#### E SOLID STATE LIGHTING INC.

**SILENTAIRE** by ETi Solid State Lighting

## Active Plasma Treatment Technology

For more information visit www.etissl.com August 2022

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# The power of **Plasma Technology** for protection against viruses and bacteria.

#### Innovation

At ETi we are dedicated to developing innovative products that put your health and safety front and center. Innovation is the heart of everything we do. Our comprehensive portfolio of LED lighting products now includes a full line of disinfection lighting products. We're pioneering the introduction of UVC and Plasma Technology within lighting solutions, so together we can create spaces that continuously treat the air while occupied.

#### Fundamentals

There are three commonly encountered states of matter: solid, liquid, and gas. When a solid is heated, it transforms into a liquid and then from a liquid into a gas. If enough energy is applied to gas, it becomes an ionized gas known as plasma, which represents the fourth fundamental state of matter. The plasma contains reactive chemical species such as electrons, ions, neutral molecules, and atoms.

#### Technology

Our second generation of SilentAire fixtures utilize non-thermal "cold" plasma. SilentAire luminaires will use an internal circulation system to push and disperse plasma from our patent-pending plasma generator, filling the space with positive and negative ions that neutralize harmful pathogens, pollutants, and even odors.

ETi's plasma technology continually and proactively treats the air in occupied spaces at the source of contamination.

\*Ref.:https://mdpi-res.com/d\_attachment/ijms/ijms-20-05216/article\_deploy/ijms-20-05216.pdf



# Technology that works for you



#### **Space Treatment**

Providing a full range of comprehensive disinfection solutions to actively kill germs in residential and commercial applications.



#### **Complete Care**

Rooms can stay occupied while the lighting fixture is working in disinfection mode. Providing a safe space to shield your home, office, or business.



#### Full Protection

disinfecting the air.



#### **Plasma Technology**

Innovative integration of effective Plasma technology with LED lighting. Plasma ions disperse to actively kill airborne viruses and bacteria.



#### Live Safer, Healthier, and Easier

A hybrid lighting and air solution with a guiet built-in circulation system allows for use in occupied spaces with plug and play technology.



#### Kills up to 99.9% of Viruses and Bacteria Plasma has 99.9% removal rate against SARS-SoV-2 the virus that causes COVID-19, Influenza A virus H1N1: A/PR/8/34, and Staphylococcus albus after 2 hours of



Airborne particles are charged by the ions released by the plasma generator, causing them to cluster, be drawn to the plasma and destroyed. This ionized air that contains positively and negatively charged molecules attract and kill airborne germs on contact.

are neutralized as well.

State-of-the-art integrated circulation system for larger spaces, providing lighting options while continuously

use. Check product information for exact product testing.

Odorous gases and aerosols oxidize on contact with ions and



# High output LED lighting with active plasma disinfection technology

Every home or office can treat their air with integrated lighting.

Increasingly, we spend more time indoors, such as working from home or back at the office, schools, and shopping. Many of these places are troubled with harmful germs that float through the air, like the flu and pneumonia. These can be rendered harmless through air disinfection. These illnesses that are easily transmitted via the air can be minimized and the overall air quality can be improved with ETi's SilentAire solutions.





Incorporated right into your lighting, our fixtures can clean and recirculate treated air back into your space.

# **UVC and Plasma Technology Flat Panels**

Flat panel lighting with air disinfection treatment

The SilentAire flat panels combine traditional ambient illumination with two sealed internal UVC lamps and Plasma Technology generator. Sealed internal UVC disinfection chamber ensures zero direct UVC exposure. An extremely quiet circulation system pulls in ambient air and recirculates back purified air while releasing plasma ions to attract and kill viruses and bacteria on contact.

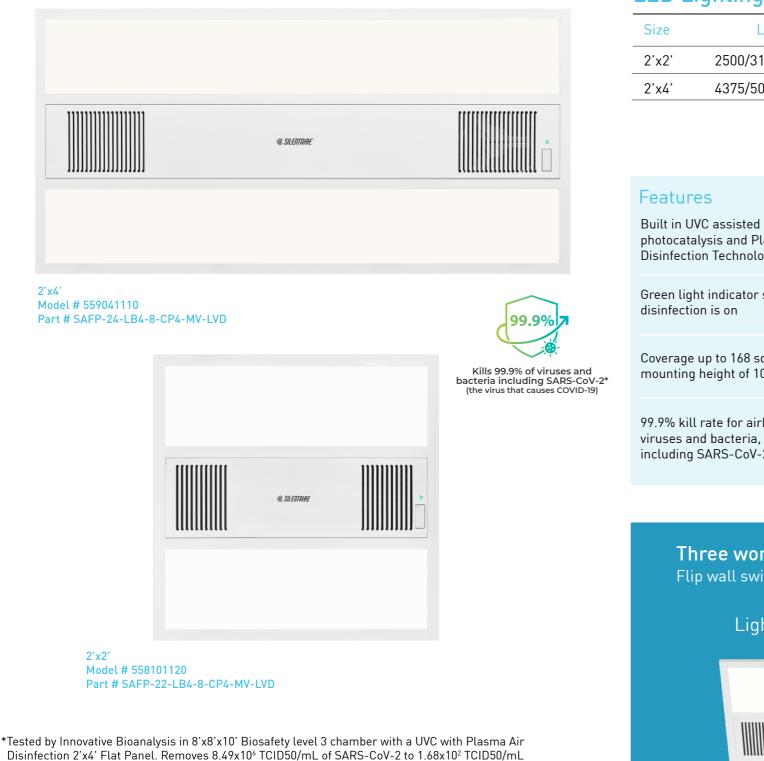
No special installation steps are needed to install and use SilentAire fixtures. Install as a regular luminaire and control the lighting and fan system by wall switch.



# **Ideal Applications**

# **UVC with Plasma Air Disinfection Flat Panels**

High output LED lighting with UVC & Active Plasma Treatment Technology



after 2 hours of operation, 99.998% virus gross reduction achieved. Tested by ILAC against Staphylococcus albus 8032 bacteria. Removed 99.9% of the bacteria from the air within 2 hours.

ED	Light	ing	

Size	Lumens	Watts	Color Temperature	CRI	Voltage	Dimming	Rated Life	CFM
2'x2'	2500/3125/3750/4350LM	101W	3000/3500/4000/5000K	80min	120-277V	0-10V	50,000hrs	20
2'x4'	4375/5000/5625/6250LM	260W	3000/3500/4000/5000K	80min	120-277V	0-10V	50,000hrs	28

photocatalysis and Plasma Disinfection Technology

Green light indicator shows

Coverage up to 168 sqft at a mounting height of 10ft

99.9% kill rate for airborne viruses and bacteria, including SARS-CoV-2\*

### Benefits

particles

easily

Easy Maintenance Plug and play

Reusable dust filter to

capture large airborne

Toolless front panel to

remove and clean filter

Coverage - ft<sup>2</sup>

Technology

Coverage - ft<sup>3</sup>

Mounting Height

Application Recommendations

Only for base recommendation Consult ETi for application scenarios

#### Three working modes to meet your needs

Flip wall switch On/Off/On within 3 seconds to change mode

#### Lighting + Disinfection

Disinfection Only









#### **Recommended Disinfection Guide**

	2'x2'	2'x4'
	UVC with Plasma	UVC with Plasma
	1,200	1,680
	120	168
	3m/10ft	3m/10ft
	15 pcs in 3500 ft²area	10 pcs in 3500 ft² area
s	SA: General = 1:2 based on 300 fc avg.	SA: General = 1:2 based on 300 fc avg.
ns.	Commercial	Commercial

Lighting Only



# SilentAire Plasma Technology **Canless Downlight**

Downlight with air disinfection treatment The SilentAire canless downlights combine traditional ambient illumination with an internal Plasma Technology generator. An extremely quiet circulation system pulls in ambient air and recirculates back purified air while releasing plasma ions to attract and kill viruses and bacteria on contact.

No special installation steps are needed to install and use SilentAire fixtures. Install as a regular luminaire and control the lighting and fan system by wall switch.



**Ideal Applications** 

# **Plasma Air Disinfection** 8" Canless Downlight

High output LED lighting with Active Plasma Disinfection Technology Model # 559011020 Part # SADL-DMJB-PL-LB3-9-CP5-MV-D-WH



viruses and bacteria\*



#### **LED Lighting**

Size	Lumens	Watts	Color Temperature	CRI	Voltage	Dimming	Rated Life	CFM
6"/8" Canless	900/1600/2000LM	23W	2700/3000/3500/4000/5000K	90min	120-277V	TRAIC only at 120V	50,000hrs	25

#### **Recommended Disinfection Guide**

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ng Height
ion nendations
recommendations.
or application



\*Virus test by intertek against Influenza A Virus H1N1. Bacteria test by ILAC against Staphylococcus albus 8032. Removed 99.9% of the virus and bacteria from the air within 2 hours.

Two working modes to meet your needs Flip wall switch On/Off/On under 3 seconds to change mode

#### Lighting + Disinfection





**LUMENBOOST** 



8" Downlight

Plasma

1,500

188

2.4m/8ft

2 pcs in a 400ft<sup>2</sup> area

SA: General = 1:2 based on 300 fc avg.

Commercial | Residential

#### **Disinfection Only**



# SilentAire Plasma Technology 12" Flush Mount

Flush mount with air disinfection treatment

The SilentAire flushmounts combine traditional ambient illumination with an internal Plasma Technology generator. An extremely quiet circulation system pulls in ambient air and recirculates back purified air while releasing plasma ions to attract and kill viruses and bacteria on contact.

No special installation steps are needed to install and use SilentAire fixtures. Install as a regular luminaire and control the lighting and fan system by wall switch.



# Plasma Air Disinfection 12" Flush Mount

High output LED lighting with Active Plasma Disinfection Technology

Model # 559031110 Part # SAFM-R12-PL-1000LM-9-CP5-MV-D-WH



# TwistFit Mounting System

#### LED Lighting

Size	Lumens	Watts	Color Temperature	CRI	Voltage	Dimming	Rated Life	CFM
12" Dia	1000LM	17W	2700/3000/3500/4000/5000K	90min	120-277V	TRAIC only at 120V	50,000hrs	25

#### **Recommended Disinfection Guide**

Features	Benefits	
Built in SilentAire Plasma Disinfection Technology	Easy Maintenance Plug and play	Technology
Disinfection reciniology	Flug and play	Coverage - ft <sup>3</sup>
Green light indicator shows disinfection is on	Reusable dust filter to	Coverage - ft <sup>2</sup>
	capture large airborne particles	Mounting Height
Coverage up to 188 sqft at		
a mounting height of 8ft	CCT adjustable	Application Recommendations
	Descriptory TwistFit	Only for base recommendations.
99.9% kill rate for airborne	Proprietary TwistFit Mounting System	Consult ETi for application scenarios.
viruses and bacteria, including SARS-CoV-2.*		



#### Lighting + Disinfection



Green indicator light shows disinfect



\*Tested by Innovative Bioanalysis in 8'x8'x10' Biosafety level 3 chamber with two Plasma Air Disinfection 12" Flush Mounts. Removes 9.27x10<sup>6</sup> TCID50/mL of SARS-CoV-2 to 4.03x10<sup>2</sup> TCID50/mL after 2 hours of operation, 99.996% virus gross reduction achieved. Tested by ILAC against Staphylococcus albus 8032 bacteria. Removed 99.9% of the bacteria from the air within 2 hours.





12" Flush Mount

Plasma

1,500

188

2.4m/8ft

2 pcs in a 400ft<sup>2</sup> area

SA: General = 1:2 based on 300 fc avg.

Commercial | Residential

#### **Disinfection Only**



# SilentAire Plasma Technology **Cambered Pendant**

Pendant lighting with air disinfection treatment

The SilentAire pendants combine traditional ambient illumination with an internal Plasma Technology generator. An extremely quiet circulation system pulls in ambient air and recirculates back purified air while releasing plasma ions to attract and kill viruses and bacteria on contact.

No special installation steps are needed to install and use SilentAire fixtures. Install as a regular luminaire and control the lighting and fan system by wall switch.



# **Ideal Applications**

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# **Plasma Air Disinfection Round 14" Cambered Pendant**

#### White or Black

High output LED lighting with Active Plasma Disinfection Technology



Model # 547061010 Part # SACP-14IN-PL-LB3-CP3-SV-D-B

\*Tested by Innovative Bioanalysis in 8'x8'x10' Biosafety level 3 chamber with three Plasma Air Disinfection pendant lamps. Removes 7.47x10<sup>6</sup> TCID50/mL of SARS-CoV-2 to 3.62x10<sup>2</sup> TCID50/mL after 2 hours of operation, 99.995% virus gross reduction achieved. Tested by ILAC against Staphylococcus albus 8032 bacteria. Removed 99.9% of the bacteria from the air within 2 hours.

## **LED Lighting**

Size	Color	Lumens	Watts	Color Temperature	
14" dia	Black or White	500/650/800LM	24W	2400/3000/4000K	9

#### **Recommended Disinfection Guide**

Features	Benefits		
Built in SilentAire Plasma Disinfection Technology	Easy Maintenance Plug and play	Technology	
Disinfection reciniology	r tug anu ptay	Coverage - ft <sup>3</sup>	
Green light indicator shows	Reusable dust filter to	Coverage - ft <sup>2</sup>	
disinfection is on	capture large airborne particles	Mounting Height	
Coverage up to 84 sqft at a			
mounting height of 5ft	Detachable PC shade for easy cleaning	Application	
	cuby cleaning	Recommendations	
99.9% kill rate for airborne viruses and bacteria		Only for base recommendations. Consult ETi for application scenarios.	C
including SARS-CoV-2*			

#### Two working modes to meet your needs Flip wall switch On/Off/On under 3 seconds to change mode



Green indicator light shows disinfection is working



14" Pendant

Plasma

420

84

1.5m/5ft

1 pendant protects a table, 50 fc avg.

1 pendant above a table

Commercial | Residential

#### **Disinfection Only**



# SilentAire Plasma Technology **Cone Pendant**

Pendant lighting with air disinfection treatment

The SilentAire pendants combine traditional ambient illumination with an internal Plasma Technology generator. An extremely quiet circulation system pulls in ambient air and recirculates back purified air while releasing plasma ions to attract and kill viruses and bacteria on contact.

No special installation steps are needed to install and use SilentAire fixtures. Install as a regular luminaire and control the lighting and fan system by wall switch.



**Ideal Applications** 

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# **Plasma Air Disinfection Round 20" Cone Pendant**

#### White or Black

High output LED lighting with Active Plasma Disinfection Technology



**Disinfection Technology** 

Features

Green light indicator shows disinfection is on

Built in SilentAire Plasma

Coverage up to 84 sqft at a mounting height of 5ft

99.9% kill rate for airborne viruses and bacteria including SARS-CoV-2\*

#### **LED Lighting**

Size	Color	Lumens	Watts	Color Temperature	CF
20" Dia	Black or White	600/800/1000LM	24W	2400/3000/4000K	90n

#### **Recommended Disinfection Guide**

Benefits		
Easy Maintenance	Technology	
Plug anu play	Coverage - ft <sup>3</sup>	
Reusable dust filter to	Coverage - ft <sup>2</sup>	
1 5	Mounting Height	
		1
Detachable PC shade for	Application	
easy cleaning	Recommendations	
	Only for base recommendations. Consult ETi for application scenarios.	Со
Plug and play Reusable dust filter to capture large airborne particles	Coverage - ft <sup>3</sup> Coverage - ft <sup>2</sup> Mounting Height Application Recommendations Only for base recommendations. Consult ETi for application	1 Со

#### Two working modes to meet your needs Flip wall switch On/Off/On under 3 seconds to change mode



\*Tested by Innovative Bioanalysis in 8'x8'x10' Biosafety level 3 chamber with three Plasma Air Disinfection pendant lamps. Removes 7.47x10<sup>6</sup> TCID50/mL of SARS-CoV-2 to 3.62x10<sup>2</sup> TCID50/mL after 2 hours of operation, 99.995% virus gross reduction achieved. Tested by ILAC against Staphylococcus albus 8032 bacteria. Removed 99.9% of the bacteria from the air within 2 hours.



14" Pendant

Plasma

420

84

1.5m/5ft

1 pendant protects a table, 50 fc avg.

1 pendant per table

ommercial | Residential



## Active plasma air disinfection technology to incorporate into your established lighting

We aim to clean your air through new lighting or adding to existing fixtures. At ETi we understand not every space will need to install new lighting. We've developed air solutions that can incorporate existing fixtures or simply add our patent-pending plasma air disinfection to commercial and residential buildings.

As with the rest of our line, these fixtures are installed like any traditional luminaire and controlled by wall switch.



SilentAire Plasma Universal System Page 16-17



SilentAire Plasma Air Sterilizer Page 18-19



# SilentAire Plasma Technology **Universal Ceiling Mount**

Ceiling mount system with air disinfection treatment

The SilentAire universal ceiling mount system allows an existing traditional surface mount 3.5/4" J-box fixture become an air purifier. An extremely quiet circulation system pulls in ambient air and recirculates back purified air while releasing plasma ions to attract and kill viruses and bacteria on contact.

The universal ceiling mount system can be used as a stand alone fixture or with any flush/semi-flush mounted lights in multiple styles.



**Ideal Applications** 

USTARD

# **Plasma Air Disinfection** 12" Universal Ceiling Mount System

#### Active Plasma Disinfection Technology

Model # 559051000 Part # SAFM-UCM-R12-PL-MV-WH



Kills 99.9% of airborne viruses and bacteria\*

99.99

1		*************	

#### **Specifications**

Size	Watts	Compatible fixtures	Max Weight	Voltage	Rated Life	CFM
12" Dia	5W	Any standard fitting 3.5/4" J-Box	22 lbs	120-277V	50,000hrs	18

#### **Recommended Disinfection Guide**

Features	Benefits	
Built in SilentAire Plasma Disinfection Technology	Easy Maintenance Plug and play	
Green light indicator shows disinfection is on	Reusable dust filter to capture large airborne particles	
Coverage up to 135 sqft at		
a mounting height of 8ft	Universal system to be used as a stand alone or with any of your existing flush mount fixtures	
99.9% kill rate for airborne viruses and bacteria*		

#### Two working modes to meet your needs Flip wall switch On/Off/On under 3 seconds to change mode

Low Disinfection + Lighting on if fixture is installed







System can hold any standard 3.5/4" J-box compatible ceiling flush or semi-flush mount fixture up to 22lbs.

\*Virus test by intertek against Influenza A Virus H1N1. Bacteria test by ILAC against Staphylococcus albus 8032. Removed 99.9% of the virus and bacteria from the air within 2 hours.



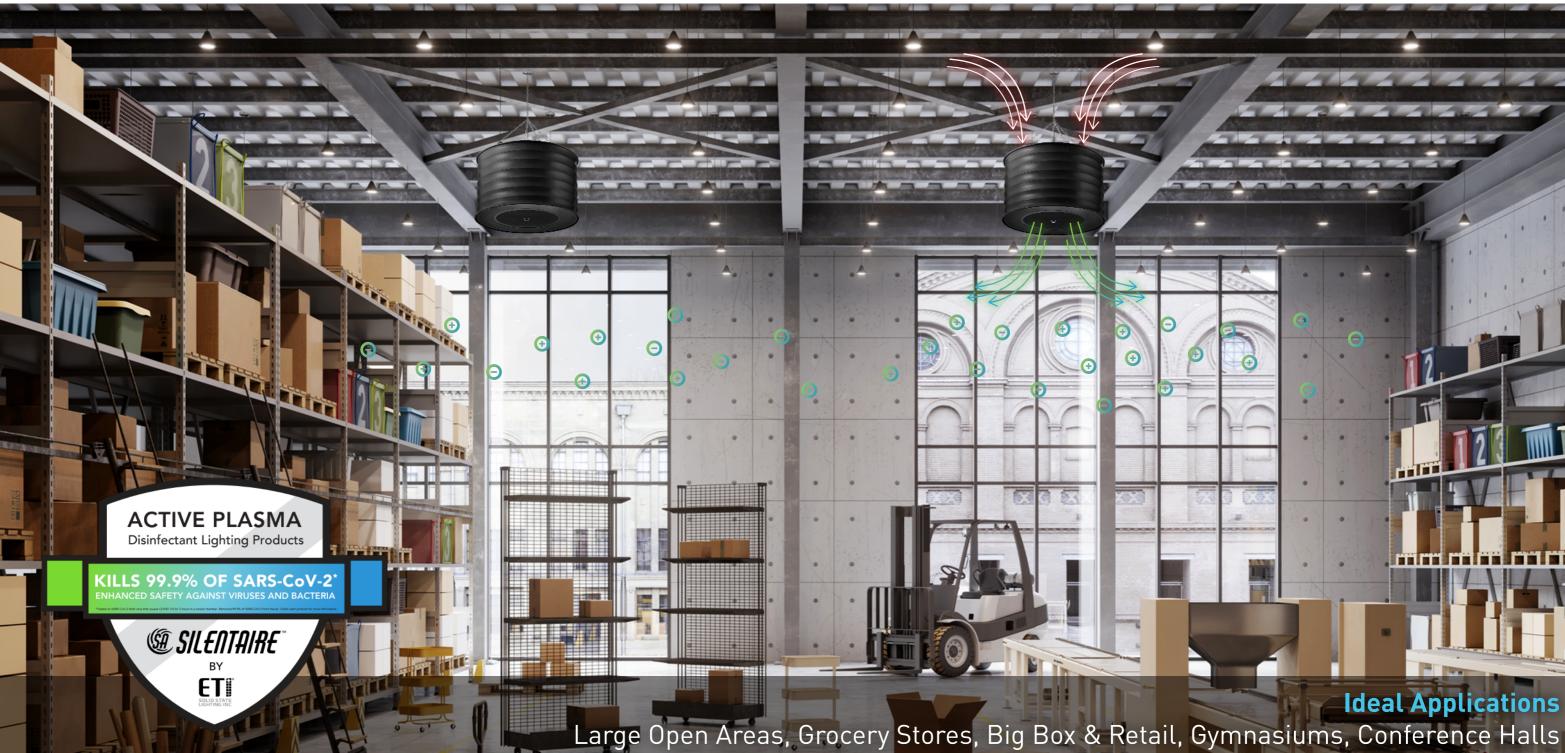
	12" Universal Ceiling Mount System
Technology	Plasma
Coverage - ft <sup>3</sup>	1,080
Coverage - ft <sup>2</sup>	135
Mounting Height	8ft
Application Recommendations	3 pcs in a 400ft <sup>2</sup> area
Only for base recommendations. Consult ETi for application scenarios.	Commercial   Residential

High Disinfection + Lighting off if fixture is installed



# **Plasma Technology Air Disinfection** Round 24" Air Purifier

The SilentAire Air Sterilizer puts a Plasma Technology generator in large open spaces. An extremely quiet circulation system pulls in ambient air and recirculates back purified air while releasing plasma ions to attract and kill viruses and bacteria on contact. No special installation steps are needed to install and use SilentAire fixtures. Install as a regular fan and control the system by wall switch.



# **Ideal Applications**

# **Plasma Air Disinfection Round 24" Air Purifier**

#### White or Black

Active Plasma Disinfection Technology



Model # 559061000 Part # SAP-PL-R24-MV-BK Model # 559061010 Part # SAP-PL-R24-MV-WH

#### **Specifications**

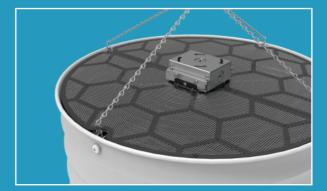
-	Size	Color	Watts	Voltage	Rate
-	24" Dia	White or Black	100W	120-277V	50,0

#### Features **Benefits** Easy Maintenance Dual disinfection system Tech for large spaces Plug and play Cove IFD module (intense field Reusable dust filter to Cove dielectric) capture large airborne particles Mou Built in SilentAire Plasma Appli Disinfection Technology Ozone filter to reduce Recor ozone generated by IFD Only for Consult scenario module to 0.03 ppm Coverage up to 1,378 sqft installed at a height of 32ft 99.9% kill rate for airborne viruses and bacteria,

#### **Two Way Installation**

including SARS-CoV-2\*

#### Suspended

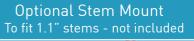


\*Tested by Innovative Bioanalysis in 20'x8'x8' Biosafety level 3 chamber with a Plasma Air Disinfection Round 24" Air Purifier. Removes 8.65x10<sup>6</sup> TCID50/mL of SARS-CoV-2 to 1.20x10<sup>2</sup> TCID50/mL after 2 hours of operation, 99.9986% virus gross reduction achieved. Tested by ILAC against Staphylococcus albus 8032 bacteria. Removed 99.9% of the bacteria from the air within 2 hours.



#### **Recommended Disinfection Guide**

	24" Dia
nnology	Plasma
erage - ft <sup>3</sup>	44,100
erage - ft²	1,378
nting Height	9.75m/32ft
ication mmendations	29 pcs in a 30,000 ft²area
base recommendations. ETi for application 55.	Commercial







#### WARNINGS AND PRODUCT TESTING

UV-C radiation is harmful for eyes and skin, therefore people and animals should always avoid direct exposure to UV-C. When installing the lamps make sure the instruction manual of the device is followed and lamps are not switched on during installation. Read product instruction manuals for more information.

#### Flat Panels

#### Model # 559041110

\*Tested on SARS-CoV-2 (the virus that causes COVID-19 with one fixture for 2 hours in a 640ft3 (10'x8'x8') chamber. Removed 99.99% of SARS-CoV-2 from the air. Tested on Staphylococcus albus 8032 with one fixture for 2 hours in a 30m3 (1059 Cubic ft.) chamber. Removed 99.9% of Staphylococcus albus 8032 from the air. Not proven to prevent the transmission of COVID-19. No air treatment device can guarantee the prevention of virus transmission. We recommend following CDC guidelines.

#### Model # 558101120

\*Tested on Staphylococcus albus 8032 and Influenza A Virus H1N1 with two fixtures at high speed mode for 2 hours in a 20m3 (706 Cubic ft.) chamber. Removed 99.9% of Staphylococcus albus 8032 and Influenza A Virus H1N1 from the air. Not yet tested on SARS-CoV-2 (the virus that causes COVID-19). Not proven to kill SARS-CoV-2 or prevent the transmission of COVID-19. No air treatment device can guarantee the prevention of virus transmission. We recommend following CDC guidelines.

#### 8" Downlight

#### Model # 559011010

\*Tested on Staphylococcus albus 8032 and Influenza A Virus H1N1 with two fixtures at high speed mode for 2 hours in a 20m<sup>3</sup> (706 Cubic ft.) chamber. Removed 99.9% of Staphylococcus albus 8032 and Influenza A Virus H1N1 from the air. Not yet tested on SARS-CoV-2 (the virus that causes COVID-19). Not proven to kill SARS-CoV-2 or prevent the transmission of COVID-19. No air treatment device can guarantee the prevention of virus transmission. We recommend following CDC guidelines.

#### 12" Flush Mount

#### Model # 559031110

\*Tested on SARS-CoV-2 (the virus that causes COVID-19) with two fixtures in high speed mode for 2 hours in a 18m<sup>3</sup> (600Cubic ft.) chamber. Removed 99.99% of SARS-CoV-2 from the air. Not proven to prevent the transmission of COVID-19. No air treatment device can guarantee the prevention of virus transmission. We recommend following CDC guidelines.

#### **Cambered and Cone Pendants**

#### Model # 547061010, 547061020, 547051010, 547051020

\*Tested on Staphylococcus albus 8032 and Influenza A Virus H1N1 with three fixtures at high speed mode for 2 hours in a 10m<sup>3</sup> (353 Cubic ft.) chamber. Removed 99.9% of Staphylococcus albus 8032 and Influenza A Virus H1N1 from the air. Tested on SARS-CoV-2 (the virus that causes COVID-19) with three fixtures in high speed mode for 2 hours in a 10m<sup>3</sup> (353 Cubic ft.) chamber. Removed 99.9% of SARS-CoV-2 from the air. Not proven to prevent the transmission of COVID-19. No air treatment device can guarantee the prevention of virus transmission. We recommend following CDC guidelines.

#### 24" Round Air Purifier

#### Model # 559061000 & 559061010

\*Tested on Staphylococcus albus 8032 with one fixture for 30 minutes in a 30m<sup>3</sup> (1059 Cubic ft) chamber. Removed 99.9% of Staphylococcus albus 8032 from the air. Tested on SARS-CoV-2 (the virus that causes COVID-19) with one fixture for 2 hours in a 22'x11'x8' (1280 Cubic ft) chamber. Removed 99.9% of SARS-CoV-2 from the air. Not proven to prevent the transmission of COVID-19. No air treatment device can guarantee the prevention of virus transmission. We recommend following CDC guidelines.

#### 12" Universal Ceiling Mount System

#### Model # 559051000

\*Tested on Staphylococcus albus 8032 with two fixtures in high speed mode for 2 hours in a 20m<sup>3</sup> (700 Cubic ft.) chamber. Removed 99.9% of Staphylococcus albus 8032 from the air. Tested on Influenza A Virus H1N1 with three fixtures in high speed mode for 2 hours in a 20m<sup>3</sup> (700 Cubic ft.) chamber. Removed 99.9% of Influenza A Virus H1N1 from the air. Not yet tested on SARS-CoV-2 (the virus that causes COVID-19). Not proven to kill SARS-CoV-2 or prevent the transmission of COVID-19. No air treatment device can guarantee the prevention of virus transmission. We recommend following CDC guidelines.

#### For More Information on Disinfectant Lighting Products from ETi Solid State Lighting

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