

Vendi222

FAR UVC LIGHT 222nm



TRIPLE-222-60W

A smart system of human body surface sterilization

Specifications



Remote Controller

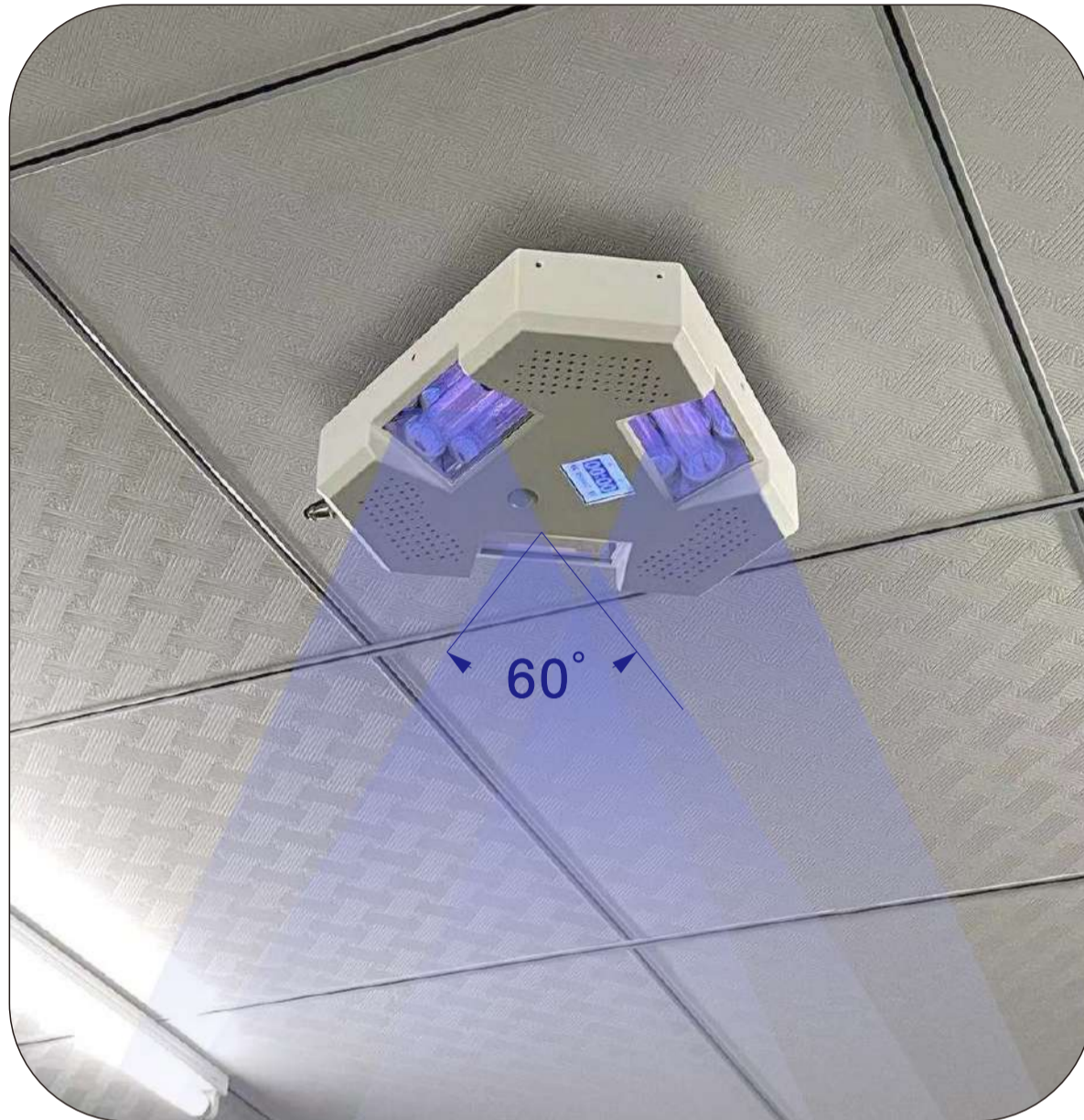


Power Adapter



Dimensions:	349x312x95mm
Weight:	2.1kg
Wattage:	60W
UV Wavelength:	FAR UVC 222nm
Effective UV Intensity(With Filter):	3000 μ W/cm ²
Input Voltage:	DC24V
Ambient Operating Temperature Range:	-10°C to+50°C
Safety Requirement:	Mercury-Free
Storage Environment:	Dry, and Ventilation Environment
Beam Angle:	100°
Optional Function:	Motion Sensor and Timer Module;
Expected Lifespan:	4000+H
Material:	High Purity Quartz Glass

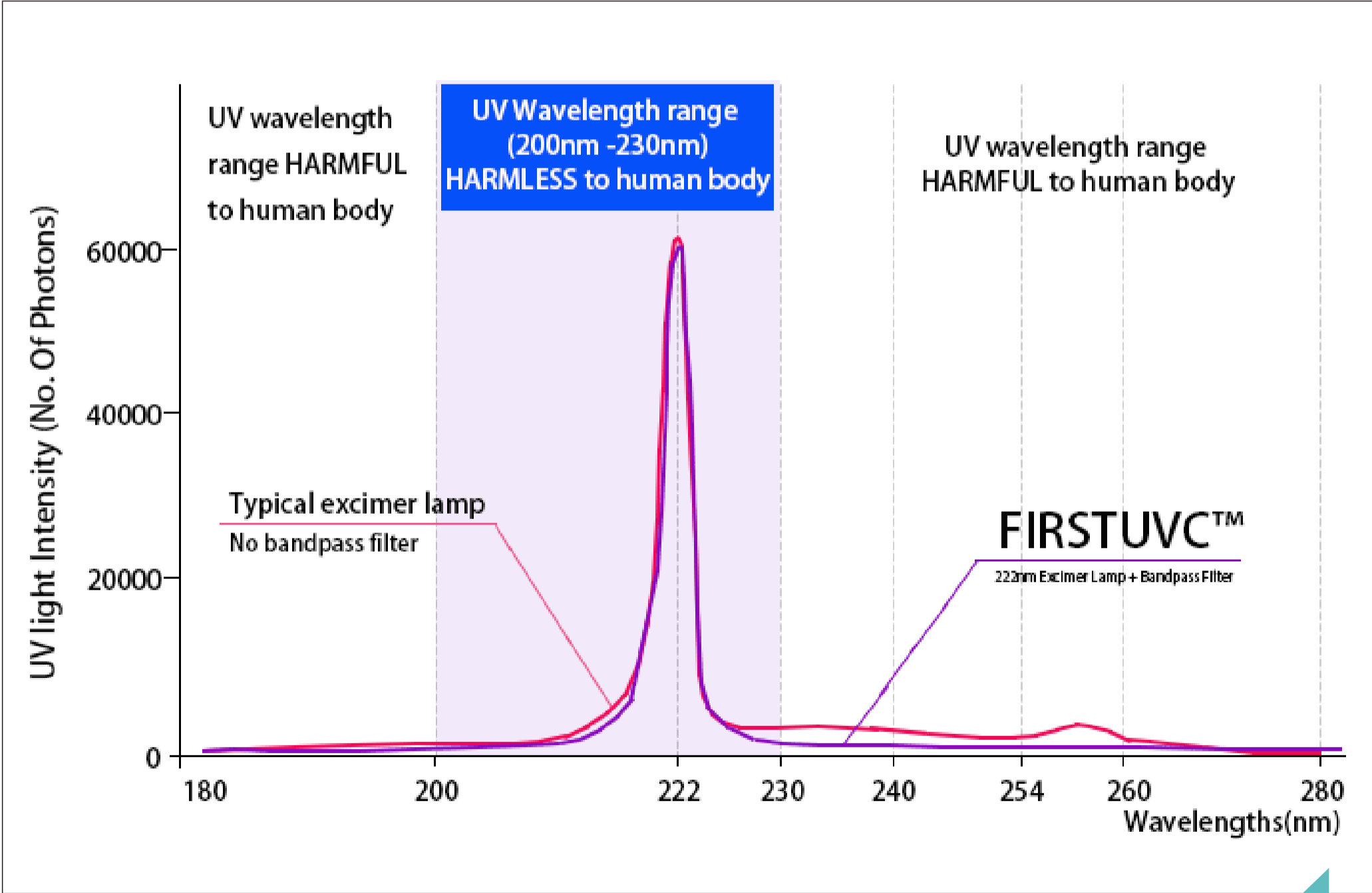
How to use?



Installed on the roof of offices, supermarkets, etc.
for effective disinfection.

Vendi222 BANDPASS FILTER

Proprietary Safety Filter Technology Included to Ensure Narrowband 222nm Emission



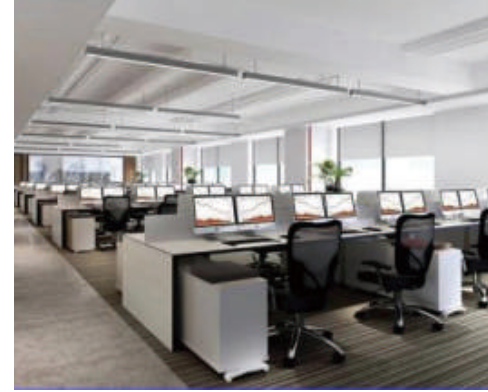
Occasion of intensive crowds/ time of air pollution are health hazardous



Ambulance



Restaurant



Office



School



Hospital



Shopping Center Entrance



Bus



Meat Processing Factory



Bank

VendiGlobe sterilization

FARUVC has strong bactericidal ability. After irradiation, It can destroy the bacterial DNA structure and lose its vitality and fecundity.



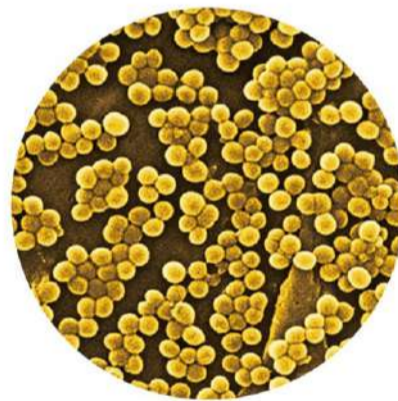
Candida albicans
(Hand, foot, and mouth disease (HFMD), Fever)



E. coli
(Diarrhea, vomit)



Salmonella Typhimurium
(Acute gastroenteritis)



Staphylococcus aureus
(Cough, pneumonia)



Haemolytic streptococci
(Tonsillitis)

Currently there are no bacteria that are found by all scientists and biologists in the world to be imperishable by UVC LED.

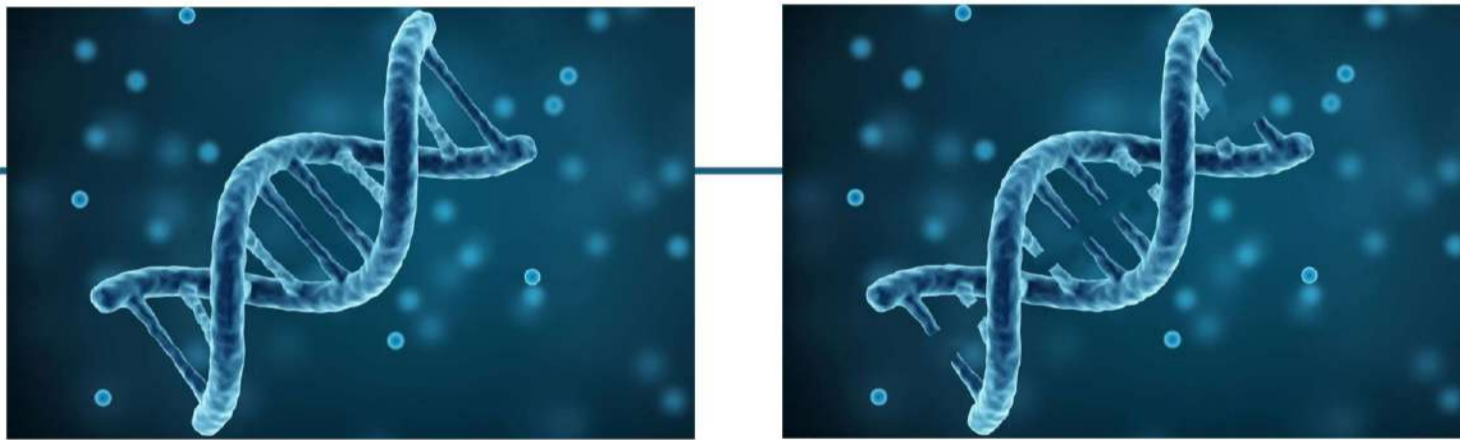
Eliminate bacterial reproduction

Experiments show that faruvc can destroy the DNA structure of bacteria, make it lose its vitality and fecundity, and then die, so as to achieve the purpose of sterilization and disinfection.



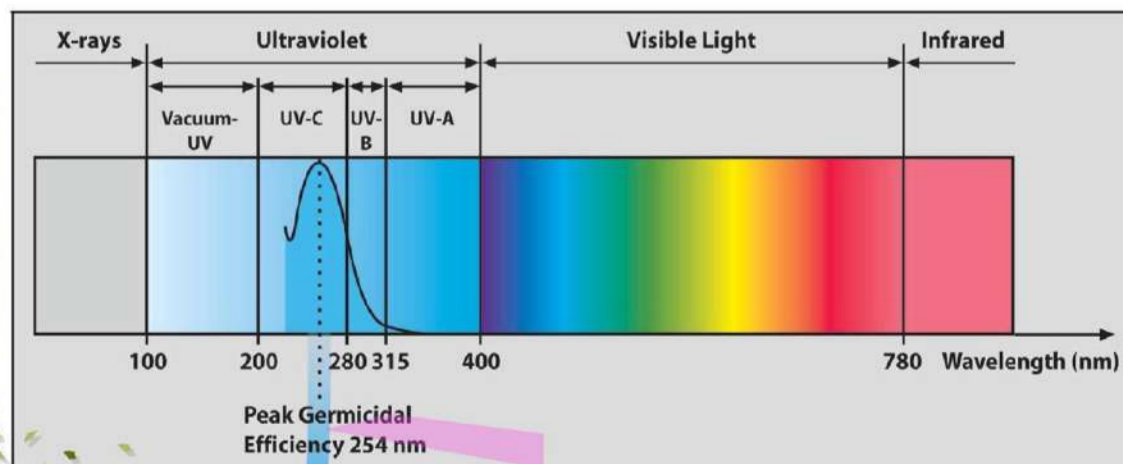
Before irradiation

After irradiation



However, in the range of UV LED wavelength, the fields of application vary as energy intensity differs .

Micro-organismo sendo destruído. Sem uso de produtos químicos e tóxicos que causam Câncer ou outras letais.



Irradiação Ultravioleta na Banda C no comprimento de 254 nanômetros é mais eficaz e eficiente para a desinfecção de vírus e bactérias letais.

The Spectrum of Light

www.xgerms.com.br

Far ultraviolet light 222nm

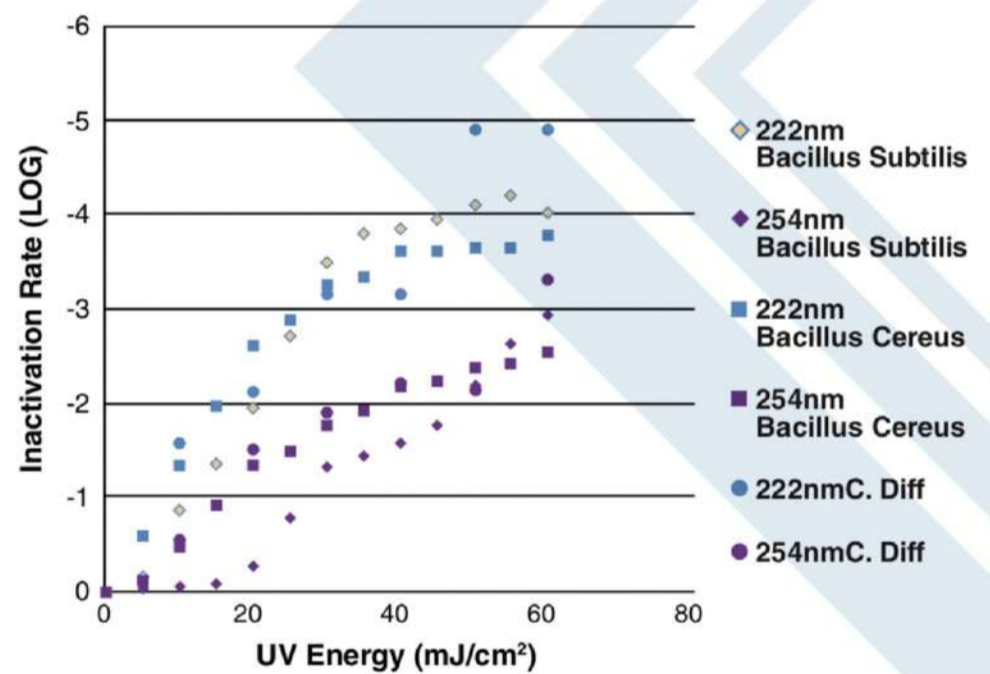
Far ultraviolet light (222 nm) can effectively kill pathogens such as coronavirus without damaging exposed human tissues. This is because, due to its strong absorption in biomaterials, far ultraviolet light can not even penetrate the outer layer (non living layer) of human skin or eyes. However, because bacteria and viruses are micron or smaller in size, far ultraviolet rays can penetrate and inactivate them.



Disinfection effect: comparison between 222 nm and 254 nm

Domain	Species	Dose for 3log reduction [mJ/cm ²]			
		222 nm	254 nm		
Vegetative Bacteria	MRSA	メチシリン耐性黄色ブドウ球菌	15	10	
	<i>Pseudomonas aeruginosa</i>	緑膿菌	8	4	
	<i>Escherichia coli O157</i>	大腸菌O-157	9	5	
	<i>Salmonella typhimurium</i>	ネズミチフス菌	10	4	
	<i>Campylobacter jejuni</i>	カンピロバクター	4	4	
	<i>Bacillus subtilis</i>	枯草菌	Vegetative cell (栄養型)	7	8
	<i>Bacillus cereus</i>	セレウス菌	44	90	
	<i>Bacillus subtilis</i>	枯草菌	Spore (芽胞)	30	60
	<i>Clostridium difficile</i>	クロストリジウム・ディフィシル	30	60	
	Molds and Yeasts	<i>Candida albicans</i>	カンジダ・アルビカンス	24	40
<i>Penicillium expansum</i>		アオカビ	50	50	
<i>Aspergillus niger</i>		黒色麹菌	Hypha (菌糸) >1000 Spore (芽胞) >500	>700 >700	
Virus	MS2	バクテリオファージMS2	23	50	
	<i>Feline calicivirus</i>	ネコカリシウイルス	24	24	
	<i>Influenza virus</i>	インフルエンザ	6	6	

Comparison (254nm VS 222nm) for Spore Inactivation

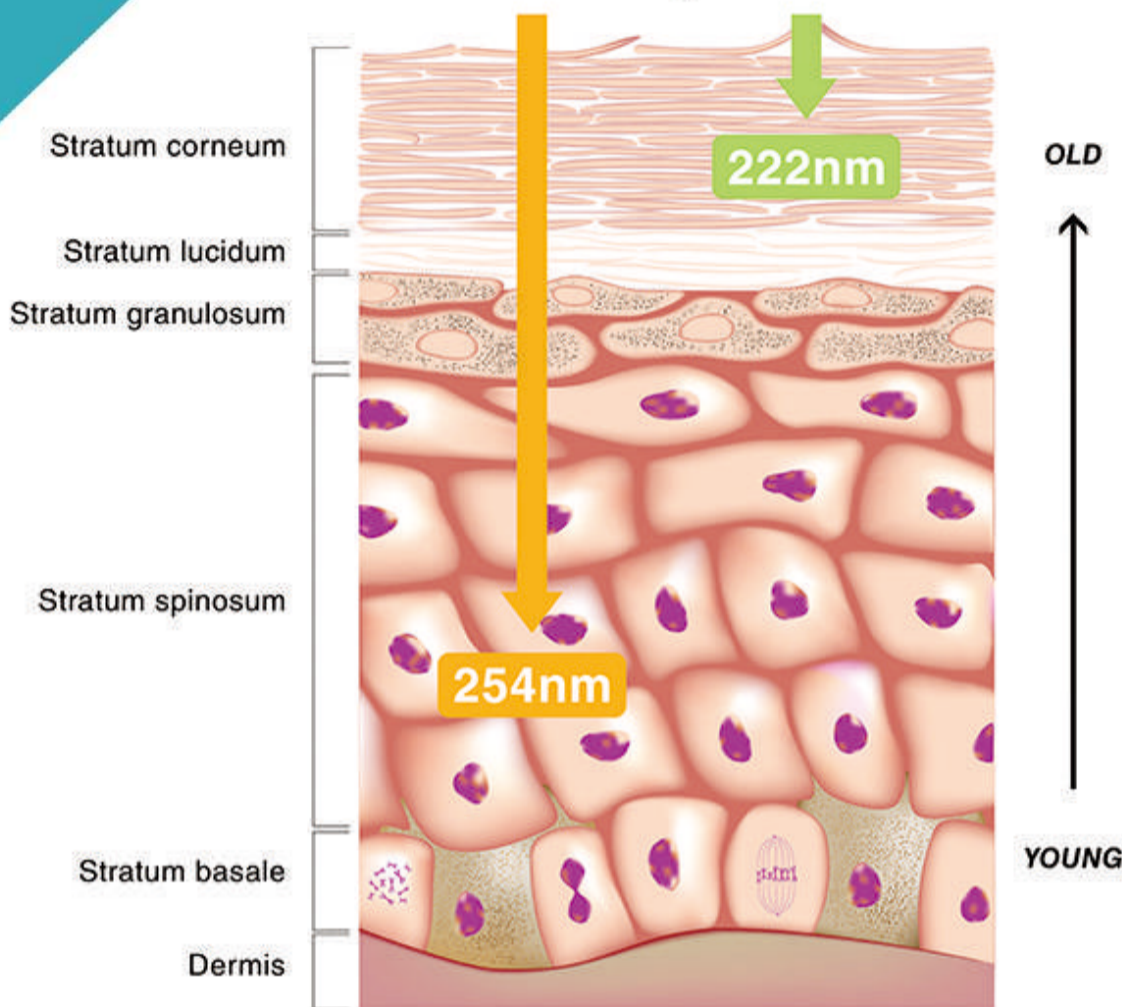


Germicidal irradiation, benefits, and differences of ULTRAVIOLET LIGHT

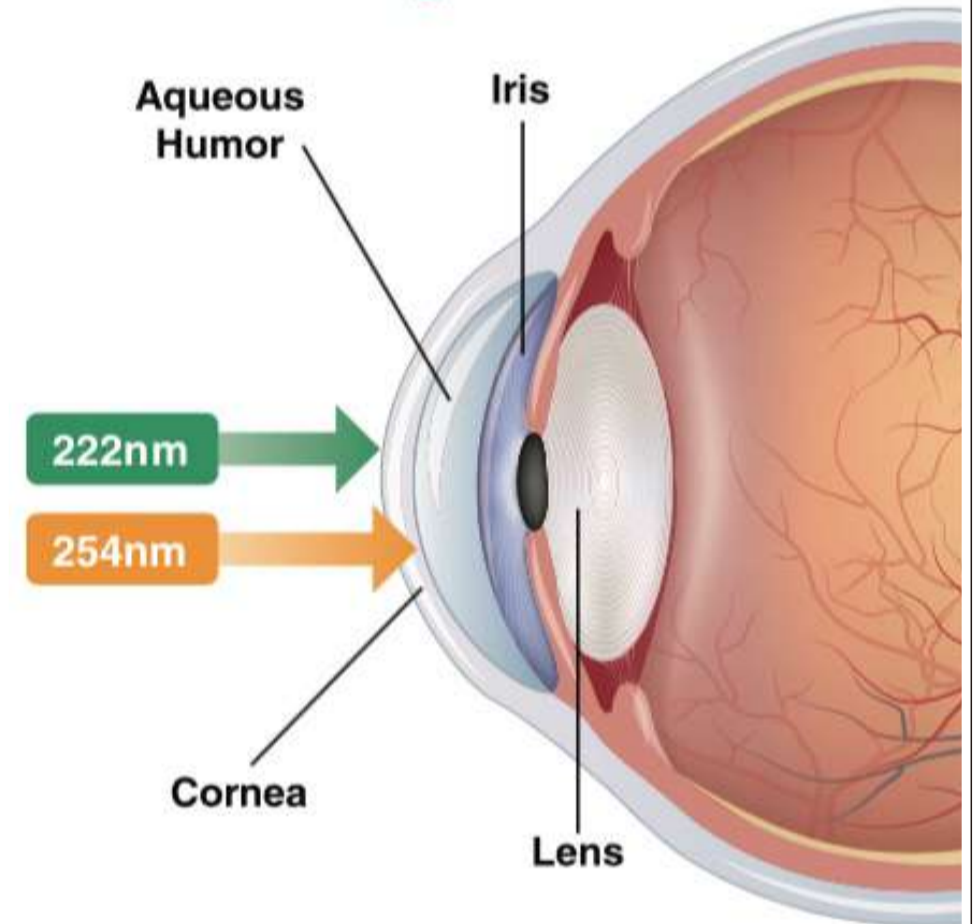
UV type	NANOMETERS (nm)	SAFE for skin and eyes	RAPID DEGRADATION on materials like plastic and rubber	PRACTICAL USES
VUV Far-UV	100-200	YES	YES	Medical equipment
Far-UVC	207-222	YES	YES	Germicidal, most effective for disinfecting , sensing
UV-C	200-280	NO	YES	Germicidal, most effective for disinfecting , sensing
UV-B	280-315	NO	YES	Curing, tanning, medical applications
UV-A	315-400	NO	NOT TYPICALLY	Curing, printing, lithography, sensing, medical applications

Skin Absorption Penetration Showing 222nm vs. 254nm

Structure of the Epidermis

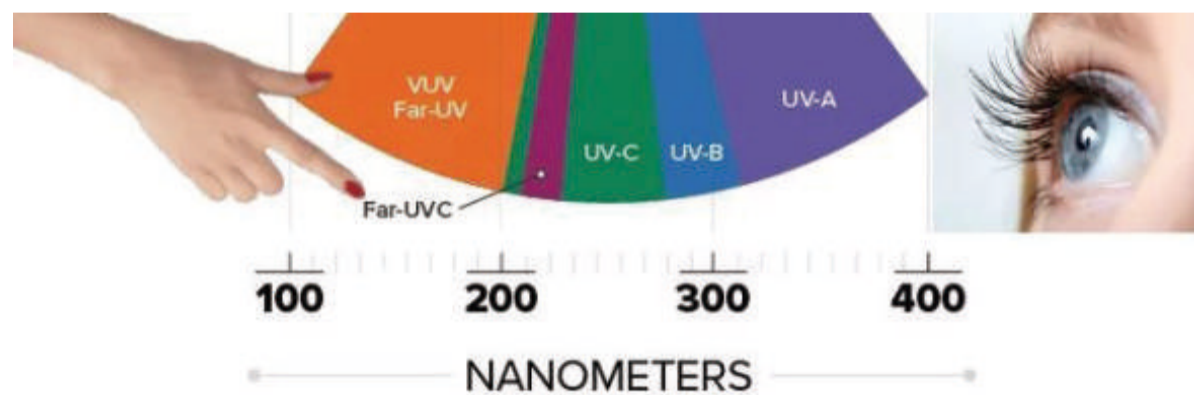


Damage of Cornea

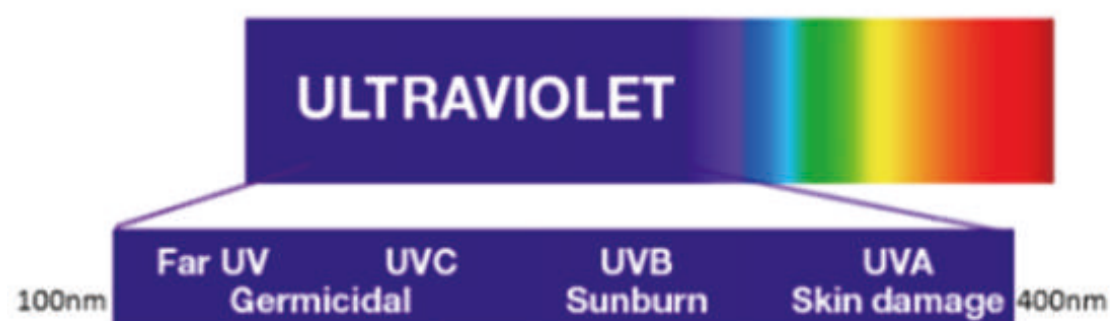


Corneas absorb 222nm and does not produce cataracts

The transmittance of cornea at 280nm or shorter wavelength is 0.01% or less.³



VUV Far-UV	Far-UVC	UV-C	UV-B	UV-A (Near UV)
• 100nm-200nm	• 207nm-222nm	• 200nm-280nm	• 280nm-315nm	• 315nm-400nm
• Medical equipment	• Germicidal	• Germicidal	• Curing	• Printing
• Nanofabrication	• Most effective for disinfecting	• Most effective for disinfecting	• Tanning	• Curing
• Photochemistry	• Safe for skin and eyes	• Sensing	• Medical Applications	• Lithography
• Spectroscopy	• Sensing			• Sensing
				• Medical Applications



UV-C Comparison Studies

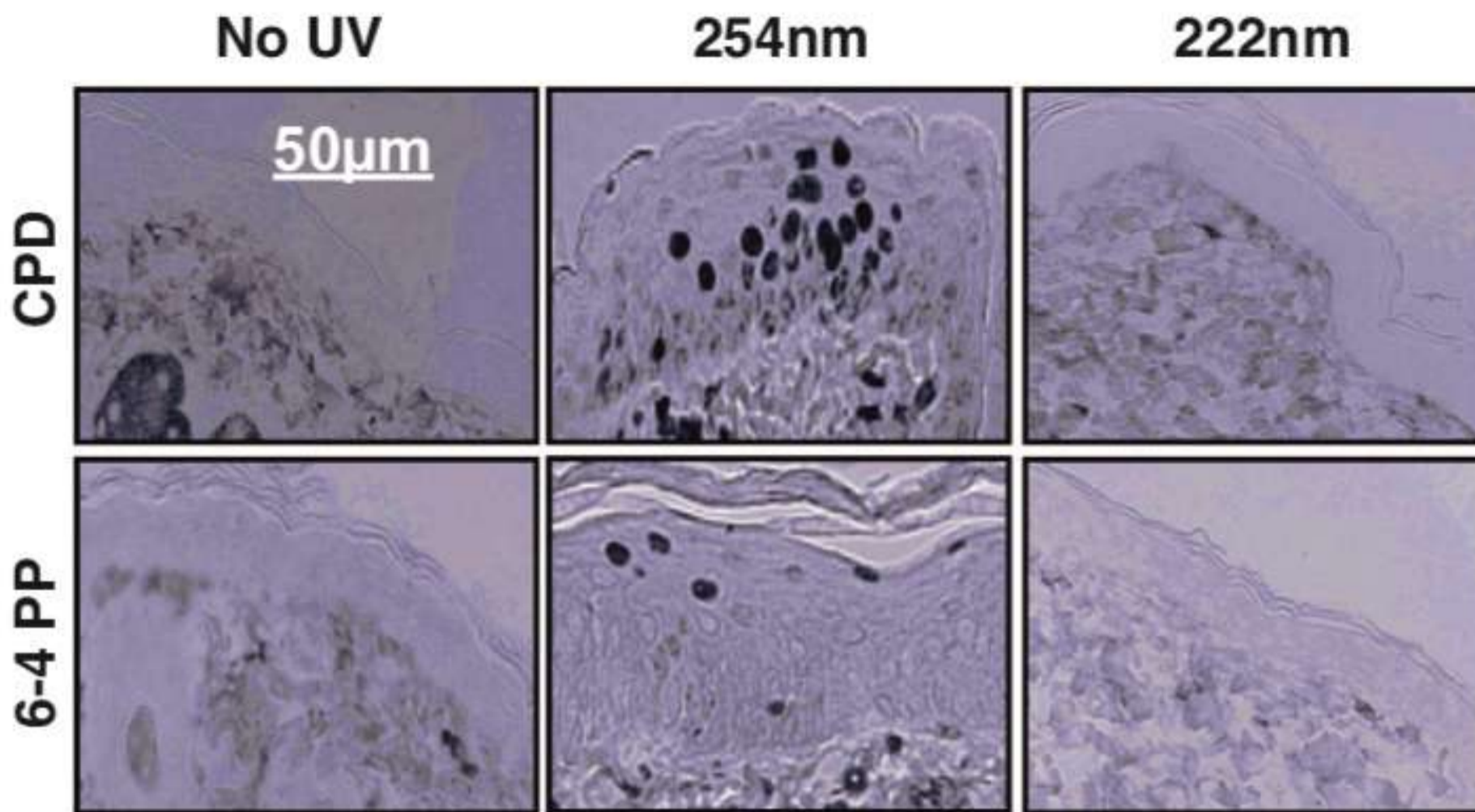


Fig. 1 Comparison of cross-sectional images of UVC-induced premutagenic skin lesions CPD (cyclobutane pyrimidine dimers) and 6-4PP (photoproducts) in the dorsal epidermis of mice. A UV dose of 157 mJ/cm² was used for both 254 and 222 nm¹.

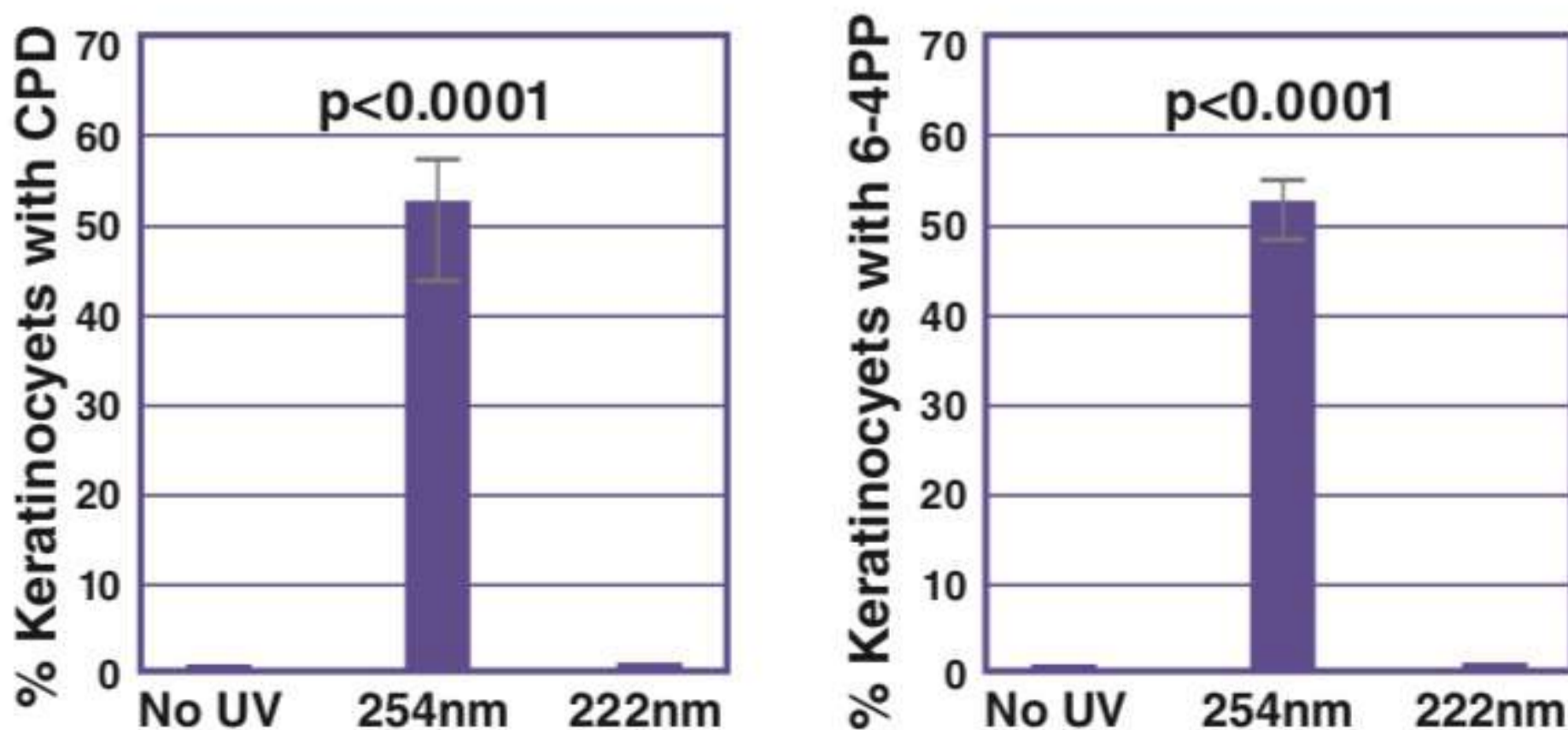


Fig. 2 & 3 Average percent of keratinocyte cells exhibiting dimers (Fig 2. - right CPD; Fig 3. - left 6-4PP) measured in UVC-induced premutagenic DNA lesions in nine randomly selected fields of view per mouse (n=3)¹.

White mouse test (eyes/skin)

12 days, 8 hours of irradiation every day, irradiation distance of 1 meter

广微测
Gmicro Testing

广东省微生物分析检测中心
GUANGDONG DETECTION CENTER OF MICROBIOLOGY

分析检测报告

REPORT FOR ANALYSIS

报告编号
Report No. 2021SP00460R01a

样品名称
Name of Sample EXCIMER 222nm Sterilizer

委托单位
Applicant Guangdong Excimer Optoelectronic Technology Co., LTD.

检测类型
Test Type Entrusted Test

单位地址
Address 广州市先烈中路100号大院06号楼
Building 06, No.100 Central Xian Lu Road, Guangzhou, China

电话编码
510770

联系电话
Phone (020)87137166

网址
Web: www.gmicro.com

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广东省微生物分析检测中心
GUANGDONG DETECTION CENTER OF MICROBIOLOGY

分析检测报告

REPORT FOR ANALYSIS

报告编号 (Report No.) 2021SP00460R01a 检测号 (Verification Code) 1408295

样品名称 Name of Sample	EXCIMER 222nm Sterilizer	检测类型 Test Type	Entrusted Test
委托单位 Applicant	Guangdong Excimer Optoelectronic Technology Co., LTD.	地址 Address	4/F, No.63 Pansong Road, Teyuan Town, Heshan City, Guangdong Province, China
样品来源 Sample Source	The Applicant shall submit it for test	样品数量 Sample Quantity	4 Units
样品规格和批号 Spec and Lot of Sample	DF20B-20W DC24V	样品状态和特性 State and Characteristic	Machine
检测日期 Sample Received Date	2021-01-14	检测完成日期 Completion Date	2021-04-08
检测标准/方法 Test Standard and Method	The method is provided by the Applicant		
检测项目 Item Tested	The skin and eyes of mice were irradiated with 222nm UVC		
检测结论 Test Conclusion	After 12 days of 222nm UVC irradiation according to the method given by the Applicant, all animals drank and ate normally, and no abnormality was found in their behavior. No damage was found in the skin and eyes after daily observation. Pathological examination found no abnormal pathological changes in the eyes of all the animals, obvious increase of adipocytes in the substantia nigra of the skin, and no other lesions.		
备注 Remarks	① Animal testing site: No. 790, Shendou Road, Huangpi District, Guangzhou City; ② Manufacturer: Guangdong Excimer Optoelectronic Technology Co., LTD. (provided by the Applicant).		

Issue Date: 2021-04-19

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广东省微生物分析检测中心
GUANGDONG DETECTION CENTER OF MICROBIOLOGY

分析检测报告

REPORT FOR ANALYSIS

报告编号 (Report No.) 2021SP00460R01a

样品名称
Name of Sample EXCIMER 222nm Sterilizer

检测日期
Inspection Date January 14, 2021

检测完成日期
Inspection Completion Date April 8, 2021

检测项目
Inspection Item The skin and eyes of mice were irradiated with 222nm UVC

I. Material

1. Test substance: Excimer 222nm sterilizer.

2. Animals: A total of 20 healthy Balb/c mice (SPF level), half male and half female, with an initial body weight range of 20 ±2g, were selected and observed in the animal quarantine room for 3 days before the experiment. The animals were from Guangdong Medical Experimental Animal Center (SCXK (Guangdong) 2016-0156; animal certification number: 44007200087129 License No.: SCXK (Guangdong) 2016-0156). Feeding environment: temperature range (°C): 20-25, relative humidity (%): 40-70. Feed is provided by Jiangsu Synergetic Pharmaceutical Biotechnology Co., Ltd., free drinking water.

3. Main instruments and reagents: Electronic Balance QDW-C-V001, Analytic Balance QDW-B-V001, HM140E Rotary Shaking Machine QDW-A-G002, Automatic Tissue Embedding Machine QDW-A-G004, Automatic Lapping Machine QDW-A-G003, Automatic Dyeing Machine QDW-A-G005, Tissue Dehydrator QDW-A-G006, Biological Microscope QDW-B-C008.

II. Method

1. Test basic: the method shall be provided by the Applicant.

2. Test method: according to the method given by the Applicant, the back hair of all animals was removed 24h before the test, and the shaving area was 5 x 5 square centimeters. The mice were irradiated with the sample for 8 hours a day for 12 days. During the irradiation period, they could drink and eat freely. The irradiation distance was 1 meter, and the daily dose of ultraviolet radiation was 489mj, and the cumulative dose in 12 days was 5875mj. Every day before and after the experiment, the skin was observed for inflammation or erythema, and the eyes were observed for redness and secretion. After 12 days of irradiation, all the animals were killed, and their skin and eyes were dissected and collected to observe the damage by naked eyes. After the examination, the skin/eyes of each animal were fixed in 10% formaldehyde solution, routine section making, HE staining, microscopic observation, pathological tissue observation and scoring.

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III. Results

Table 1 Eye Pathological Examination Score Record

Gender	No.	Wall of Eyeball	Eye Content	Other	Gender	No.	Wall of Eyeball	Eye Content	Other
Female	1	√	√	√	Male	1	√	√	√
	2	√	√	√		2	√	√	√
	3	√	√	√		3	√	√	√
	4	√	√	√		4	√	√	√
	5	√	√	√		5	√	√	√
	6	√	√	√		6	√	√	√
	7	√	√	√		7	√	√	√
	8	√	√	√		8	√	√	√
	9	√	√	√		9	√	√	√
	10	√	√	√		10	√	√	√

Note: Please fill in the type of the lesion and indicate the extent of the lesion. If the tissue is normal and no lesion is found, use "√".

Table 2 Skin Pathological Examination Score Record

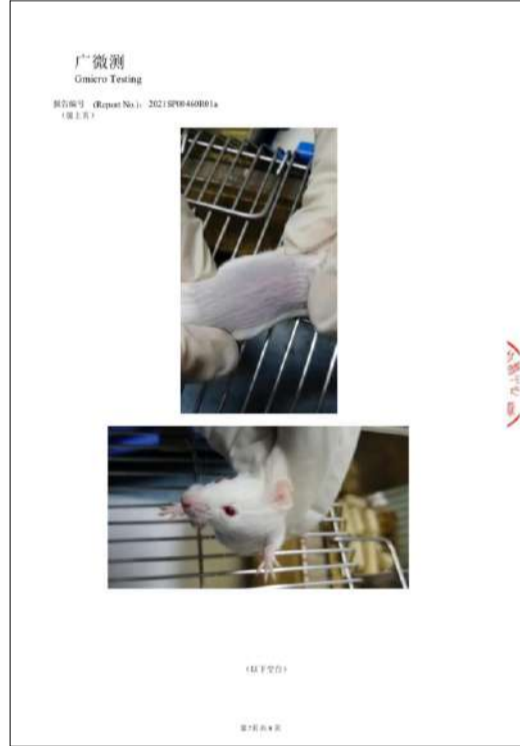
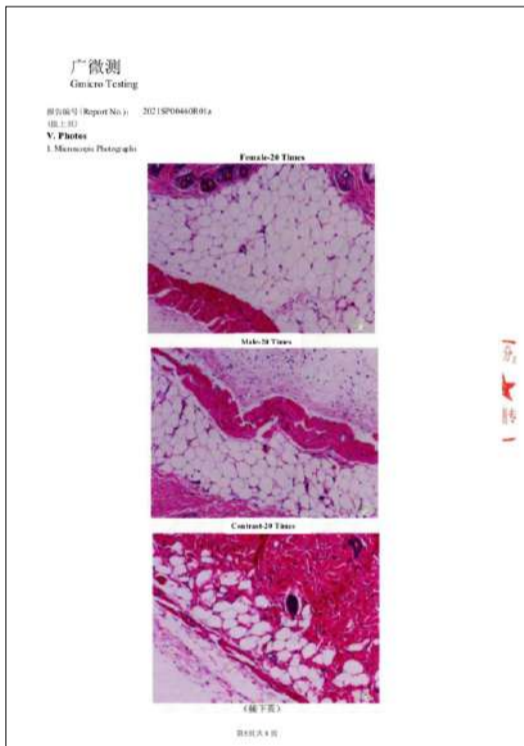
Gender	No.	The Epidermis	The Dermis	Subcutaneous Tissue	Other	Gender	No.	The Epidermis	The Dermis	Subcutaneous Tissue	Other
Female	1	√	√	√	√	Male	1	√	√	√	√
	2	√	√	√	√		2	√	√	√	√
	3	√	√	√	√		3	√	√	√	√
	4	√	√	√	√		4	√	√	√	√
	5	√	√	√	√		5	√	√	√	√
	6	√	√	√	√		6	√	√	√	√
	7	√	√	√	√		7	√	√	√	√
	8	√	√	√	√		8	√	√	√	√
	9	√	√	√	√		9	√	√	√	√
	10	√	√	√	√		10	√	√	√	√

Note: Please fill in the type of the lesion and indicate the extent of the lesion. If the tissue is normal and no lesion is found, use "√".

IV. Conclusion

After 12 days of 222nm UVC irradiation according to the method given by the Applicant, all animals drank and ate normally, and no abnormality was found in their behavior. No damage was found in the skin and eyes after daily observation. Pathological examination found no abnormal pathological changes in the eyes of all the animals, obvious increase of adipocytes in the substantia nigra of the skin, and no other lesions.

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注意事项

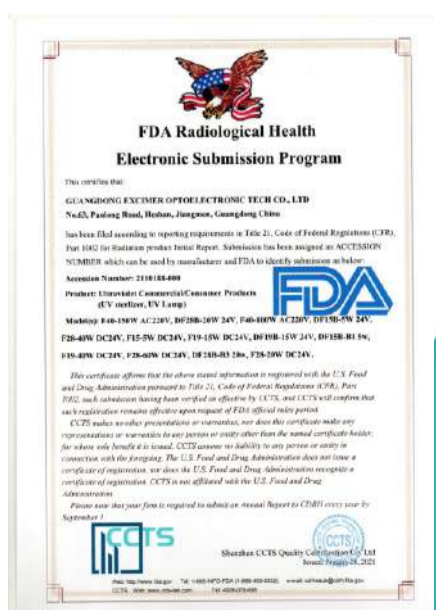
Notice Items

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The Test report is invalid if not affixed with Authorized Stamp of Test and Paging Seal.
- 检测报告无审核人、批准人签字无效。
The Test report is invalid without signature of verifier and approver.
- 检测报告涂改增删无效。
The Test report is invalid if being supplemented, deleted or altered.
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Unless otherwise stated, the results shown in this test report refer only to the sample(s) submitted.
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Any dispute of the report must be raised to the testing body within 15 days after the report is received, exceeding which the dispute will not be accepted.
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For the tested sample(s) submitted by the applicant, the sample information in the test report is provided by the applicant and the laboratory is not responsible for its authenticity.
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The test report without the certification mark (CMA), which involves items that have not obtained the certification, is only used for scientific research, teaching or internal quality control.

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No lesions found

Certificate



ABOUT US

VendiGlobe
222nm FAR-UVC Disinfection

VendiGlobe
FAR UVC LIGHT 222nm

Vendiglobe, a company aimed at improving the safety and quality of the environments in which people work, travel, and live through the application of environmentally sound technologies. We are excited to debut a new product line of FUV 222nm Excilamps and doors using empirically-proven technology to reduce the presence of viruses and bacteria. For years, we have known that conventional ultraviolet light effectively kills bacteria and viruses; however, it is also a health hazard to humans preventing its widespread use. This new product line takes advantage of research that has identified a way of utilizing the effectiveness of ultraviolet light without the health concerns. At a wavelength of 222nm, these lights are unable to penetrate the skin's protective outside layer, making them safely deployable in public spaces.

The COVID-19 pandemic has illustrated the importance of ensuring safety, particularly for business, educational, and travel settings where people congregate in close proximity.

With this line of Excilamps and doors, we hope to greatly improve safety and reduce transmission of dangerous viruses and bacteria. Our lamps have a wide operating temperature, power up in less than a second, are safe for people and animals.

Our Far-UVC 222nm excimer light systems inactivate airborne and surface pathogens like SARS-CoV-2 (COVID-19) by damaging its RNA. The same light neutralizes bacteria by damaging its DNA.



Website: <https://222nm.org>