# UV-C AIR DISINFECTION & LIGHTING SOLUTION

99.9% EFFECTIVE AGAINST COVID-19 AND OTHER VIRUSES

## KILLS

**CORONA VIRUS** 

AND AIRBORNE BACTERIA, VIRUSES AND MULTIDRUG RESISTANT ORGANISMS



UVINTX

- www.dtlenergysolutions.com
- www.viracleanusa.com



### **UVC AIR DISINFECTION & LIGHT PANEL**

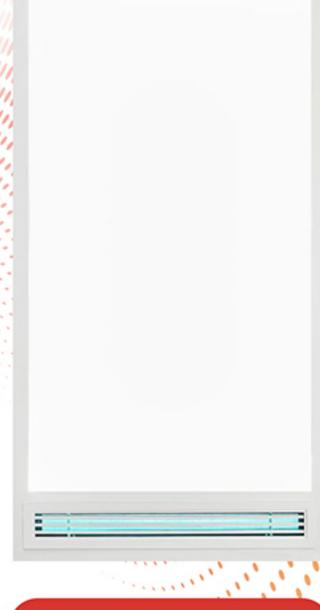
#### **KILLS CORONAVIRUS**

- ☑ Ozone free
- Disinfect a room in less than 25 minutes
- Safe to use while room is occupied
- 99.9% Kill rate of bacteria / viruses
- ☑ Eradicate MDRO's 24/7/365

#### **BASE APPLICATIONS**

The 101 UV-C & Light Panel can be used in 90% of all locations to help keep people safe from life threatening viruses and bacteria

- Municipalities
- Universities
- Schools / Daycares
- Hospitals
- Senior Assisted Living Facilities / Senior Centers
- Residential / Commercial / Industrial Offices
- Retail / Outlet Stores
- Fitness / Well Being Facilities



**UE28 SERIES** 

#### **FOUR (4) CRITICAL MEASUREMENTS**

There are four key factors to determine effective UV-C Lighting disinfection of airborne pathogens.

#### (1) EXPOSURE TIME

The 101 UV-C & Light Panel only requires 0.52 seconds of exposure to damage bacteria and viruses DNA / RNA. Once the DNA / RNA is damaged the pathogen no longer has the ability to replicate, thus rendering it sterile.

#### (3) UVC WAVE LENGTH

Our fixtures generate UV-C at 253.7nm which is the optimal UV-C wave length to sterilize bacteria or viruses according to 99% of publicly available studies.

#### 2) JOULE INTENSITY

CDC studies have shown since the 1970's that 10.6 mJ/cm2 is required to kill coronavirus. The most basic UVENTX model currently available generates 13355.52 mJ/cm2, which is more that 30x CDC studies.

#### (4) AIR CHANGES PER HOUR (ACH)

Rooms require constant circulation of clean air to keep human beings healthy and the CDC recommends at least 2 air changes per hour. Our 101 UV-C & Light Panel at minimal recommendations circulates the room air 2.5x per hour and surpass the CDC recommendation by at least 20%.

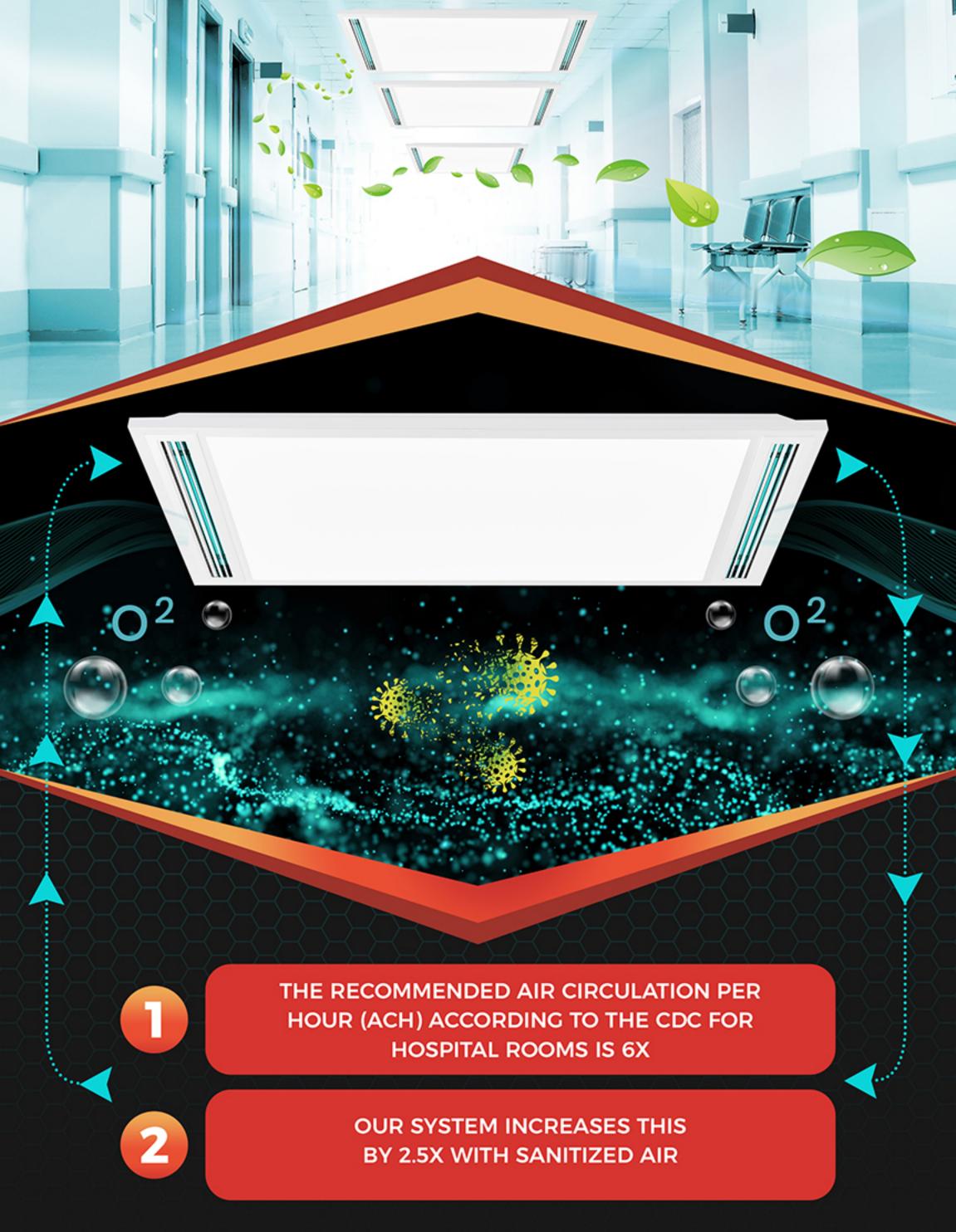












### LIGHTING SPECIFICATIONS

FIXTU	JRE		UV-C	
SKU	UE28	58020	58021	58022
Wattage	40W	41W	82W	123W
Efficiency	125lm/W	16W(Output)	32W(Output)	48W(Output)
Lumens / Intensity	5000 lm	6677.76µW/cm2	13355.52µW/cm2	20033.28µW/cm2
Power Factor	≥0.9		N/A	
Voltage	AC 120-277V		Ballast AC 120-277V	
Frequency	50/60Hz		253.7nm @35%	
Lamp Current	Max.400mA	410MA	820mA	1.23A
Led Frequency	≥120Hz		N/A	
THD	≤20%		N/A	
Ripple Current	≤5%		N/A	
Ra	≥80		N/A	
R9	≥0		N/A	
SDCM	≤6		N/A	
Duv	≤0.006		N/A	
Beam Angle	110°		N/A	
Dimmable	1-10V		N/A	
Housing	Aluminum		Glass	
Optical Lens	Polycarbonate		Quartz	
Operating Temperature	77°F		40°F ~ 104°F	
Storage Temperature	-40°F ~ 185°F		-40°F ~ 185°F	
IP Rating	IP20		IP20	
Environment	Indoor		Indoor	
L70	≥50,000		≥12,000	
L90	≥36,000		≥8,000	
Warranty	5 Years		1 Years	
Certification	UL, DLC, RoHS, FCC, CE, FDA (Pending)		UL, RoHS, FCC, EPA	



UL (Underwriters Laboratories): Product safety certification



DLC (Design Lights Consort): Product energy efficiency, lighting quality and performance



RoHS (Restriction of Hazardous Substances): Detection of toxic and harmful substances in products



FCC (Federal Communications Commission): Electromagnetic compatibility, security of wired communication products



CE (European Conformity): Product Safety Certification



FDA (Food and Drug Administration): Testing of the impact of ionic and Nonionic radiation on human health and safety during the use of products



Protection Agency): Protect human health and natural environment

#### WAVELENGTH

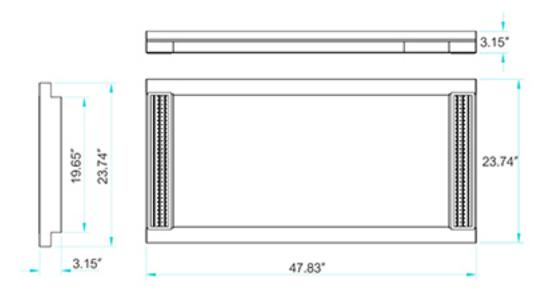
Low-pressure, mercury-arc germicidal lamps are specially designed to produce the highest amounts of UV radiation where 90% of energy is typically generated at 253.7nm. This radiation is very close to the peak of the germicidal effectiveness curve of 265nm, the most lethal wavelength to microorganisms.

#### WAVELENGTH

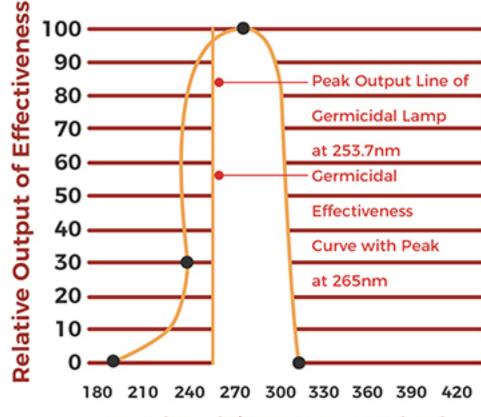
The air is drawn into a sheilded air disinfection chamber where the UV-C germicidal bulbs then bombard the air with 254nm at over 12,000nJ/cm2/s for 0.52s and thus inactivating harmful pathogens.

Note: The illustration is for reference purposes only and does not represent the full design of the product.

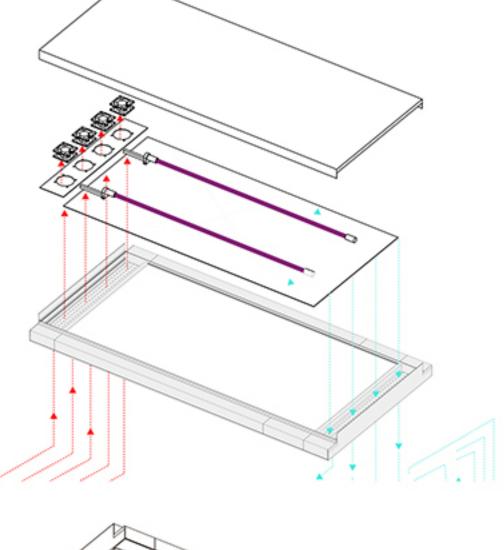
#### **DIMENSIONS**

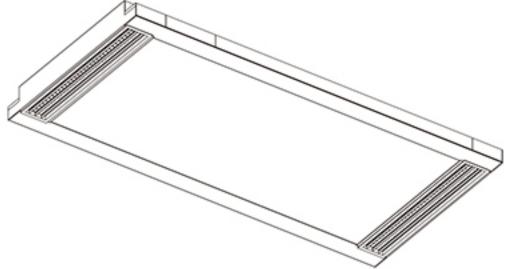


#### LAMP OUPUT VS. EFFECTIVENESS

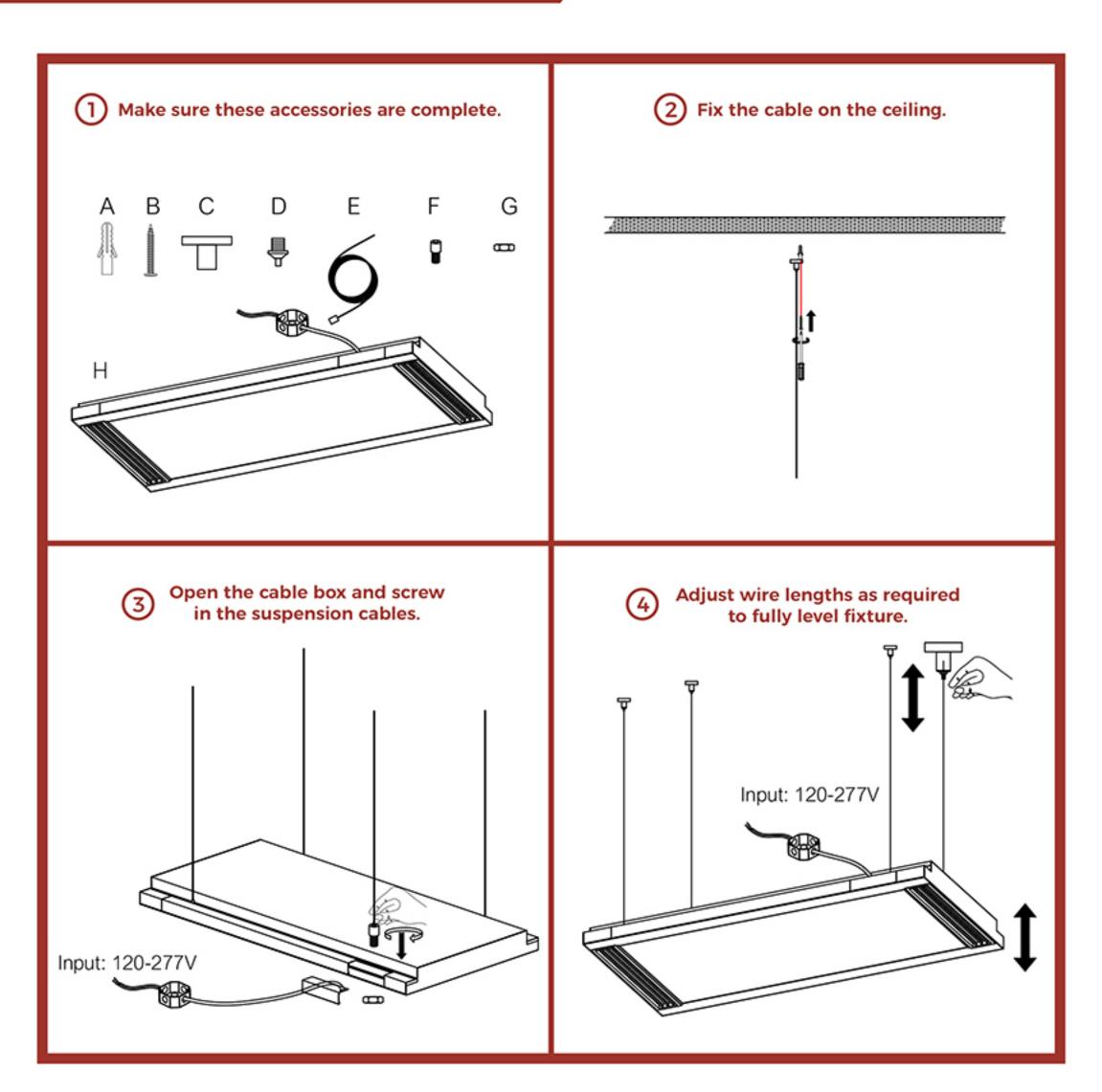


Wavelength in Nanometers (nm)





#### **INSTALLATION INSTRUCTIONS**



#### CALCULATING HOW MANY YOU NEED

Step 1. Calculate your room dimensions Measure the length(I), width(w) and height(h) of the room and multiply the length by the width and height. This will give you your room's cubic feet (ft<sup>3</sup>).

Step 2. Take the room's ft<sup>3</sup> and divide by 36 for the ft<sup>3</sup> and then by 25 for the ACH value. Round the answer up to the nearest whole number. The answer is how many fixtures you'll need per room.

Note: Due to Covid-19 restrictions and guidance from the CDC, we do not recommend more than 1 person occupying less than 132ft². In these circumstances, change the ACH value in the calculations above to 15.

#### **Example:**

Cubic feet (ft3) = 10'(L) x12'(W) x 8'(H) = 960 ft3

36 (the ft<sup>3</sup> of air flow per minute)

15 (minutes per air circulations/ACH)

1.77 (fixtures recommended)

2 (rounded up, fixtures recommended)

#### THE TECHNOLOGY

Ultraviolet (UV) light disinfection began as early as the mid-20th century. It is a proven and secure technology that has been researched thoroughly by the FDA and the CDC. UV technology is currently used for air, drinking water, waste water, fruits and vegetables as well as medical sterilization cabinets.

#### WHAT IS UV-C?

Ultraviolet C (UV-C) is a spectrum of ultraviolet wavelength from 200 to 280nm.

#### IS EXPOSURE TO UVC SAFE?

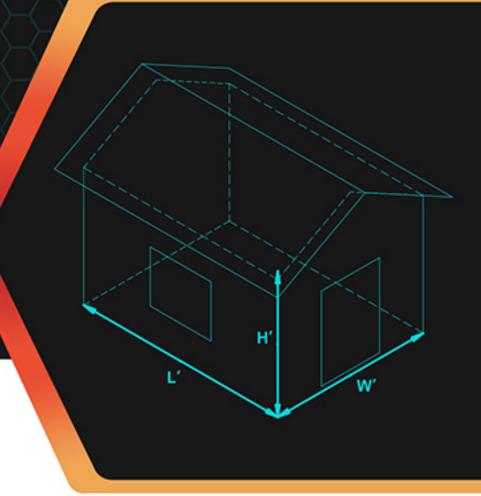
You are not exposed to UV-C when you use our 101 UV-C Light Panel since the UV-C is completely shielded within the disinfection chamber behind the unit and therefore the fixture is safe to use even when a room is occupied. Direct UV-C exposure can itself be very hazardous to human health and is not recommended.

Note: The sun generates massive amounts of UV-C directed at the earth but most of it is absorbed by the atmosphere.

## CAN YOU PROVE YOU CAN KILL PATHOGENS AND IS THIS FIXTURE SAFE?

Ultraviolet germicidal irradiation is thoroughly studied by the CDC and the 101 UV-C Light Panel is built according to CDC technical studies and is UL certified for safety.

\* Please see: https://www.fda.gov/medical-devices/coronavrus-covid-19-and-medical-devices/uv-lights-and-lamps-ultraviolet-c-radiation
-disinfection-andcoronavirus





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