UVengers

Power of the sun

Our lives have been changed by Covid-19. How should we adapt?

UV1 Disinfection Device, equipped with UV-C LEDs from Asahi Kasei, has been proven to inactivate 99.8% of SARS-CoV-2 in 3 seconds following a test carried out in a Biosafety Level 3 lab by Chang Gung University's Department of Medical Biotechnology and Laboratory Science.

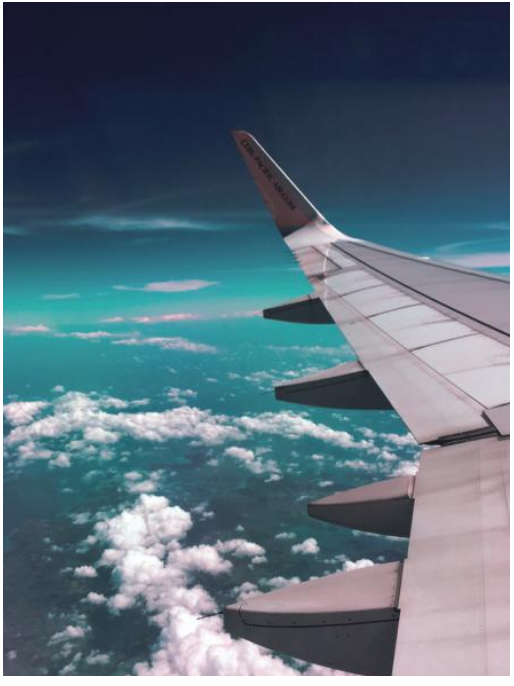
We designed UV1 to provide the public with additional means of disease prevention and help create a safer, more hygienic personal environment.

UVengers | ATrack Connecting the Future

UVengers is a new brand established by ATrack Technology Inc. (TPEX 6465) in 2020 that aims to provide people with protection against surrounding pathogens through a series of highly effective and reliable disease prevention products.

Anyone can potentially be exposed to the threat of SARS-CoV-2, the virus that causes Covid-19, without knowing it.

UV1 is the first product from UVengers, and it is the only handheld UV-C disinfection device designed for consumers that is proven to kill 99.8% of SARS-CoV-2 in 3 seconds and combines rapid disinfection function with lightweight portable form.

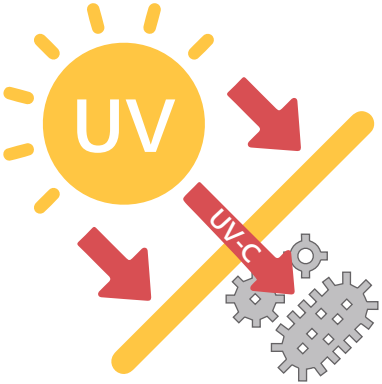


Origin Story

As a multi-national company with offices in Taipei, Tokyo, California, and customers in 100+ countries, ATrack team members frequently travel for business meetings and their immune systems are often exposed to unfamiliar environments.

Every journey has its uncertainties, and the threat of infections that cannot be fought off by immune systems are always present. Being exposed to pathogens on items and surfaces increases the risks of illnesses, and can lead to deterioration of both physical and mental conditions. While we cannot always control our surroundings and the cleanliness of things we come into contact with, we can try to reduce the amount of pathogens around us.

This encouraged us to develop a product that can disinfect on-the-go, minimize the amount of pathogens on items and surfaces rapidly, and is easy to use for the average person. To help people stay safe from diseases, whether at home or on the road, ATrack established the brand UVengers that focuses on disease prevention products using ultraviolet light as the core technology. As Covid-19 continues to wreak havoc around the world, ATrack also hopes to contribute to prevention efforts with UVengers products.



Power of the Sun \
Ultraviolet Germicidal Irradiation Sterilization

The light emitted from the sun includes a particular wavelength range called UV-C that is able to penetrate the protective wall and nucleic acids of microorganisms and interrupt their DNA/RNA structure, leaving bacteria, fungi, viruses, and other pathogens unable to perform vital cellular functions and reproduce. However, naturally occurring UV-C light is filtered out by the earth's atmosphere and does not reach the surface where humans reside.

Developments in lighting technology that creates UV-C wavelengths artificially have made sterilization by ultraviolet irradiation possible, and its application in the medical field has been standard practice since the 1950s. Since then, applications have evolved into the treatment of food production facilities, air, and water. By leveraging modern developments in LED technology that offers smaller sizes and less power consumption, UVengers UV1 is able to harness power of the sun and germicidal properties of UV-C light.

Product Design

Protect against pathogens including SARS-COV-2 by using UV-C disinfection technology, and maintain your top physical and mental conditions.

Anytime

Rapidly disinfect with a simple push of a button

Anywhere

Slim and light designs for high portability wherever you go

No Residue

Disinfect without chemical substances and residue


UVengers

Product Introduction

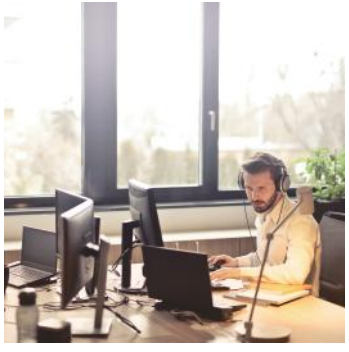
Power of the sun


DATE
SYS
DIA
PUL
SET
ON/OFF

Applicable Settings

Home

Ideal for sanitizing common, personal, and infant items within the household to reduce pathogens and risks of disease transmission between family members.



Office

Ideal for sanitizing personal space and items in the workplace to reduce pathogens and risks of disease transmission between colleagues.

Care Facilities

Ideal for sanitizing personal and public items in long-term-, senior-, and child-care facilities to reduce pathogens and protect those with weaker immune systems.

Public Spaces

Ideal for personal use in hotels, restaurants, libraries, and transportation seating areas to reduce pathogens on frequently touched surfaces and items.


UVengers

Office

Keyboard, Mouse, Switches,
Tablet, Landline phone

Personal items

Smartphone, Accessories,
Keys, Shoes, Under garment

Infant items

Pacifier, Tableware
Baby carriage, Toys

Leisure

Microphone, Remote control,
Luggage handle, Room card,
Door handle, Switches, Buttons

Dining out

Cutlery, Plates, Cups

UVengers

Product Highlights

Rapid & Effective Disinfection

Two 60mW UV-C LEDs emit strong UV light in 265nm wavelength most effective against common pathogens.

Battery Indicators & Alert

Battery level indicators and low power alert to show when a re-charge is needed.

Safety & Protection Designs

Automatic UV light power off when device is tilted over 90 degrees to prevent eye and skin exposure.

Designed & Made in Taiwan

MIT

Local engineering and manufacturing for high quality control and consistent disinfection performance.

Product Specification

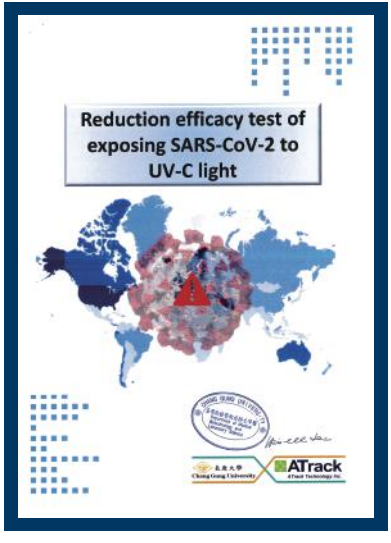
Model	UV1
UV-C LED Qty	2 (Asahi Kasei KL265-50-U-SM-WD)
UV-C LED wavelength	265 nm
UV-C LED maximum output	60mW
LED Qty	Red LED x 1、Blue LED x 2
Size	224 x 32 x 32.5 mm

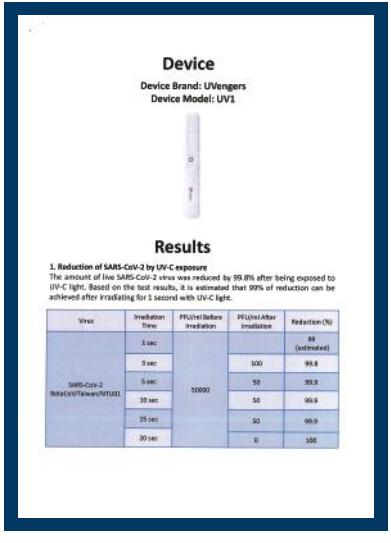
Weight	150 g
Power input	5V 2A
Battery type	Panasonic 18650 Li-ion
Battery capacity	3300mAh
Battery life	90 minutes of accumulated use per full charge
Working/Storage temperature	10°C ~ 45°C

*Specifications subject to change without prior notice.

3rd Party Test Report

Chang Gung University's Department of Medical Biotechnology and Laboratory Science has tested UV1's disinfection efficacy on SARS-CoV-2 virus in a Biosafety Level 3 lab and verified an inactivation rate of 99.8% after 3 seconds of UV light exposure. Based on the test results, the test report estimates an inactivation rate of 99% after 1 second of UV light exposure.





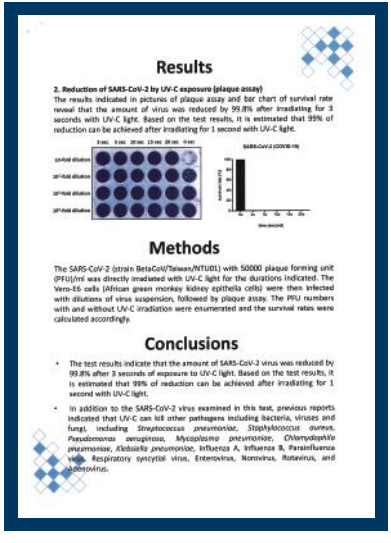
Device

Device Brand: UVengers
Device Model: UV1

Results

1. Reduction of SARS-CoV-2 by UV-C exposure
The amount of live SARS-CoV-2 virus was reduced by 99.8% after being exposed to UV-C light. Based on the test results, it is estimated that 99% of reduction can be achieved after irradiating for 1 second with UV-C light.

Virus	Irradiation Time	PFU/ml Before Irradiation	PFU/ml After Irradiation	Reduction (%)
SARS-CoV-2 BetaCoV/Taiwan/NTU01	1 sec	50000		99 (estimated)
	3 sec		100	99.8
	5 sec		50	99.9
	10 sec		50	99.9
	15 sec		50	99.9
	20 sec		0	100



Results

2. Reduction of SARS-CoV-2 by UV-C exposure (plaque assay)
The results indicated in pictures of plaque assay and bar chart of survival rate reveal that the amount of virus was reduced by 99.8% after irradiating for 3 seconds with UV-C light. Based on the test results, it is estimated that 99% of reduction can be achieved after irradiating for 1 second with UV-C light.

Methods

The SARS-CoV-2 (strain BetaCoV/Taiwan/NTU01) with 50000 plaque forming unit (PFU)/ml was directly irradiated with UV-C light for the durations indicated. The Vero-E6 cells (African green monkey kidney epithelia cells) were then infected with dilutions of virus suspension, followed by plaque assay. The PFU numbers with and without UV-C irradiation were enumerated and the survival rates were calculated accordingly.

Conclusions

- The test results indicate that the amount of SARS-CoV-2 virus was reduced by 99.8% after 3 seconds of exposure to UV-C light. Based on the test results, it is estimated that 99% of reduction can be achieved after irradiating for 1 second with UV-C light.
- In addition to the SARS-CoV-2 virus examined in this test, previous reports indicated that UV-C can kill other pathogens including bacteria, viruses and fungi, including *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Mycoplasma pneumoniae*, *Chlamydophila pneumoniae*, *Klebsiella pneumoniae*, Influenza A, Influenza B, Parainfluenza virus, Respiratory syncytial virus, Enterovirus, Norovirus, Rotavirus, and Adenovirus.

Contact us

Facebook

Website

Instagram

Power of the sun

Power of the sun

Taiwan
UVengers
ATrack Technology Inc.
+ 886-2-2797-5852
https://www.the-uvengers.com
8F, No. 13, Lane. 120, Section 1,
Neihu Road, Neihu District,
Taipei City 11493, Taiwan