MY LUMENS®

Artemis 2in1 Far UVC Disinfection +Indirect Lighting Devices

Care for you

Safe for you

Protect you

Artemis 2in1 Far UVC Disinfection +Indirect Lighting Devices

Deactivate bacteria and viruses in occupied space

Antibacteria

Virus control and disinfection by UV irradiation

Occupied environment

May be used in occupied space

Easy installation

Direct replacement mounting

Human sensor

Equipped with sensor-based safety functions

IOT sensor

UV irradiation at the touch of a switch

*These products unitilize Care222® technology developed by Ushio Inc.

*Care222® is a trademark or registered trademark of Ushio Inc, and Ushio America, Inc.

Features

Products Features

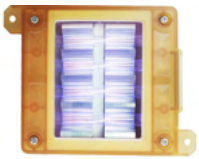
Equipped with Care222® , has the disinfection function of far UVC 222nm,which could be used to sterilize for the airborne and surfaces in the occupied environment.

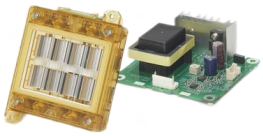
Adopted the Indirect lighting technique, which makes the light bright,uniform,comfortable,no flicker and very less glare. It's eye-friendly.

The operation status of Care222® is controlled by IOT intelligent control module, which has the features of human body sensing, distance sensing and timing.

The Care222® Technology

Featues





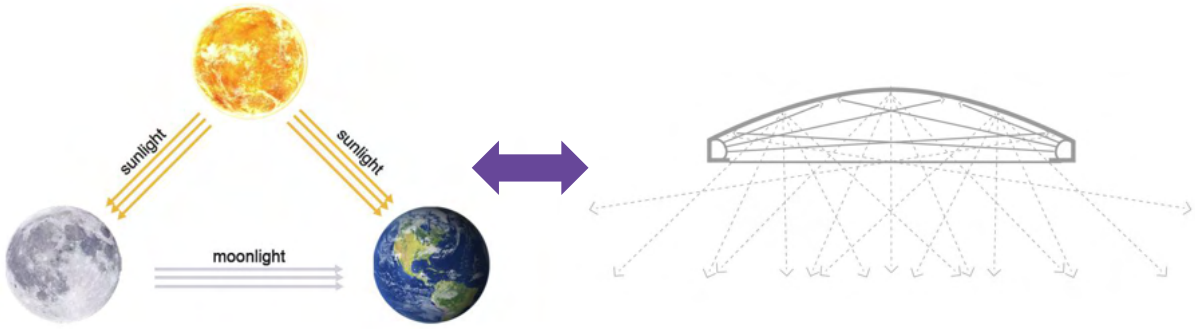
- Quickly and quietly inactivates viruses and disinfects surfaces in occupied space.
- Is on for a few minutes throughout the day and in very short intervals.
- Contains proprietary filtering technology that no other company can offer.
- Has been tested for efficacy, and poses a minimal health risk to human skin or eyes.

More information:
www.care222.com

USHIO

Indirect lighting

Indirect lighting theory



Indirect lighting with MCPET inside

Like the moonlight to the earth, which is sunlight reflected by the moon. The light is soft, comfortable, and no glare.

MCPET introduction

"MCPET" was developed by Furukawa Electric of Japan and is the world's first commercially available microporous molded polyethylene terephthalate (PET) sheet.

These sheets have the world’s highest reflectance due to their ultra-fine foam structure, and allow the secondary processing of autonomous bend processing and mold processing as a consequence of their high rigidity. They have realized increases in optical extraction efficiency, improvements in glare and irregularities, and reductions in light sources, etc., and expand the freedom of design.

Microcellular foamed sheets possess excellent light reflecting performance, and have been used widely as reflectors for lighting fixtures.

The excellent light reflecting performance has led to a reduction in the number of fluorescent lamps, LED, and other light sources required, making a significant contribution to power conservation.

More information:
https://www.furukawa.co.jp/mcpet/english/feature.htm

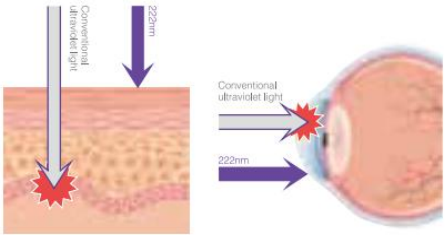
FURUKAWA ELECTRIC GROUP

Safety and efficacy

・Safe for human cells (Difference in penetration depth)

Filtered Far UV-C Ultraviolet light

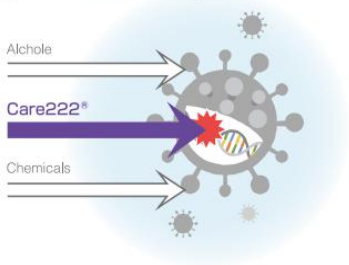
The 222nm wavelength used with Care222 technology is absorbed by the dead skin layer of the stratum corneum and the upper layer of cornea of the eye.



・Why is UV disinfection effective?

Why is UV disinfection effective?

UV light works by disrupting the DNA or RNA of microorganisms such as viruses or bacteria so they cannot replicate.
Unlike with chemical treatments or antibiotics, bacteria and viruses cannot become resistant to damage from ultraviolet light.

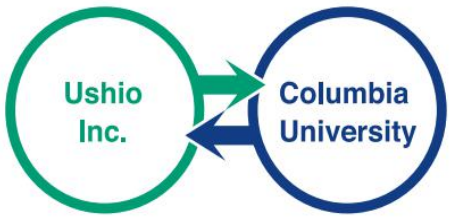


Patented optical band pass filter

・Joint development with Columbia University

Joint development by Ushio and Columbia University

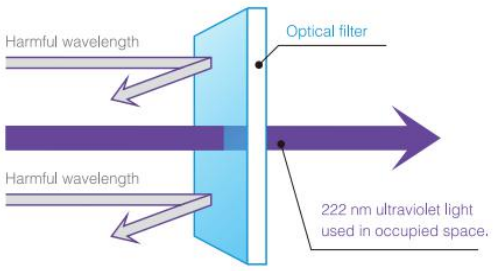
Care222 technology is based on research by Ushio, Inc. a light source solutions company, and Columbia University Center for Radiological Research, a leading resarch lab for UV irradiation.



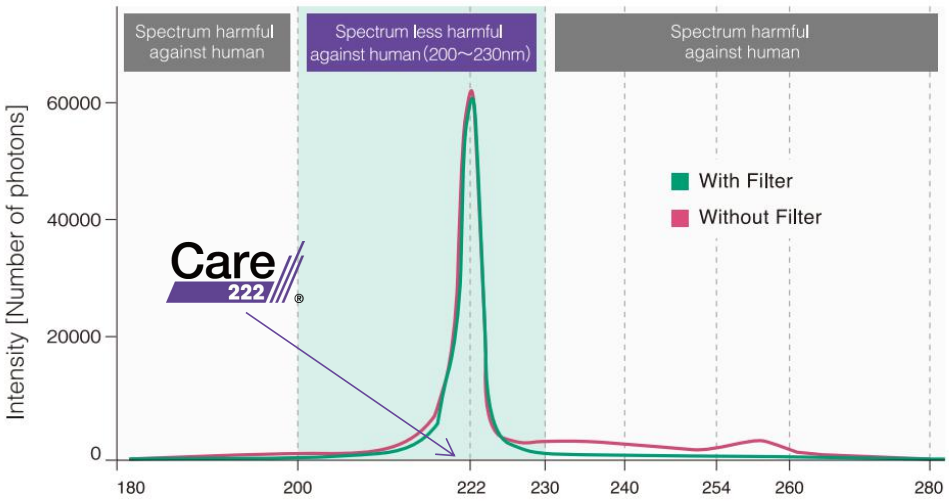
・Filtering of harmful ultraviolet wavelength (Maybe used in occupied space)

Filtering of harmful ultraviolet wavelength (Maybe used in occupied space)

Care222 is a Far UV-C disinfection technology using 222nm excimer lamps combined with an optical filter, which blocks wavelengths above 230nm that can be potentially harmful to human skin and eyes.



·Spectrum distribution



Application Scenarios

Hospital

Clinic

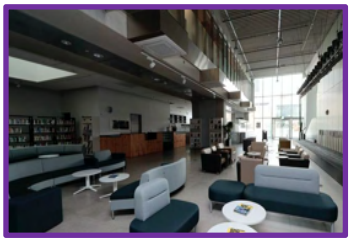
School

Restaurant

Care for you

Love you

Protect you



Lounge

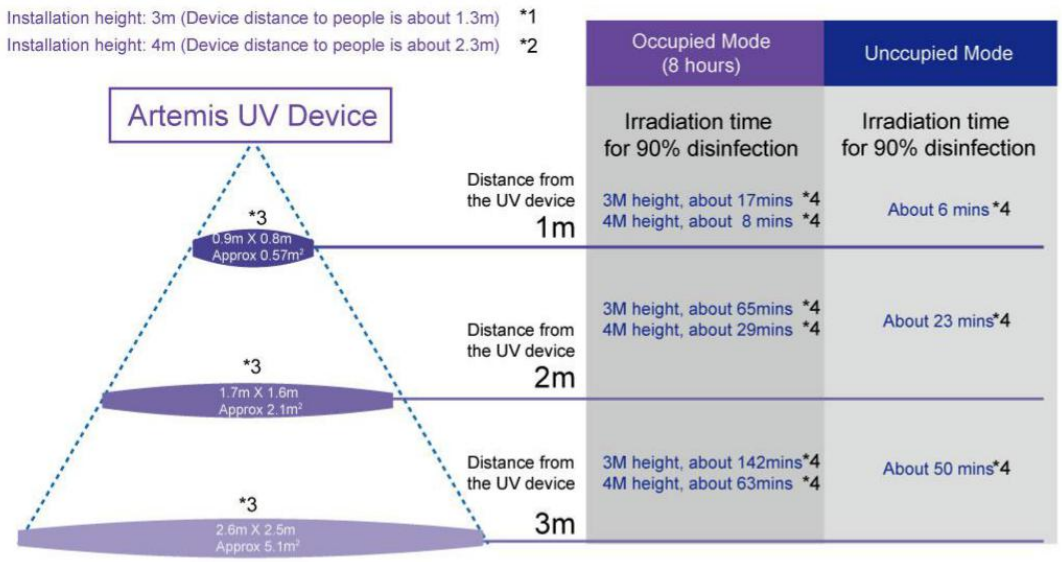
Library

Café

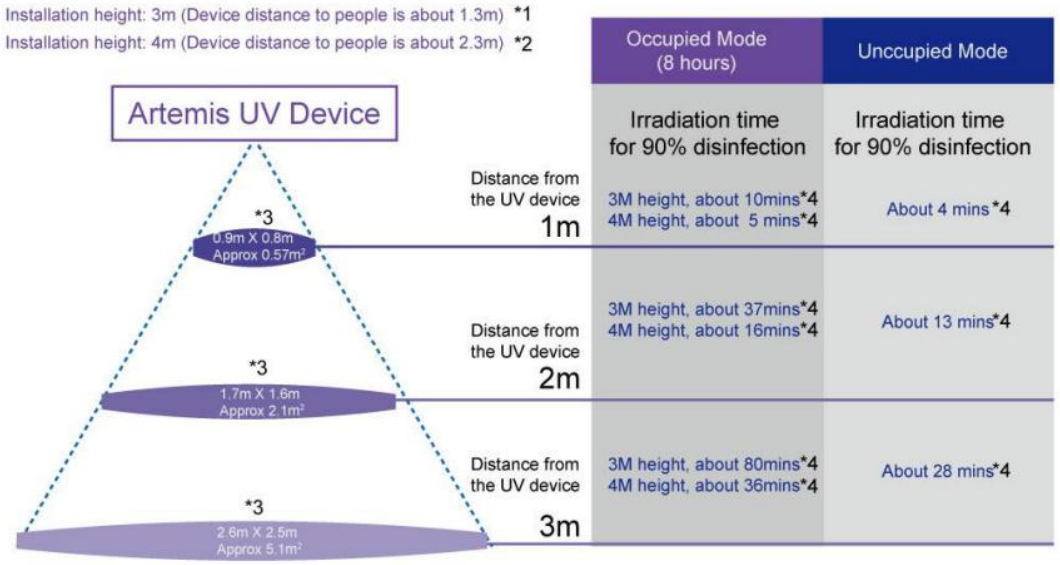
Office

Irradiation time and coverage

surface disinfection



airborne disinfection



Attention

This is not a result of any demonstration in a real room. Disinfection efficacy varies depending on usage environment and irradiation conditions

No matter in which mode,at any time,as long as the person(any part of the body) is within 1M distance to UV module,the module will be forced to shut down.

1.In occupied mode. The UV device is on for 15 seconds,and off for 200 seconds.In unoccupied mode, it is on for 15 seconds, off for 30 seconds,repeating, and off automatically if there is unoccupied more than 2 hours.

2.In occupied mode. The UV device is on for 15 seconds,and off for 80 seconds.In unoccupied mode, it is on for 15 seconds, off for 30 seconds,repeating, and off automatically if there is unoccupied more than 2 hours.

3. Longer diameter x shorter diameter (Area where is 0.6 times of central intensity)

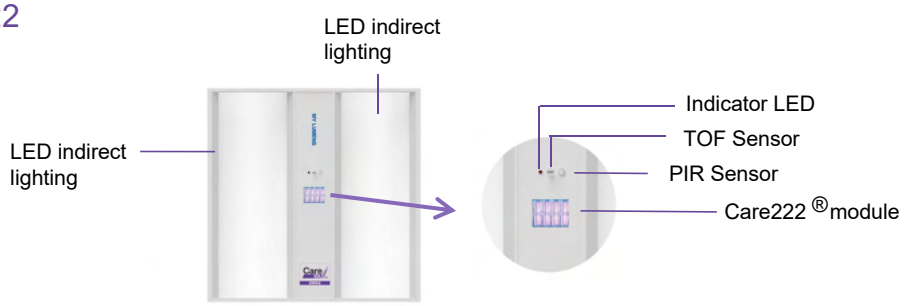
4. The time required for virus disinfection is calculated by the peak irradiance in the irradiated area

5. Reference: Buonanno, et al.,Sci. Rep.10,10285(2020)

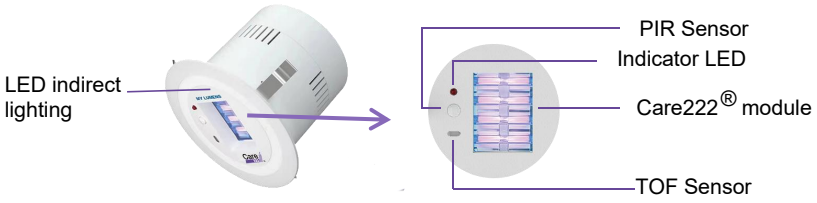
6. Reference: Kitagawa, et.al (2020) DOI:https://doi.org/10.1016/j.ajic.2020.08.022

Details view

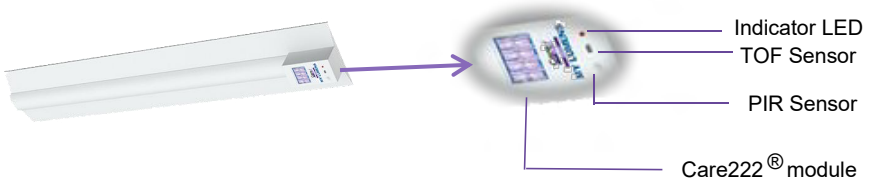
Lunar222



Downlight222



Baselight222



A vast variety of viruses and bacteria can be disinfected

Domain	Species	
Bacteria	MRSA	Methicillin-resistant Staphylococcus aureus
	Pseudomonas aeruginosa	Pseudomonas aeruginosa
	Escherichia. coli O157	Escherichia coli O-157
	Salmonella typhimurium	Salmonella typhimurium
	Campylobacter jejuni	Campylobacter
	Bacillus subtilis	Bacillus subtilis Vegetative cell
	Bacillus Cereus	Bacillus cereus
	Bacillus subtilis	Bacillus subtilis Spore
	Clostridium difficile	Clostridium
Yeasts and filamentous fungi	Candida albicans	Candida
	Penichillium expansum	Penicillium
	Aspergillus niger	Aspergillus niger (black mold) Hypha Spore
Virus	MS2	Bacteriophages MS2
	Feline Calicivirus	Feline calicivirus
	Influenza virus	Influenza viruses
		H1N1, A/PR/8/34 ATCC VR-1469 H1N1, A/PR/8/34
	Alphacoronavirus Feline enteric coronavirus,	Feline enteric coronavirus WSU 79-1683
	Human coronavirus,	Human coronaviruses 229E 229E VR-740
	Betacoronavirus Human coronavirus,	Human coronaviruses OC43 OC43 VR-1558
	SARS-CoV-2,	Novel coronaviruses 2019-nCov/Japan/AI/I-004/2020

List of target pathogens

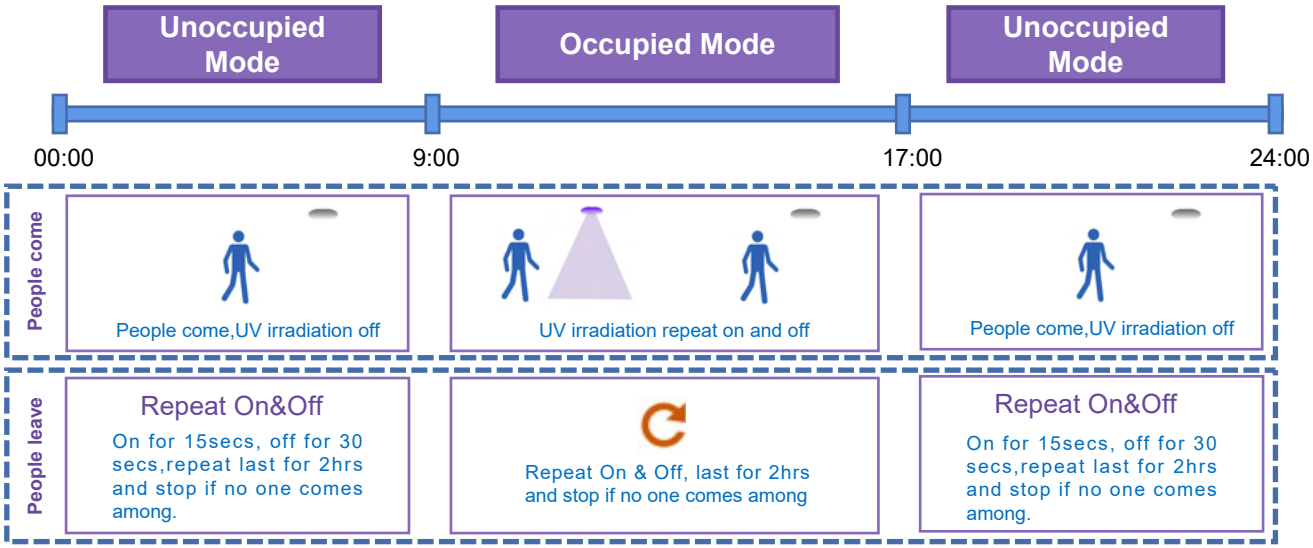
※UV light works against microorganism which has RND/DNA such as viruses, bacteria and yeasts.

Attention

※Not all bacteria and viruses are effective

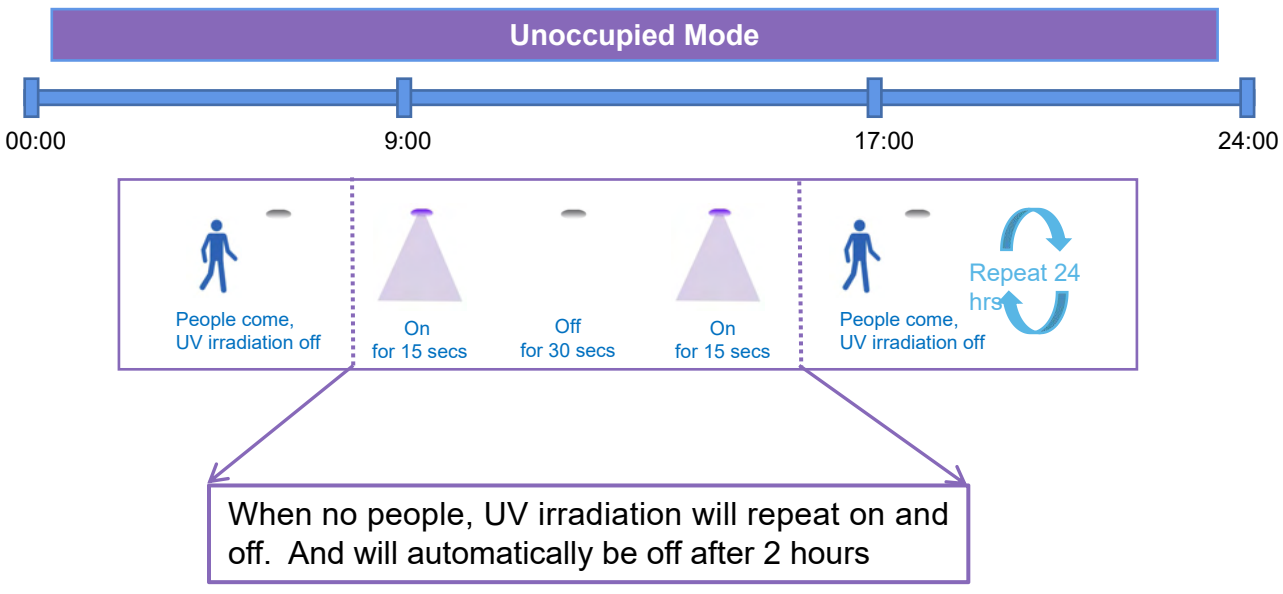
Operation instruction

Occupied mode (8 hours)



(1) Repeated operation of on and off	Installation height 3.0m: Running for 15 seconds, stop for 200 seconds
	Installation height 4.0m: Running for 15 seconds, stop for 80 seconds
(2) The timer starts to accumulate the time when the setting time begins, When time accumulation up to 8 hours in occupied state, the UV module will change to unoccupied state .	

Unoccupied mode



Attention for UV irradiation

●Those who are highly sensitive to light or pregnant shuold take the same measures to limit UV exposure as in daily life.

●As with any lighting fixtures,avoid looking at the light source directly with close distance.(Looking at light source directly may result in eye discomfort)

●The threshold limit value, or TLV, of 222nm ultraviolet light that a person can be exposed to per day has been set by the ACGIH(American conference of Governmental Industrial Hygienist) and JIS Z 8812(Measuring Methods of Eye-hazardous Ultraviolet Radiation) at or below 22mJ/cm2)(up to 8 hours per day).Ensure that exposure is within this limit when installing and using Care222 devices. When using Artemis far UVC products, please follow the instruction in the manual.

Reference

Science Reports

August 12, 2020
Exploratory clinical trial on the safety and bactericidal effect of 222-nm ultraviolet C irradiation in healthy humans
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0235948

April 7, 2020
Repetitive irradiation with 222nm UVC shown to be non-carcinogenic & safe for sterilizing human skin
https://www.kobe-u.ac.jp/research_at_kobe_en/NEWS/collaborations/2020_04_07_01.html

Februry 9, 2018
Far-UVC light: A new tool to control the spread of airborne-mediated microbial diseases
https://www.nature.com/articles/s41598-018-21058-w

More information: www.faruvclite.com/care222-2 / www.care222.com

Specification

			
Model	**Lunar222**	**Downlight222**	**Baselight222**
Input voltage / Frequency	AC100～240V / 50/60Hz		
Power consumption	45W	25W	60W
Luminous flux/Color temperature/ Color rendering index	3600lm / 5000K / Ra80	800lm / 5000K / Ra80	5900lm / 5000K / Ra80
LED lifespan	40,000hrs		
Care222 module lifespan	3000hrs		
External dimensions	595x595x100mm	Φ170×121.5mm	1260×120mm
Weight	4.3Kg	1.45Kg	2.7Kg~3.5Kg
Operation mode	occupied mode (ceiling height 3m or 4m) or unoccupied mode		
Lighting mode	LED lighting & UV irradiation / UV irradiation only / LED lighting only can be operated by a switch		
Reflective material	Ultra-fine foamed light reflective material (MCPET) from Furukawa Electric of Japan		
Wavelength/UV intensity	222nm / 2.5mW/m2(D=50mm)		

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