

THOR UVC® removes accumulated viral load, providing ultimate air & surface disinfection.

THOR UVC cleans both the air and surfaces in any room of all pathogens (a bacterium, virus, or other microorganism that can cause disease) eradicating 99.9999% of healthcare associated infections (HAIs) in minutes.

The air in a room contains an ever increasing amount of pathogens as more people enter a room. The load builds up as an invisible cloud as more people enter a space. The higher the viral load in a space the more your immune system has to fight to resist infection and the greater the risk of a more severe illness.

These infectious agents also land and stay on surfaces and objects in a room. They remain a transfer risk back to humans for up to a week. Researchers have discovered that smooth (non-porous) surfaces like door knobs transmit bacteria and viruses better than porous materials (like cardboard paper). This is because porous, especially

fibrous, materials absorb and trap the contagion, making it harder to contract through simple touch. Whether in the air, a door knob or on furniture no pathogens can survive exposure to the power of THOR UVC.

THOR UVC is equipped with 24 x 95W light emitters, delivering an impressive 648W of total Ultraviolet light (UVC) output. High levels of power is vital to UVC's efficiency and efficacy. In fact, THOR UVC delivers the highest amounts of germ and pathogen killing constant wave UVC on the market today.

THOR UVC's calibrated cycle times deliver disinfection rates that routinely exceed 5 to 6 log reduction*. This high kill rate is why it is used to clean ambulances and operating theatres across Europe.

THOR UVC's high output emission is automatically managed by its inbuilt LiDAR (Light Detection and Ranging) system to achieve

optimal levels of UVC light exposure for germicidal action. This technology is used extensively in a range of critical applications, including by NASA for space exploration.

LiDAR works by measuring how long a laser takes to reach an object and reflect back to the LiDAR sensor. Using LiDAR, THOR UVC 3-D maps a room and provides a disinfection plan which details the exact time for complete disinfection. This eliminates potential human error and ensures delivery of consistent UVC dosage to the entire space, whether large or small. Upon completion of the cycle, THOR UVC sends a disinfection report to the cloud for instant retrieval at any time in the future, leaving no guesswork on what has been done and when.

The use of LiDAR in a UVC disinfection system is unprecedented, and patent protected.

UVC cannot penetrate round furniture or items in a room. If something is in a shadow from UVC light it cannot be cleaned.

To overcome this issue THOR UVC is freestanding - not wall or ceiling mounted – and has unique patented telescoping functionality (from 6cm off the floor to 2.25m high) ensuring complete floor to ceiling disinfection.

It is also easily manoeuvrable so, after a scan is completed, the unit indicates where to position it to deliver the selected germicidal levels of UVC energy. This gives ultimate confidence that consistent UVC energy is delivered regardless of room size and shape.

With shadow reduction, smart calculation of dosage, ease of positioning and high power delivery THOR UVC minimises labour time and maximises effectiveness. It is the most cost-effective and only complete solution to remove accumulated viral load from a room.



**Power,
accuracy,
flexibility and
ease of use.**

**THOR UVC resets a
space to 'germ-free'.**

* Log kill rate is a scale used to show the relative number of live pathogens eliminated by disinfection and is used in the testing and certification of cleaning and sanitising products. See Kowalski's study on Predicting the Ultraviolet Susceptibility of Viruses and Bacteria for more details on UVC efficacy.

EIR® helps ensure that in indoor spaces you can breathe safe and clean air.

Clean, healthy indoor air has never been more important. Small particles (aerosols) are projected into the air by talking or laughing, as well as coughing and sneezing, and can hang in the air for extended periods of time. These particles then circulate around a room moved by both air current and human movements. Breathing in this contaminated air increases the chance of infection.

Combined air filter and UVC disinfection units are particularly effective in removing airborne viruses, and preventing their further spread to others in a room.

The EIR 1000, 1350 and 2000 units subject airborne viruses to an intensive UVC dosage in conjunction with a High-Efficiency Particle Arresting Filter (HEPA). Due to the design of the devices, UVC rays are fully contained within the unit and therefore pose no threat to humans and can be safely operated in areas while people are present.

When viruses are exposed to UVC light, their DNA is damaged and inactivated which means that they can no longer replicate. Eradication of airborne viruses is only effective at the right wavelength and dosage (a function of power and duration of exposure).

- Tests have shown that the most effective wavelength of UVC light is 253.7 nm and EIR devices operate at exactly this wavelength.

- The dosage of UVC required to inactivate the SARS Corona virus by 99.95% is 2.730 $\mu\text{W}\cdot\text{sec}/\text{cm}^2$. EIR devices are designed to provide this level as a minimum.

- The exposure time of the virus to UVC is critical and EIR has been designed to provide the appropriate flowrate capacities to enable this. Air flow capacities of the 3 models vary between 100m³/h – 2.000m³/h. They are suitable for indoor areas from 20m² to 150m².

The air is then passed through the HEPA filter, resulting in clean air being forced back into the room itself.

The units are designed to circulate the indoor air at least 3 times an hour depending upon the building ceiling height and floor area.

The units are on a base with wheels, meaning that they are entirely portable, standalone and plug and go products.

There is no need for assembly or installation and all models have user friendly touch screen control panels, which also shows the device operating status and filter pollution information. EIR's UVC light emitters are long-lasting (9,000 hours) and ozone-free.



**Safe, quiet
and effective.
EIR refreshes the
air and removes
transmissible pathogens
including COVID-19.**

ZEUS® ensures objects are decontaminated and free from transmissible pathogens including COVID-19.

Zeus's unique, patent-protected six plane UVC decontamination process penetrates hard-to-reach areas of objects that are often missed when disinfecting by hand. Any object can be contaminated with infectious agents and transfer disease to a new host. There are called fomites and are common routes to pass pathogens between patients in medical settings and in daily life. Research in 2007, for example, showed that influenza virus was still active on stainless steel 24 hours after contamination. On hands it survives for only a few minutes. Constant contact with a fomite almost certainly means catching an infection. Transfer efficiency depends not only on the type of surface, but also on pathogen type. For example, avian influenza survives on both porous and non-porous materials for 144 hours.

ZEUS is a full enclosure device with 'light-tight' design, so there is no risk of operator exposure to UVC. As an added safety feature, a digitally controlled interlock is integrated into the door mechanism.

Simply open the door, place your items inside, close the door and press 'GO'. The system will then perform a 30-second disinfection cycle. Given its speed, ZEUS is therefore capable of a high capacity of disinfections within one single working day, and the chamber can accommodate either multiple objects or a single larger item during each cycle. It's internal dimensions are 477mm x 442mm x 348mm.

Using UVC light at a wavelength of 253.7nm, across all six planes and at an appropriate level of intensity/distance, ensures that any product placed into the ZEUS chamber will be completely disinfected. Third party laboratory tests have proved decontamination up to log 9 on the hardest of pathogens. ZEUS does not require any chemicals of any kind, and there are no ongoing consumable costs.

Due to ZEUS using only UVC light to disinfect, there is no requirement for specialist ventilation or extraction, unlike other chemical based processes.

ZEUS only requires a standard mains power connection and works on 110-240v, so can be deployed globally in any location.

An RFID sensor ensures that the device can only be operated by an approved operator with ID card control.

As with all Finsen products, ZEUS offers complete tracking and traceability through automatic activity reports, accessed via our Cloud platform.

ZEUS
ensures items
or devices you
touch regularly,
like your phone or
laptop, are 'germ-free'.

