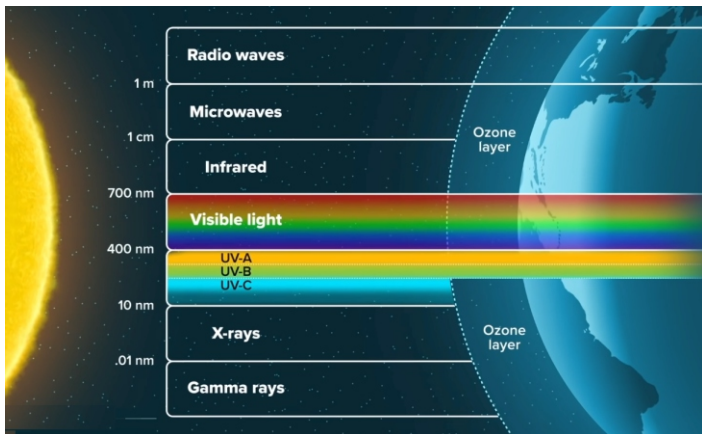




ULTRAVIOLET DISINFECTING LAMPS CATALOGUE

V1.5

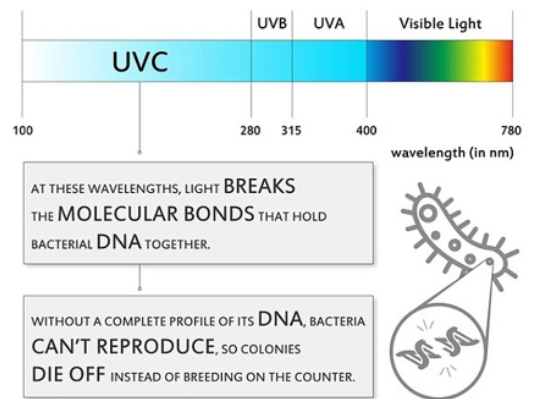
UNDERSTANDING GERMICIDAL NATURE OF UV LIGHT



Ultraviolet light (UV) is part of the electro-magnetic spectrum emitted by Sun. Ultraviolet light is grouped in 3 categories, based on light wavelength in range between 10nm and 400nm - UV-A, UV-B and UV-C. Only UV-A and UV-B reaches earth surface, but UV-C of 200nm to 280nm is blocked by the Ozone layer

The range between 200nm to 280nm is the most effective sterilizing range and called the Germicidal bandwidth, as damaged organisms can't replicate (maximum germicidal effectiveness at 265nm). Cell membranes and DNA breakdown when exposed to UV-C light

UV-C technology is used in hospitals, buildings, schools, food processing facilities for over a century for disinfecting air, water and surfaces. This proven technology is extensively used as an effective and sustainable disinfecting solution



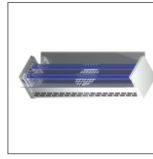
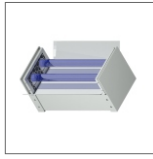
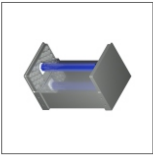
Infectious bacteria, germs and viruses expelled during coughing, talking, sneezing can remain airborne in a room for hours after particle generation. This poses a risk to people living in or entering into the contaminated area. The effectiveness of a disinfection method based on UV-C radiation is directly connected to the dosage used. Low intensity over a long time period can provide same disinfecting effect as high intensity during a short duration. The simpler a microorganism is formed, the easier it can be inactivated by UV irradiation. This is why viruses or bacteria in general can be much more easily destroyed than complex microorganisms such as yeasts and vegetative fungi

CERBERUS© range of Ultraviolet Germicidal Irradiation (UVGI) lamps designed for disinfection of indoor air and surfaces. UVGI lamps particularly useful for areas with poor ventilation and considered as an important element in indoor airborne infection control

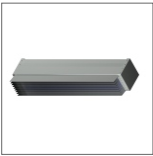
CERBERUS© range locally designed and manufactured , using high quality components from recognised suppliers

Contents

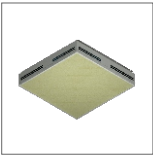
UVC surface lamps



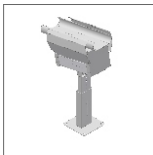
UVC wall lamps



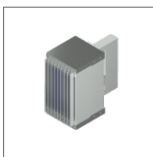
UVC ceiling lamps



UVC escalator



hand held



invisible wall



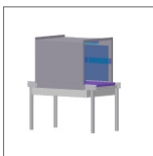
UVC Cube



UVC Vehicle



UVC conveyer tunnel



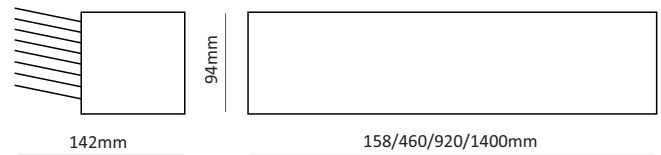
CERBERUS UVC WALL LAMP



Cerberus Wall is open type lamp for wall installations, designed for upper room free-flowing-air disinfection. UV-C irradiation is emitted above the horizontal plane, which forms the bottom of the upper room volume, through upwards focussed louvres. To prevent damage to skin and retina recommended installation height is no less than 2,4m off the ground level



Operating Voltage 220 ~240VAC



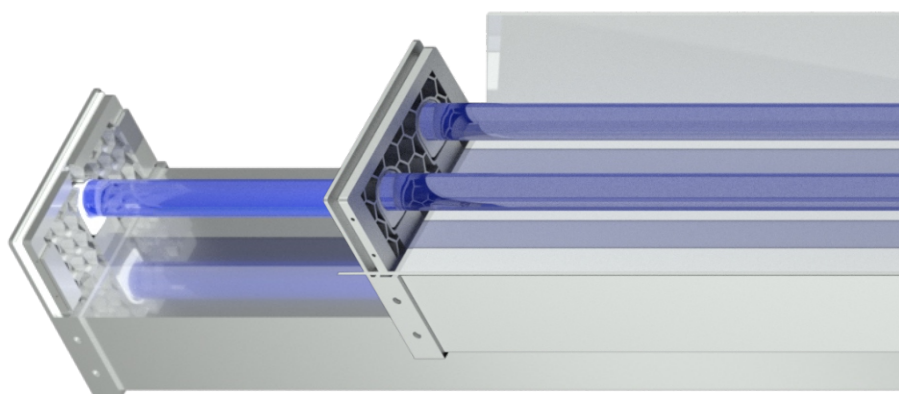
Model	Power	Radiant Flux	Coverage	Airflow	Dimensions	Product Code
Cerberus Wall 5	4.5W	0.9W @ 254nm	Up to 9m ²	-	92 x 94 x 158mm	CW.T5.1x4.5
Cerberus Wall Fan 5	7W	0.9W @ 254nm	Up to 9m ²	68 m ³ /h	92 x 94 x 158mm	CWF.T5.1x4.5
Cerberus Wall 9	9W	1.8W @ 254nm	Up to 12m ²	-	92 x 94 x 158mm	CW.T5.2x4.5
Cerberus Wall 25	25W	7W @ 254nm	Up to 16m ²	-	92 x 94 x 460mm	CW.T8.1x25
Cerberus Wall Fan 25	30W	7W @ 254nm	Up to 16m ²	136 m ³ /h	92 x 94 x 460mm	CWFx2.T8.1x25
Cerberus Wall 50	50W	14W @ 254nm	Up to 20m ²	-	92 x 94 x 460mm	CW.T8.2x25
Cerberus Wall Fan 50	56W	14W @ 254nm	Up to 20m ²	136 m ³ /h	92 x 94 x 460mm	CWFx2.T8.2x25
Cerberus Wall 75	75W	21W @ 254nm	Up to 30m ²	-	92 x 94 x 1400mm	CW.T8.3x25
Cerberus Wall Fan 75	85W	21W @ 254nm	Up to 30m ²	204 m ³ /h	92 x 94 x 1400mm	CWFx3.T8.3x25
Cerberus Wall 100	100W	28W @ 254nm	Up to 40m ²	-	92 x 94 x 920mm	CW.T8.4x25
Cerberus Wall Fan 100	106W	28W @ 254nm	Up to 40m ²	136 m ³ /h	92 x 94 x 920mm	CWFx2.T8.4x25
Cerberus Wall 150	150W	42W @ 254nm	Up to 50m ²	-	92 x 94 x 1400mm	CW.T8.6x25
Cerberus Wall Fan 150	160W	42W @ 254nm	Up to 50m ²	204 m ³ /h	92 x 94 x 1400mm	CWFx3.T8.6x25

ULTRAVIOLET UVC RANGE



CERBERUS UVC SURFACE LAMP

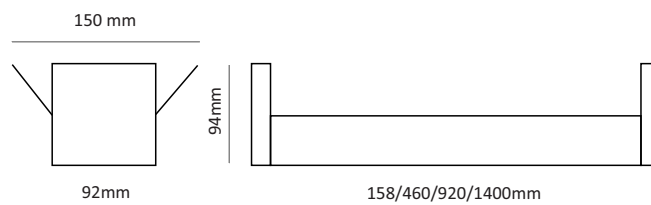
Cerberus® UV-C Surface is open type lamp for surface installation (wall, ceiling), designed for open space free-flowing air and surface disinfection. UV-C irradiation is emitted above the horizontal plane or directed by the reflector. Installed on the wall or ceiling, exposing UV-C light to objects below. Ideal for overnight surfaces (floor, walls, furniture and any other objects exposed to the light) disinfection, replacing Fumigation process



Safety measures to be taken when using this lamp to avoid exposure (movement sensors and/or timers switching ON/OFF lamp)



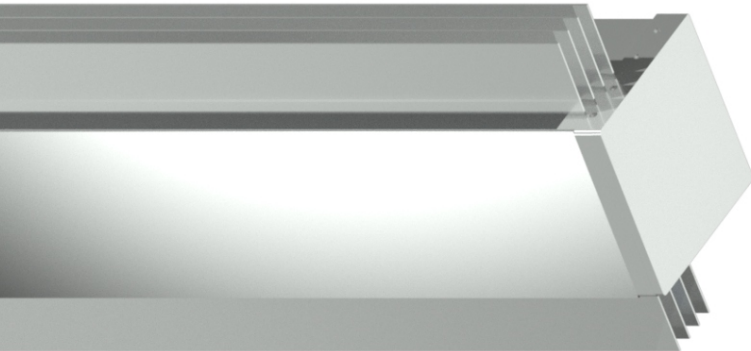
Operating Voltage 220 ~240VAC



Model	Power	Radiant Flux	Coverage	Airflow	Dimensions	Product Code
Cerberus Surface 5	4.5W	0.9W @ 254nm	Up to 9m ²	-	92 x 94 x 158mm	CS.T5.1x4.5
Cerberus Surface Fan 5	7W	0.9W @ 254nm	Up to 9m ²	68 m ³ /h	92 x 94 x 158mm	CSF.T5.1x4.5
Cerberus Surface 9	9W	1.8W @ 254nm	Up to 12m ²	-	92 x 94 x 158mm	CS.T5.2x4.5
Cerberus Surface 25	25W	7W @ 254nm	Up to 16m ²	-	92 x 94 x 460mm	CS.T8.1x25
Cerberus Surface Fan 25	30W	7W @ 254nm	Up to 16m ²	136 m ³ /h	92 x 94 x 460mm	CSFx2.T8.1x25
Cerberus Surface 50	50W	14W @ 254nm	Up to 20m ²	-	92 x 94 x 460mm	CS.T8.2x25
Cerberus Surface Fan 50	56W	14W @ 254nm	Up to 20m ²	136 m ³ /h	92 x 94 x 460mm	CSFx2.T8.2x25
Cerberus Surface 75	75W	21W @ 254nm	Up to 30m ²	-	92 x 94 x 1400mm	CS.T8.3x25
Cerberus Surface Fan 75	86W	21W @ 254nm	Up to 30m ²	204 m ³ /h	92 x 94 x 1400mm	CSFx3.T8.3x25
Cerberus Surface 100	100W	28W @ 254nm	Up to 40m ²	-	92 x 94 x 920mm	CS.T8.4x25
Cerberus Surface Fan 100	106W	28W @ 254nm	Up to 40m ²	136 m ³ /h	92 x 94 x 920mm	CSFx2.T8.4x25
Cerberus Surface 150	150W	42W @ 254nm	Up to 50m ²	-	92 x 94 x 1400mm	CS.T8.6x25
Cerberus Surface Fan 150	160W	42W @ 254nm	Up to 50m ²	204 m ³ /h	92 x 94 x 1400mm	CSFx3.T8.6x25

ULTRAVIOLET UVC RANGE

CERBERUS CEILING UVC LAMP

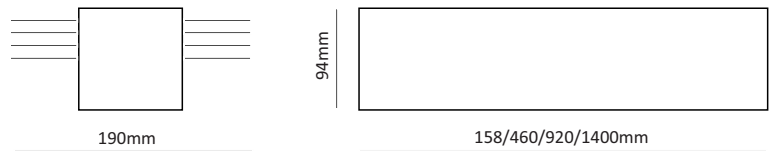


Cerberus® Ceiling UV-C Lamp is an open type device for ceiling installations, designed for air re-circulation and upper room free-flowing air disinfection. Dual function of sideways irradiation via open louvers for the upper room disinfection and active inflow of air from below area with an immediate disinfection of passing air

Installed at minimum height of 2.7m (average ceiling height in every building) it completely safe for people below. Device designed to be used during a day with people present, constantly circulating and disinfecting air in premises.



Operating Voltage 220 ~240VAC

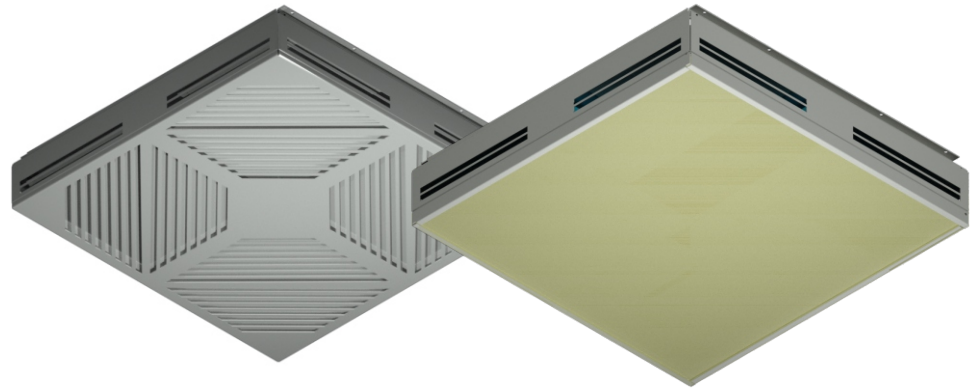


Model	Power	Radiant Flux	Coverage	Airflow	Dimensions	Product Code
Cerberus Ceiling 5	4.5W	0.9W @ 254nm	Up to 9m ²	-	190 x 94 x 158mm	CC.T5.1x4.5
Cerberus Ceiling Fan 5	7W	0.9W @ 254nm	Up to 9m ²	68 m ³ /h	190 x 94 x 158mm	CCF.T5.1x4.5
Cerberus Ceiling 9	9W	1.8W @ 254nm	Up to 12m ²	-	190 x 94 x 158mm	CC.T5.2x4.5
Cerberus Ceiling 25	25W	7W @ 254nm	Up to 16m ²	-	190 x 94 x 460mm	CC.T8.1x25
Cerberus Ceiling Fan 25	30W	7W @ 254nm	Up to 16m ²	136 m ³ /h	190 x 94 x 460mm	CCFx2.T8.1x25
Cerberus Ceiling 50	50W	14W @ 254nm	Up to 20m ²	-	190 x 94 x 460mm	CC.T8.2x25
Cerberus Ceiling Fan 50	56W	14W @ 254nm	Up to 20m ²	136 m ³ /h	190 x 94 x 460mm	CCFx2.T8.2x25
Cerberus Ceiling 75	75W	21W @ 254nm	Up to 30m ²	-	190 x 94 x 1400mm	CC.T8.3x25
Cerberus Ceiling Fan 75	86W	21W @ 254nm	Up to 30m ²	204 m ³ /h	190 x 94 x 1400mm	CCFx3.T8.3x25
Cerberus Ceiling 100	100W	28W @ 254nm	Up to 40m ²	-	190 x 94 x 920mm	CC.T8.4x25
Cerberus Ceiling Fan 100	106W	28W @ 254nm	Up to 40m ²	136 m ³ /h	190 x 94 x 920mm	CCFx2.T8.4x25
Cerberus Ceiling 150	150W	42W @ 254nm	Up to 50m ²	-	190 x 94 x 1400mm	CC.T8.6x25
Cerberus Ceiling Fan 150	160W	42W @ 254nm	Up to 50m ²	204 m ³ /h	190 x 94 x 1400mm	CCFx3.T8.6x25

ULTRAVIOLET UVC RANGE



CERBERUS UVC RECIRCULATION LAMP

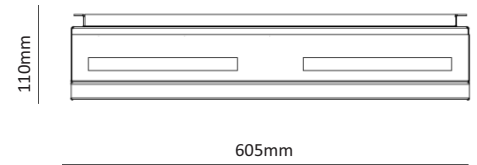


UVC and combined UVC+ LED Light device designed to fit standard 600mm x 600mm suspended ceilings. Dual function with sideways UVC irradiation via open louvers for the upper room disinfection and active inflow of air from below area with an immediate disinfection, as air flows through the UVC lamp with a 900mW/s radiant flux.

Optional LED ceiling panel 595mm x 595mm x 12mm installed at the front surface.



Operating Voltage 220 ~240VAC



Model	Power	Radiant Flux	Coverage	Airflow	Dimensions	Product Code
Cerberus Sky	39W	7.2W @ 254nm	Up to 36m ²	68 m ³ /h	605 x 605 x 110mm	CSky.T5.8x4.5
Cerberus SkyLite - model with the ceiling panel (38W/3800lm LED 4000K)						CSkyL.T5.8x4.5

CERBERUS UVC ESCALATOR LAMP

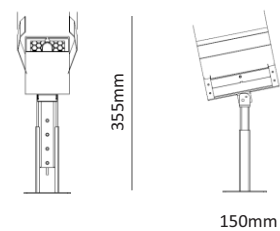


Cerberus Escalator is open type lamp for disinfection of rotating rubber escalator belt. Surface type of installation with adjusted height and angle. UVC irradiation contained inside of the reflector, surrounding belt and sterilising it from front, side and back sides.

Full sterilisation effect achieved in just one rotation



Operating Voltage 220 ~240VAC



Model	Power	Radiant Flux	Disinfection time	Dimensions	Product Code
Cerberus Escalator 5	4.5W	0.9W @ 254nm	1 sec	92 x 94 x 158mm	CE.T5.1x4.5

ULTRAVIOLET UVC RANGE



CERBERUS UVC HANDHELD LAMP

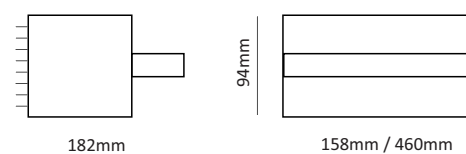
Cerberus® Handheld UV-C lamp for manual disinfection of surfaces, groceries or any other objects in close proximity. Level of UV-C irradiation at 5cm - 10cm is sufficient for fast disinfection of surfaces on which ultraviolet light is exposed

Ideal for replacement of chemical based disinfectants, as it can be used on appliances, furniture, keyboards, computers, phones, papers (patient files, scripts), etc., e.g. where wet liquid solution can cause damage

Safety measures to be taken when using this lamp - do not point to people or animals, avoid contact with exposed skin or eyes

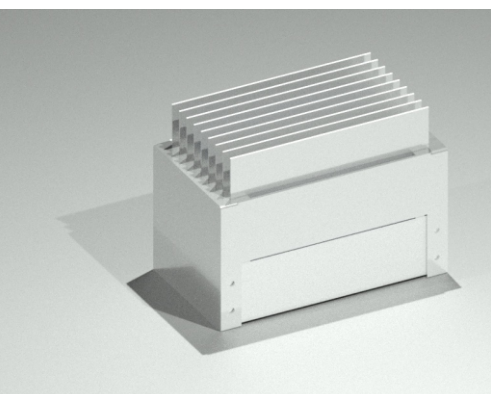


Operating Voltage 220 ~240VAC



Model	Power	Radiant Flux	Disinfection time	Dimensions	Product Code
Cerberus Handheld 9	9W	1.8W @ 254nm	3 - 5 sec	182 x 94 x 158mm	CH.T5.2x4.5
Cerberus Handheld 25	25W	7W @ 254nm	1 sec	182 x 94 x 460mm	CH.T8.1x25

CERBERUS UVC INVISIBLE WALL LAMP



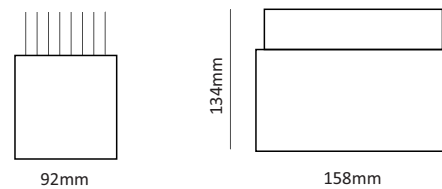
Cerberus® Invisible Wall UV-C lamp (patent pending) is a desk based device designed to separate parties with an “invisible wall” of disinfecting UV-C light, as well as with vertical curtain of air flow. Any contagious particles (bacteria, viruses) expelled by potentially infected person on the other side of the table and floating in the air, will be destroyed or severely weakened at the moment of UV-C light crossing. Particles will also be pushed upwards with the flow of air.

Device creates narrow vertical curtain in vertical projection, with about 170 degree coverage sideways, with the maximum efficiency at radius of about 30cm. Built-in fan constantly circulate and disinfect air from both sides (suck from the sides and push cleaned air upwards)

Safety measures to be taken when using this lamp, to avoid accidental direct exposure to skin and eyes (don't look inside). Recommended distance of 30cm from the device is advisable



Operating Voltage 220 ~240VAC



Model	Power	Radiant Flux	Disinfection time	Airflow	Dimensions	Product Code
Cerberus Invisible Wall Fan	7W	0.9W @ 254nm	1 sec	68 m ³ /h	92 x 134 x 158mm	CIWF.T5.1x4.5

ULTRAVIOLET UVC RANGE



CERBERUS UVC VEHICLE

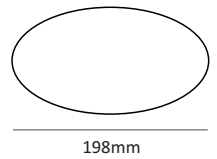
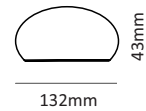


Cerberus UV-C LED Vehicle device designed to constantly circulate and disinfect air in an enclosed vehicle cabin, following same design principle as it happens in commercial aircrafts. Passenger vehicle's air conditioning systems not that much sophisticated comparing to modern aircrafts in terms of air circulation and disinfection.

UV-C Device, mounted on the ceiling will constantly rotate and disinfect air at rate similar to commercial aircrafts. Air flows into the device from below area at rate of 68 m³ an hour, instantly disinfected using high power ultraviolet LEDs and is sent sideways in a circular motion, exiting at floor level. Device completely safe for people below, which was confirmed by testing conducted at NMISA (National Metrology Institute of South Africa)



Operating Voltage 12/24VDC



Model	Power	Radiant Flux	Airflow	Dimensions	Product Code
Cerberus Vehicle	8,3W	0,144W @ 275nm	68 m ³ /h	132 x 198 x 43mm	CV.6xLED

Easy installation with plug-in into cigarette charger (12V version) or connected directly to vehicle electrical system (12V/24V)

2 devices installed inside of the standard Toyota Quantum minibus taxi vehicle, will circulate and disinfect air about 15 times per hour, or every 4 minutes



ULTRAVIOLET UVC RANGE



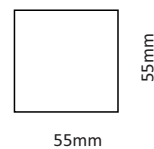
CERBERUS UVC KRIBS CUBE

Cerberus desk based UVC LED lamp for local air recirculation disinfection

Just plug-in into USB port of any computer or vehicle



Operating Voltage 5~12VDC



Model	Power	Radiant Flux	Disinfection time	Airflow	Dimensions	Product Code
Cerberus UVC Cube	3W	0,024W @ 275nm	25 sec	11,4 m³/h	55 x 55 x 55mm	CC.2xLED

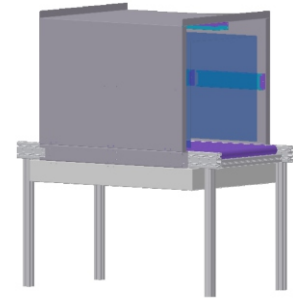
DESIGNED & MADE
IN SOUTH AFRICA



PURE LIGHT LED PRODUCTS
PURE LIGHT GROUP COMPANY

CERBERUS UVC CONVEYER TUNNEL LAMP

Cerberus Conveyor UVC device designed for installation on the moving conveyers, to disinfect items moving on the conveyer belt



Operating Voltage 220 ~240VAC

Model	Power	Radiant Flux	Disinfection time	Conveyer Speed	Max. items Size	Product Code
Cerberus Conveyer 375	375W	105W @ 254nm	<1 sec	1m/sec	600mm x 600mm x 600mm	CC.T8.375

QUICK SELECTION AND INSTALLATION GUIDE

Introduction - guidance provided is a compilation of current best practice and knowledge regarding the design, development and operation of indoor room air ultraviolet germicidal irradiation (UVGI) systems for reducing the rate of transmission of airborne diseases. Intended to help engineers, installers and other professionals responsible for specifying, designing or implementing Ultraviolet Germicidal Irradiation (UVGI) systems

Safety - UV-C has a lower skin penetration depth, thus does not easily cause skin irritation or cancers when compared to UV-A and UV-B found in sunlight. UV-C does cause eye irritation at high exposure levels. Therefore, UVGI in occupied rooms should not exceed an exposure dose of 6 mJ/cm² (for mercury vapour lamps at 254 nm) and 3.8 mJ/cm² (at 265nm) per 8h. The potential of high UV intensities being reflected from certain materials (e.g. reflectors of regular open luminaires, windows, exposed ducting and metallic or high gloss architectural finishes) into the occupied portion of the room must be considered by designers and users. During any work in the upper room or with open UVGI devices, eye and skin protection should be worn

Upper room UVGI - these devices irradiate air and inactivate pathogens in the unoccupied zone of the upper room. During normal air circulation the air exchange between the upper and lower room, reduces the concentration of viable airborne pathogens in the whole room

Open type UVGI disinfection attempts to sterilise room surfaces by exposing the entire room volume to high UV fluence levels

Design - The UVGI design life cycle should include system planning, space evaluation, design and review, control of design and commissioning documents. Interference from obstructions (light fixtures, beams, ductwork, piping, furniture, equipment or non-prescribed lighting diffusers) to airflow around the device or radiation from the device must be taken into account. For surface disinfection, direct UVGI exposure can sterilize any surface given enough time. The radiant energy, or dosage, delivered to a surface is dependent on UV intensity, the duration of exposure, and the lamp to surface distance. UV lamps should be properly "sized" for the application

It is strongly recommended that the room be labelled with clear and informative signage to indicate the TB related occupancy limits with the UV system turned on and turned off

Lamp aging - A 100 hour lamp burn-in is recommended prior to device characterisation or system verification tests

Factors affecting performance - UVGI disinfection performance is dependent on good air movement rates either through natural convection or mechanically aided (e.g. paddle fan). The effectiveness may be reduced if the mechanical ventilation rates in a room are increased together with equivalent room air mixing. However, as ventilation is a primary environmental control against indoor airborne transmission, its maximum capacity within the considered area should be determined and targeted before implementing a UVGI solution

Installation - The device must not be able to tilt or swing under normal operation. The minimum installation height of the lower horizontal plane of any open UVGI device to finished floor is 2,4m. Installation to be carried out by certified electrical professional

Additional UVC Safety Considerations:

- Dispose of used lamps in accordance with regulations regarding mercury content
- Air ducts should be fully enclosed to prevent UV leakage
- All access doors and panels should have multi-language warning labels posted on the outside
- Interlocks should be installed such that opening any door to a UV lamp chamber will turn off the lamps
- The UV lamp chamber should have a viewport large enough for the UV state to be viewed from a distance outside the chamber
- Educate installation and maintenance workers on equipment hazards and safe practices

References

IMPLEMENTATION of UPPER ROOM UVGI - AN ABRIDGED GUIDE. Rev 6, Jan 2019

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