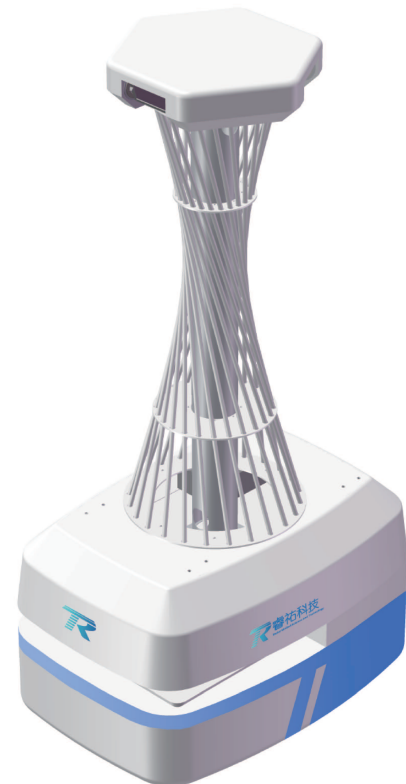




## Product Introduction

60 series intelligent disinfection and sterilization robot  
RU-XSR222-60



Non-toxic harmless,  
Man - machine coexistence  
Dynamic scanning,  
360° Covered



Size	660x480x1270(mm)
Weight	55KG
Scanning mode	support
Battery Endurance time	3-4 hours
Working environment	indoor
Application scenarios	low population, targeted work
UV wavelength/power	222nm/60W
Human environmental	Yes
Disinfection and sterilization way	Patrol / Designated spot
Multi-machines collaboration	support



200 series intelligent disinfection and sterilization robot  
RU-XSR222-200-S/L



Online calculation of disinfection  
coverage, Self help to fill in the blanks



Size	450x450x1400(mm)
Weight	60KG
Scanning mode	support
Battery Endurance time	3-4 hours
Working environment	indoor
Application scenarios	Relatively densely populated, Rapid and irregular working
UV wavelength/power	222nm/180(240)W
Human environmental	Yes
Disinfection and sterilization way	Patrol / Designated spot
Intellectual ergonomic	support





# Product Introduction

400 series intelligent disinfection and sterilization robot  
RU-XSR222-400-S/L



Suitable for high density,  
more powerful and efficient



Size	450×450×1400(mm)
Weight	60KG
Scanning mode	support
Battery Endurance time	3-4 hours
Working environment	indoor
Application scenarios	Relatively densely populated, Rapid and irregular working
UV wavelength/power	222nm/420(480)W
Human environmental	Yes
Disinfection and sterilization way	Patrol /Designated spot
Intellectual ergodic	support



The robot can calculate the coverage rate online intelligently and fill in the blank areas autonomously to achieve comprehensive coverage. Support patrol disinfection and sterilization work/designated work mode, multi-machine cooperation mode and other modes, intelligently and comprehensively solve the virus transmission in indoor crowded environment, to ensure the safety of the public environment.





## The superior performance of the robot



### Flexible task property settings

According to the characteristics of user application scenarios, the task attributes can be freely edited to flexibly respond to different requirements. The main editable attributes include: timed task and instant task, task cycle attribute, work path self-editing or intelligent generation, robot action attribute editing, etc.



### Autonomous patrol and sterilization

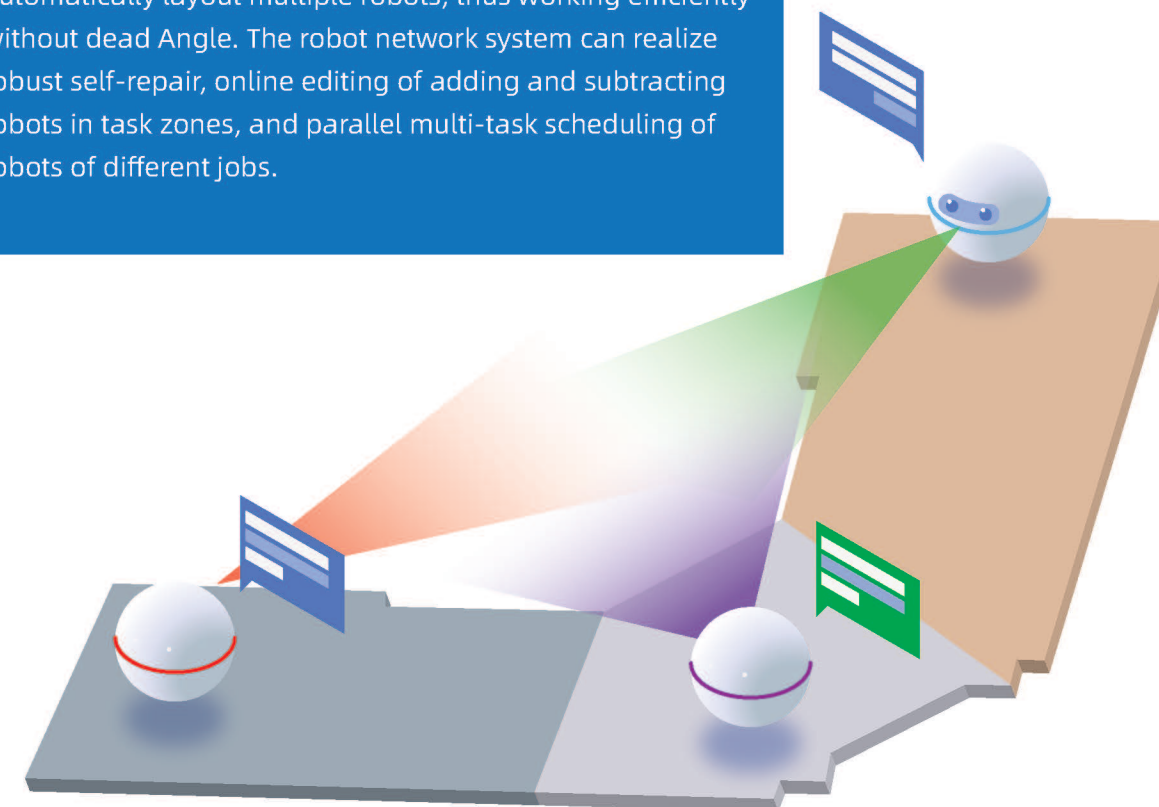
Prefabricated autonomous patrol for large-area and fragment tasks. By using hierarchical task editing, large area tasks can be assigned in fragments. The patrol time, execution batch and regional disengagement feature setting of the mission are formulated in a unified manner. The priority and regional characteristics of each area can be specified for intelligent task coverage to ensure no dead angle and global optimal efficiency.

### Fixed-point disinfection and sterilization

Flexible editing of temporary tasks. In the robot task execution, temporary tasks can be inserted, the designated temporary task area can be edited by mouse operation, and task characteristics can be customized to ensure that the robot can complete special tasks.

### Multi-robot cooperative

The spatial optimal and optimal task scheduling algorithm, in a large range of environment, is able to intelligently and automatically layout multiple robots, thus working efficiently without dead Angle. The robot network system can realize robust self-repair, online editing of adding and subtracting robots in task zones, and parallel multi-task scheduling of robots of different jobs.



# Multi-scene application



Hospital  
Office building  
Hotel  
Training places

Office hall  
Mall  
Parking lot  
Indoor sports ground

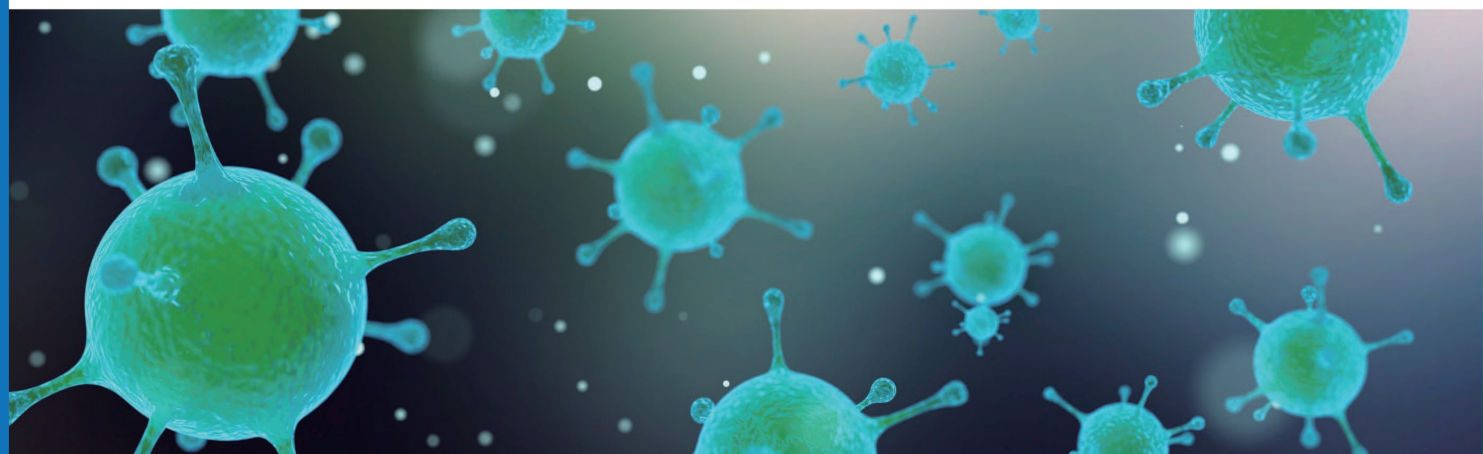


Use of The Chinese team in the Olympic Village

Applicable application scenarios:  
Schools, shopping malls, nursing homes, bars, restaurants, cinemas, private clinics, airports, railway stations, gyms, houses, apartments...



## Ultraviolet disinfection and sterilization

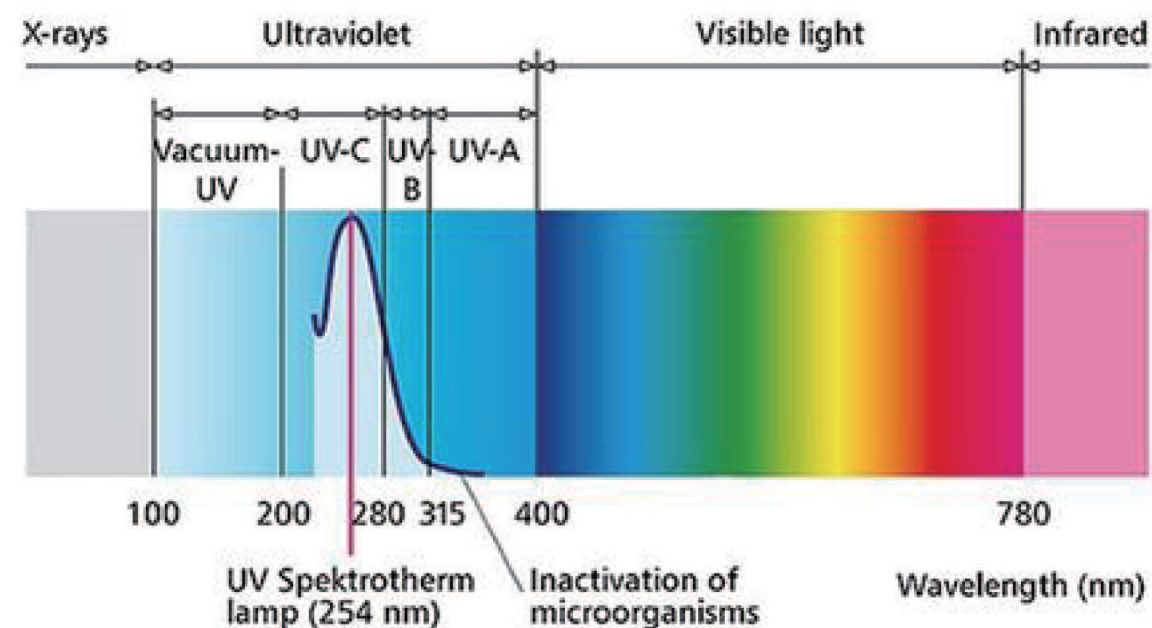


In recent years, the novel Coronavirus has been a continuing threat to human life. Since the development of modern medicine up to now, deadly bacteria, deadly virus caused by the epidemic has been staged numerous times. We need safe and effective solutions to protect humans from harm.

There are a variety of disinfection technologies available, but they can still be infected by airborne and surface contaminated pathogens, especially in large and complex public places, such as airports, shopping malls and transportation hubs, which are key areas for cross infection of deadly bacteria and viruses.

According to the research progress of microbial reduction and ultraviolet technology in recent years, disinfection products made by 278nm or 254nm ultraviolet technology have played an important role in the inactivation of bacteria and viruses. But ultraviolet radiation at this wavelength can cause skin cancer and cataracts in humans, so traditional UV disinfection techniques are not suitable for the current situation.

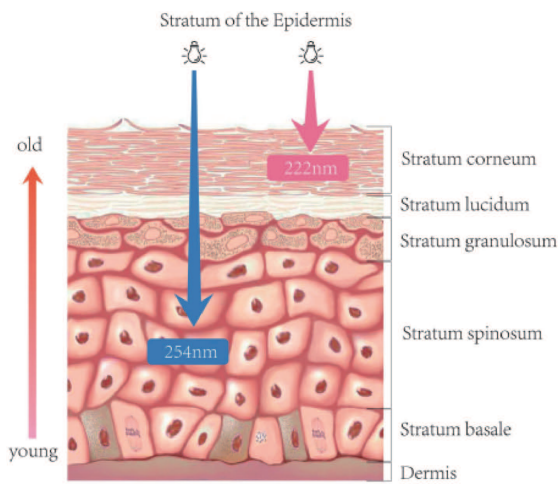
We choose 222nm Far UV-C Far ultraviolet disinfection technology, which can provide safe, efficient, continuous and convenient sterilization services for work and entertainment space.



Uv-A and UV-B are found in sunlight, and long-term exposure can damage the skin and even lead to skin cancer. UV-C's bactericidal ultraviolet rays in the 240-280nm range have been used for over a century, mainly for water and air systems and surfaces. UV-C radiation is absorbed by DNA and RNA and changes their structure, thereby inhibiting the survival and ability of infected pathogens to respond. But it is also harmful to human body and organisms, so it can only be used for unmanned environment disinfection, not for crowded public disinfection.

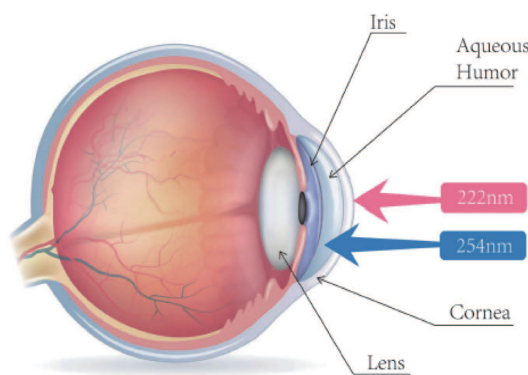
# Harmless 222nm Far UV-C

Numerous studies have shown that 222nm Far UV-C has an extremely special ability to effectively inactivate pathogens such as SARS-COV-2 coronavirus, harmful bacteria, influenza, and even the antibiotic-resistant superbug MRSA, and more importantly, it is harmless to humans and organisms, making it possible to disinfect in public places.



The outer layer of the epidermis is made up of dead skin cells called the cuticle, which acts as the main barrier between our bodies and the environment. 222nm Far UV-C short wavelength can not penetrate the cuticle, will not cause harm to the human body.

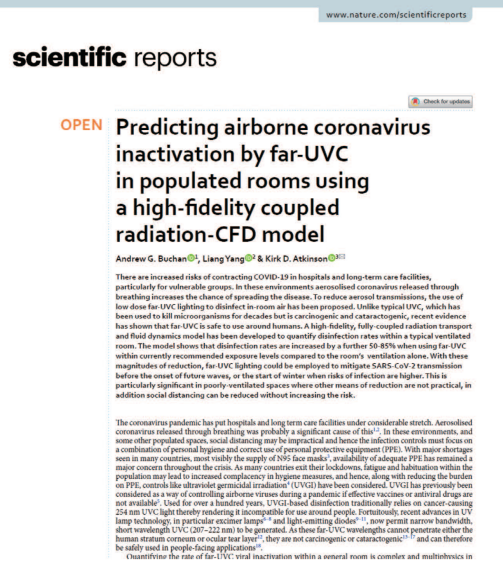
However, 254nm UV-C penetrates the stratum corneum and can penetrate into the spinous layer, causing burns and skin cancer.



The outer layer of the eye is a fibrous membrane composed of the cornea and the sclera. The cornea is covered by the tear layer. Ultraviolet light with a wavelength of 230nm or higher can penetrate the cornea, causing cataracts and keratitis.

222nm Far UV-C cannot penetrate the tear layer or even the cytoplasm of a single human cell, so it will not cause any adverse effects on the eyes.

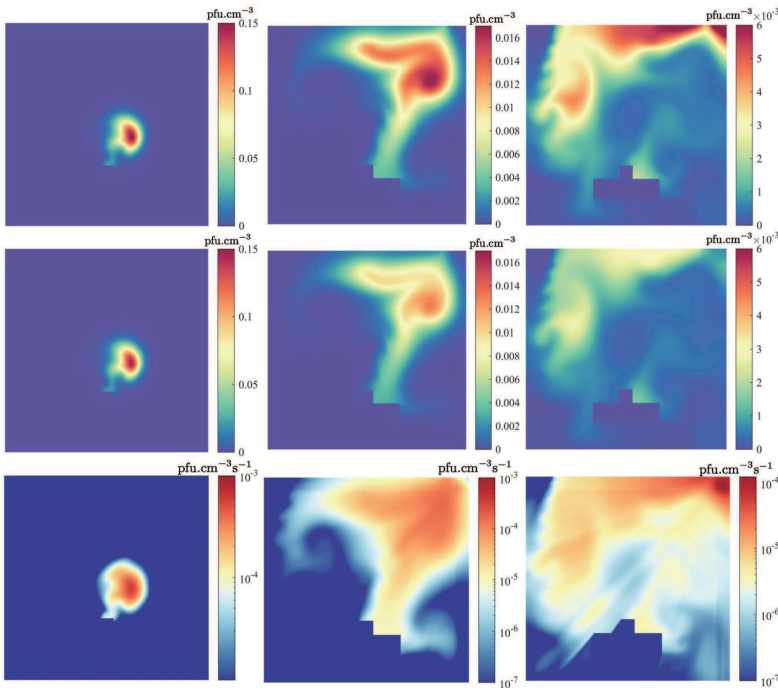
# The effectiveness of 222nm Far UV-C



In British Paper, November 2020, "Predicting airborne coronavirus inactivation by far-UVC in populated rooms using a high-fidelity coupled radiation-CFD model"

222nm Far UV-C was confirmed to inactivate COVID-19 novel Coronavirus SARS-COV-2 in hospital with an inactivation rate of 99.9%

222nm Far UV-C can also bring novel coronavirus concentrations down to the same level as those of wearing an N95 mask, especially in an unventilated confined environment, where novel Coronavirus concentrations decline exponentially.



222nm Far UV-C inactivation effect on novel coronavirus 10s/50s/100s in hospital wards

# The effectiveness of 222nm Far UV-C



In Japanese Paper, September 2020, "Effectiveness of 222nm ultraviolet light on disinfecting SARS-CoV-2 surface contamination" confirmed that irradiation with 3mJ/cm<sup>2</sup>(0.1mW/cm<sup>2</sup>) 222nm Far UV-C for 30s can reduce the activity of SARS-COV-2 by 99.7%.

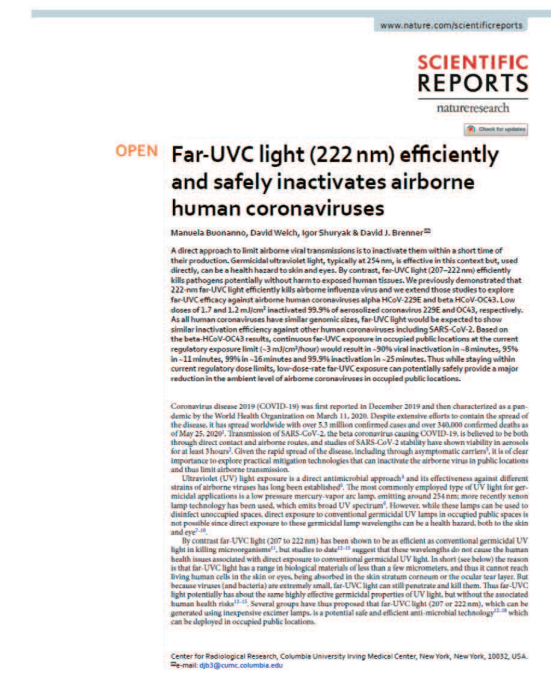
**Table 1**  
Efficacy of 222-nm UVC light (0.1 mW/cm<sup>2</sup>) on reducing viable SARS-CoV-2

	Control	UVC irradiation time				
		10 seconds	30 seconds	60 seconds	300 seconds	
Mean viable SARS-CoV-2 (TCID <sub>50</sub> /mL) (SD)	2.05 ± 1.21 × 10 <sup>8</sup>	2.34 ± 0.86 × 10 <sup>3</sup>	6.32 ± 0.0 × 10 <sup>1</sup>	6.32 ± 0.0 × 10 <sup>1</sup>	6.32 ± 0.0 × 10 <sup>1</sup>	
Log reduction	0.94	2.51	2.51	2.51	2.51	
Mean SARS-CoV-2 RNA* (copies/test) (SD)	2.12 ± 0.27 × 10 <sup>7</sup>	5.75 ± 0.82 × 10 <sup>7</sup>	3.41 ± 1.08 × 10 <sup>7</sup>	2.95 ± 0.41 × 10 <sup>7</sup>	3.03 ± 1.73 × 10 <sup>7</sup>	

SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; TCID<sub>50</sub>, 50% tissue culture infectious dose; SD, standard deviation. \*SARS-CoV-2 RNA was measured by quantitative reverse transcription PCR.

222nm Far UV-C inactivation of SARS-CoV-2 Novel Coronavirus10s decreased by 0.94 log10, 30s decreased by 2.51 log10

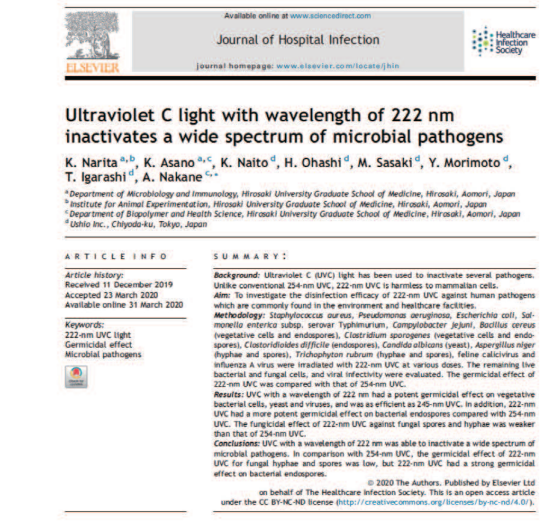
# 222nm Far UV-C is effective against other bacterial viruses



In June 2020, the U.S. paper "Far-UVC light (222nm) Efficiently and Safely In airborne human coronaviruses" confirmed the effect of aerosol seasonal coronavirus at 222nm Far UV-C. The inactivation rate was 99.9% after 25min UV-C irradiation.

The inactivation rates of α HCoV-229E and β HCoV-OC43 were 90% in 8min, 95% in 11min, 99% in 16min and 99.9% in 25min at 1.7 and 1.2mJ/cm<sup>2</sup> of 222nm Far UV-C.

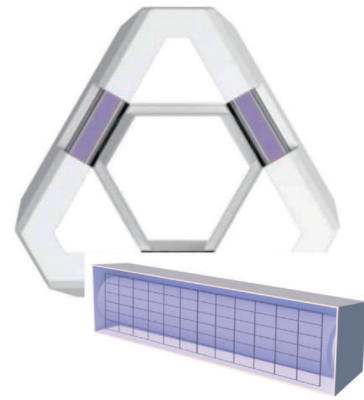
In July 2020, Japanese Paper "Ultraviolet C light with wavelength of 222 nm inactivates a wide spectrum of microbial pathogens" confirmed that Far UV-C has the same bactericidal effect as 245nm UV-C on vegetative bacterial cells, yeast and viruses. In addition, compared with 254nm UV-C, 222nm Far UV-C has stronger bactericidal effect on bacterial spores.



**Introduction**  
Several disinfectant techniques have been developed and are widely used to kill and/or inactivate pathogenic microorganisms in the environment [1]. Irradiation with ultraviolet (UV) light is one of the most common techniques, and elicits a



## A safe product provides a safe guarantee



We use a safe and effective 222nm Far UV-C excimer lamp.

Through professional nanometer band pass filter, all harmful bands of ULTRAVIOLET light will be thoroughly filtered, eliminate the harmness to human skin and eyes, in the human space, safe and efficient elimination of air and surface bacteria, viruses and other harmful microorganisms, to provide a healthy environment for the crowd.



### Safety

Can be used in human occasions, especially public places, 222nm Far UV-C excimer lamp is completely harmless to human body.



### Comprehensive and efficient

Disinfection is highly effective and can kill more than 99% of pathogens in a laboratory setting, including COVID-19 novel Coronavirus SARS-COV-2, influenza, bacteria, viruses, and antibiotic-resistant superbugs.



### Strong adaptability

Adapt to various indoor scenes, such as hotels, offices, hospitals and other venues.

## Authoritative Certification



### Safe and reliable

Products obtained:

- ★ IEC 62471 Photobiological Safety Testing Certification (Authoritative Certification)
- ★ Maximum Safety EXEMPT (completely harmless)
- ★ Disinfection effect Detection Certification (Authoritative certification)
- ★ Guangzhou Institute of Microbiology certification

The sterilization rate of microorganism in each experiment was >99.99%

At the same time, we have obtained CE-EMC, CE-LVD, FCC, ROHS and other certifications

