

N-LIGHTENTM

FAR-UV = SAFE UV



Rapid and Safe Sanitization of Visitors in Public Spaces

- N-Lighten™ is a **human-safe sanitization** device that uses only Far-UV(C) 222 nm light.
- Far-UV technology is included in FORTUNE Magazine's annual "**Change the World**" list.
- Technology's sanitization efficacy and safety for humans is proven by Columbia University (USA) and Kobe University (Japan).
- N-Lighten's ready-to-mount lamps can be attached atop door frames and on ceilings to **sanitize visitors and occupants in just 10 seconds**.
- N-Lighten's easy-install sanitization tunnels can be created to **sanitize multiple visitors simultaneously** without needing them to halt. **Existing disinfection tunnels can also be retrofit** with N-Lighten™ tubes.

Background: In wake of COVID-19, virtually all establishments have sanitizer dispensers and IR thermometers at entry points. While IR thermometers may be a useful preliminary flagging tool, sanitizer dispensers are severely limited in their utility as they only sanitize the visitor's palms and back-of-hand (palmar and dorsal sides). This makes the establishment being visited vulnerable to viral contamination via the visitor's clothes, other exposed skin, and objects (jewellery, watch, glasses, etc.) thereby posing a risk to all the other occupants and visitors at the establishment.

Conventional UVC is used at some places to sanitize unoccupied spaces and objects, however, it's application for visitor safety is limited since 254 nm spectrum (used in conventional UVC) is harmful to humans and can thus be used at unoccupied spaces only.

Consequently, we are proud to introduce N-Lighten™, our range of 222 nm Far UV-C excimer lamps for microbial reduction applications, specifically developed for safe use in occupied spaces without posing a health risk to humans.

Since it's safe for use in spaces like hospitals, buses, planes, trains, train stations, schools, restaurants, offices, theaters, gyms, and anywhere that people gather indoors, **N-Lighten™ could be used in combination with other measures, like wearing face masks to limit the transmission of SARS-CoV-2 and other viruses.**

USP: N-Lighten™ enables customers to obtain 100% light output in just 3 seconds, whereas conventional germicidal lamps start at only 50% output and take several minutes to achieve 100% output.

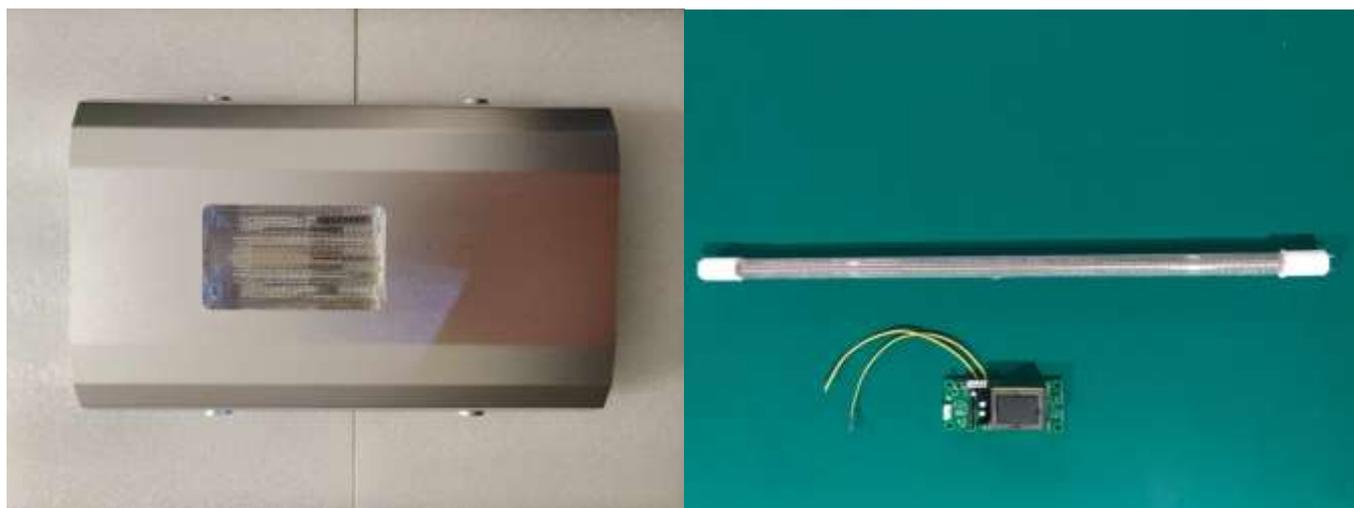
Form factors: Individual N-Lighten™ lamps can be mounted onto door-frames, under which visitors can halt 10s to have their clothes and any other exposed objects scientifically sanitized. Ceiling-mounted lamps can sanitize spaces too.

Alternatively, a series of N-Lighten™ lamps can be used to create a "sanitization tunnel", to pass which, visitors will need 10s at normal walking speed. Rope barriers can be placed within the tunnel to further slow down walking visitors to ensure complete sanitization of their clothes, exposed skin, and objects. In all form factors, the N-Lighten™ lamps are placed at 50-100 cm from the visitors for effective sanitization.

Proof of performance: Studies at Columbia University's Irving Medical Center conclude that far-ultraviolet C (UVC) light, at a wavelength is safe for humans i.e. 222 nm, kills more than 99.9% of coronaviruses that are found present in airborne droplets. The coronaviruses are structurally similar to the SARS-CoV-2 virus that causes the novel COVID-19. 222 nm light is safe for us because it cannot even penetrate through the dead-cell layer on the surface of our skin or the tear layer on the surface of our eyes - but because bacteria and viruses are physically very small, 222 nm light kills them.



N-Lighten™ Range of 222nm Far-UV(C) Lamps:



Far-UV is Safer than Conventional UV and Doesn't Penetrate Eyes or Skin:

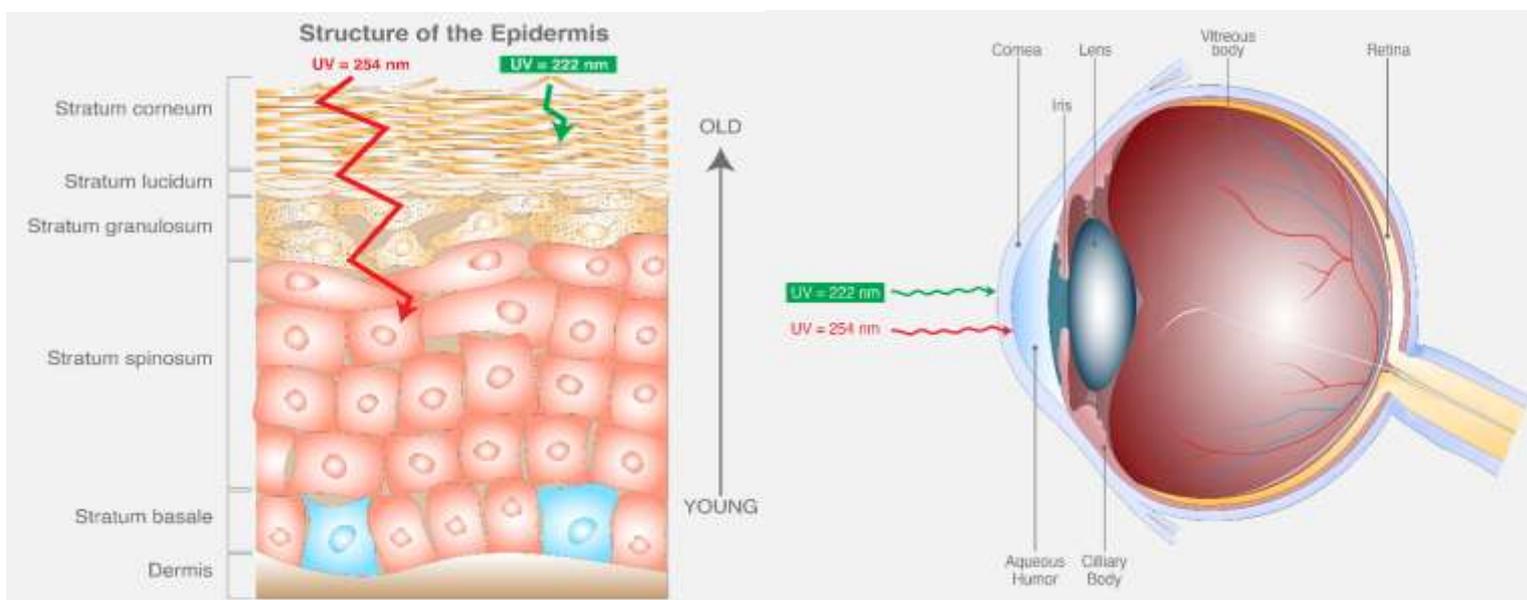


Illustration of Proposed Form Factors other than Ceiling Mounting of Units:



99.99% sanitization after walking through tunnel

99.99% sanitization in 10s

Compliances:



N-Lighten™ Far-UV Uses 222nm Excimer Lamps:

An excimer lamp is a special chamber filled with noble gas that does not use inner electrodes and is completely Mercury-free. When high voltage is applied across the outside of the glass, the gas inside excites and emits UV light. This construction means that these lamps can be turned on or off instantly without warm-up time or decreased lifetime similar to other lamps.

The emitted wavelength of 222nm has similar DNA absorption and is equally effective at disinfection as 254nm (Conventional UVC), but it is largely absorbed by proteins and human tissue. Thus, this wavelength of UV light can be used to inactivate viruses and bacteria without the negative side effects on skin and eyes. These wavelengths are also safe for eyes with the light being completely absorbed by the cornea, leaving the rest of the eye undamaged. This is a breakthrough for germicidal applications because it provides us the ability to reduce pathogens while maintaining a safe environment.

Features and Benefits:

- Mercury Free – Environmental Friendly
- Large Production Capacity
- Effective Germicidal Wavelength
- Effective Reduction of Viruses, Bacteria, and Spores
- Wide Operating Temperature
- Instantaneous (3s) On/Off at Full Output Power
- No Lifetime Reduction by Frequent On/Off Cycles
- Minimal Ozone Emission
- Safe for humans

Applications:

- Visitors
- Surfaces
- Ambient Air

For more information, talk to us!

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