particle size and environmental stability equivalent to that of SARS-CoV-2) by the AQS. Pleasingly, the series of tests at the Fraunhofer IBP confirmed that the AQS of ionair has a significantly inhibiting action on this virus. The tests were conducted in a mechanically controlled and ventilated laboratory environment at the IATC (Indoor Air Test Center). The analyses pertained only to aerosols in the air of the test environment, in other words, in the breathing area of the human being. It has now been established for a few months that the risk of transmission via the air, apart from transmission via droplets and transmission via contaminated surfaces, is real.

Outstanding results

The results surpassed all our expectations. The test arrangement in the Fraunhofer IBP demonstrated a reduction in surrogate viruses of more than, believe it or not, 99 per cent by ionization in the supply air. The analyses were conducted under as real conditions as possible in a 127 m³ large stainless steel room in the IATC, in which the ionair AQS was installed in the supply air duct and the extract air duct. The surrogate viruses

were dosed continuously and their concentration before, during, and after switching on the AQS were analyzed microbiologically in conformance with DIN ISO 16000-16. In the process, the viruses were collected from the indoor air, processed in the laboratory, and the number of viruses was determined with the help of the plaque assay method. The AQS was in a position to reduce the concentration of viruses in the range of 99.49 per cent to 99.59 per cent, while complying with all statutory and health-related limit values for indoor air and with a continuous virus load.

Something to be cheerful about at the end of the year

Thanks to the favorable Fraunhofer IBP results on the reduction of the viruses in indoor air with the ionair AQS, apart from several others, we now have another technical measure available that permits us to find our way back faster and safer to a normal social life. Frankly speaking, it came as a surprise to us to see how efficiently our technology can reduce airborne surrogate viruses (non-pathogenic covered Phi6 bacteriophages with structure, particle size and environmental stability equivalent to that of SARS-CoV-2). Besides this, the effectiveness, in other words the benefit of the ionair AQS has been scientifically proven in a number of areas by other institutes in the past. This includes the reduction and inhibition of certain microorganisms such as bacteria and molds, as well as other harmful substances that are detrimental to the health of the human body. The fact that the AQS now frees the indoor air significantly from pathogenic viruses such as airborne surrogate viruses (non-pathogenic covered Phi6 bacteriophages with structure, particle size and environmental stability equivalent to that of SARS-CoV-2) and contributes to the indoor air quality makes me all the happier. Combined with all other already known rules of conduct and hygiene, we are learning to live with this virus and other viruses.

Lucerne, 7.12.2020

Fraunhofer IBP Nr. UHS-070/2020