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The intention of this guide

The COVID-19 pandemic disrupted business for almost everyone. We all had to shift our priorities, whether it was focusing on protecting patients in a healthcare setting, finding new methods to serve customers, or making the tough decision to temporarily close a business.

How do we move forward during the crisis, and how do we recover as society begins to return to normal?

Throughout COVID-19, there is one clear priority: **protecting people**. The most effective way to protect people against a virus is to kill the virus. Sanitizing products are in high-demand and low supply.

But there is one tool that might have been overlooked pre-coronavirus: **Germicidal UV**. Scientists have known about the disinfectant qualities of UV light for decades, but it has only been implemented in the U.S. in recent years.

Now, germicidal UV is getting more attention. There is already enough confusion during this unprecedented time, so our goal is to simplify UV products and how they can work for you.

This guide may be useful for anyone looking for more information on germicidal UV, but we created it with two groups in mind:

1. Critical businesses operating during COVID-19 2. Businesses looking to recover from COVID-19

We hope you find the answers you're looking for here. If you have any further questions, our team is always **here to help**.

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It seems everyone is trying to find disinfectant solutions during the COVID-19 pandemic. Is germicidal UV the right solution for you and your application? In this section we help you decide if this is the best buying decision for your company.

06: What type of UV light is most effective?

Not all UV light is the same. There are several types of UV and the differences can impact the effectiveness against germs. We explain the different types to help you find a product that's right for you.

07: Pros and cons of UV light

The different types of UV products have advantages and disadvantages. We break down the top pro and con for segments of the UV spectrum.

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How much UV do you need to disinfect a certain area? The answer depends on several factors, including intensity, time, product, and wattage.

10: Which type of germicidal UV product to buy?

After you've read more about the different types of UV, it's time to get more familiar with the products. In this section, we explain several types of products and list options you can buy for each.

18: How to use disinfectant UV light for different applications

If you want to know how germicidal UV will work for your particular business, check out this section. We give you suggestions on where to use UV products.

20: Maintenance & warranties for UV products

Are you leaning towards purchasing UV products? You need to be familiar with the maintenance and warranties on products and manufacturers. We also explain red flags that could deter you from buying certain products.



Is disinfectant UV lighting right for you?

You've probably heard of ultraviolet (UV) light a lot more since the start of the COVID-19 pandemic. Hospitals and other critical businesses want to protect patients, customers, and employees as much as possible. Other businesses are looking ahead to re-opening and considering which options can ease concerns about the novel coronavirus.

First, let's explain UV. Ultraviolet (UV) is part of the electromagnetic spectrum and includes wavelengths from 10 to 400 nanometers. A nanometer is just a unit of measure that's used in relation to wavelength.

What exactly does that mean? Without all of the scientific jargon, the UV spectrum is just outside the visible light spectrum. You won't be able to see ultraviolet light because its wavelengths are shorter than visible light. Although it's very commonly called "UV light" these days, it's technically not light.



You probably think of the UV spectrum when you think of the sun. The sun produces UV wavelengths, but only UV-A and UV-B make it into the earth's atmosphere. UV-C is blocked. However, scientists discovered the disinfectant capabilities of UV-C decades ago and it's now produced in artificial lighting applications.



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Let's take a look at some of the advantages and disadvantages.

Advantages:

- Pathogen kill rate is up to 99.9%. Germicidal UV is highly effective at getting rid of germs like viruses and bacteria. Germicidal UV, or UV-C, is already used to disinfect air, surfaces, and water. When products are used correctly, the <u>International</u> <u>Ultraviolet Association</u> (IUVA) believes UV light can inactivate COVID-19 because other coronaviruses respond to UV. However, testing so far is limited and there cannot be a direct connection drawn between UV light and COVID-19.
- 2. No harsh chemicals. Forget about the combination of cleaners typically used to sanitize a space. UV can replace or reduce the amount of harsh chemicals. It's important to note, though, that UV does not replace cleaning measures such as dusting and wiping down surfaces, and the best solution involves UV, cleaning, and the use of antimicrobial protectants.

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3. Multiple configurations. There is more than one way to use germicidal UV. You can choose between ceiling mounted fixtures, mobile fixtures, or HVAC components. Chances are there is a product that fits the need for your application.

Disadvantages:

- 1. Not safe for humans. Not all UV wavelengths are safe for humans. Germicidal UV, or UV-C, is more powerful than the UV rays that hit the earth from the sun (UV-A and UV-B). Overexposure can cause damage to skin and eyes. There are products that have addressed these concerns. Safety is the number one reason to purchase from a manufacturer you trust.
- 2. Time and effectiveness may vary. There is no set amount of time it takes for UV to inactivate germs. The time depends on the product you're using, the placement of the product, and the power of the product. This will vary by manufacturer.
- **3. Strict guidelines and product recommendations.** A UV product is not one you buy, bring home, and just plug in. There are strict guidelines and recommendations for use. Following exact manufacturer instructions is key to ensure the highest effectiveness and safety for everyone around the products.

If you run a business that frequently serves customers or sees patients, germicidal UV may become an important part of your safety and cleaning plan.

Once you weigh the advantages and disadvantages and decide UV products are right for you, we want to make sure you're a well-informed buyer. Unfortunately, some people choose to use crises to benefit themselves. A lot of new so-called UV lighting manufacturers have suddenly popped up. This guide will help inform your buying decision and present products from companies with a proven track record.



What type of UV lighting is most effective?

The type of UV product that will be most effective for you depends on your specific need. There are parts of the UV spectrum that get rid of germs more effectively.

Here's a breakdown of the UV spectrum:



UV-C is the traditional form of germicidal light. It can kill pathogens including viruses, bacteria, fungi, and mold.

Germicidal UV is highly effective when it's used in the right applications for the right amount of time. UV-C is dangerous to humans and should not be used when anyone is nearby.

Manufacturers say UV-C products can kill up to 99.9% of germs.

HIGHLIGHTS:

- 200nm-280nm
- Germicidal
- Most effective for disinfecting



Scientists started focusing on far-UVC in the last decade. It's a specific range of UV-C that's actually safe for humans to be around because it can't penetrate skin or eyes, but is still effective at killing germs.

Far-UVC products can be most effective in busy areas where you might not have down-time to clean.

HIGHLIGHTS:

- 207nm-222nm
- Germicidal
- Most effective for disinfecting
- Safe for skin and eyes



UV-B also has some germicidal qualities, but you typically do not see disinfectant products with only UV-B. UV-B is typically used in broadspectrum UV products.

Because UV-B is also produced by the sun, it's commonly found in tanning beds.

HIGHLIGHTS:

- 280nm-315nm
- Curing
- Tanning
- Medical Applications



UV-A, or near-UV, is not as effective at killing pathogens as UV-C but can still kill bacteria. Even though UV-A will not inactivate viruses like COVID-19, it could protect against bacterial infections in hospitals.

HIGHLIGHTS:

- 315nm-400nm
- Disinfectant properties
- Effective at reducing bacteria
- Printing
- Curing
- Lithography
- Medical Applications



Pros and cons of four types of UV

Manufacturers have figured out different ways to use ultraviolet (UV) to get effective results, but each has its own pros and cons.

We will explain the different types of UV they're using, and the top pro and con of each.

1. Germicidal UV (UV-C)

Germicidal UV, or UV-C, is the traditional form of germicidal lighting products. UV-C is extremely effective at killing pathogens like viruses and bacteria. Scientists have studied its effectiveness against some of the most resilient viruses, like the norovirus. Viruses and pathogens cannot build up a resistance to germicidal UV, so it will work over and over again.

PRO: The biggest advantage of UV-C is its ability to inactivate germs. <u>Studies have shown</u> that UV-C light can get rid of up to 99% of viruses and bacteria.

CON: UV-C or germicidal UV is harmful to humans. The room must be empty when a UV-C product is in use. The ultraviolet wavelengths can penetrate skin and eyes, potentially causing burns as a result of over-exposure.

2. Far-UVC

Far-UVC is included in the UV-C wavelengths, but there is one major difference. Far-UVC utilizes specific wavelengths believed to be safe for humans. Far-UVC products are between 207 to 222 nm and can still be effective against fighting pathogens like viruses and bacteria. Research on this specific spectrum is ongoing but has increased in the last several years.

PRO: Studies show far-UVC is not strong enough to penetrate the skin, so it is safe for humans to be in the same room as the product. Because the room does not have to empty in order for the products to run, they can run more frequently.

CON: Far-UVC technology is still relatively new, and so are the studies supporting its effectiveness. The Illuminating Engineering Society (IES) also notes that some far-UVC products may still cause eye damage, but it depends on the product's glass envelope. Be sure to buy far-UVC products from a reputable manufacturer.



3. Broad-spectrum UV

Broad-spectrum UV can include a combination of UV-A, UV-B, and UV-C light. Using different spectrums can improve the effectiveness against pathogens. UV-A is anti-bacterial, so it can kill even more bacteria that may be a threat for infections. UV-A and UV-B both contain oxidation properties that cause the cells in pathogens to die.

PRO: The biggest advantage for broad-spectrum UV is the enhanced germ-fighting capability. The combination of UV-A, UV-B, and germicidal UV-C can inactivate even more germs than UV-C alone.

CON: Because broad-spectrum UV contains multiple spectrums, it is not safe for humans to be around while in use. Works best overnight, when rooms are unoccupied, or in enclosed applications.



4. Near-UV or UV-A

Near-UV is the closest to the visible light range. It typically includes the UV-A range, from 315 nm to 400 nm. Near-UV helps fight bacteria but not viruses, so it would not kill COVID-19. It does, however, help protect patients who are already sick from getting even more infections.

PRO: Near-UV is safe for humans, so it can be on when people are around.

CON: Near-UV has a lower disinfection rate than other types of UV. The primary use is to lower bacterial infection rates, but it does not kill other pathogens like viruses.



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Dosing requirements for germicidal UV

One of the most common questions we've received is, "How much UV light is required to disinfect a certain area?"

This is called the "dose" or "dosage" and it depends on two main factors: time and intensity.

For UV products, intensity is measured in the units of milliwatts per square centimeter (mW/cm²).

The higher the intensity of the product, the faster it will get rid of germs. A lower intensity will take longer to inactivate pathogens, but can still be effective.

The product's ability to kill germs depends on how far away it is from the surface or surrounding area. The UV lamp will inactivate pathogens on a closer surface better than it would on a surface that's further away. You can think of this like light illumination. Surfaces closer to the light are brighter than surfaces further away.



The Illuminating Engineering Society (IES) recently released a report that lays out a standard for dosage: "17 mW of 254-nm lamp-emission radiant power per cubic meter (m3) of space to disinfect air." This is based on evidence gathered over many years with a specific focus on stopping the spread of tuberculosis.

The amount of time to get to that rate will depend on the product you buy and the space you're trying to disinfect.

Another factor to consider is how much square footage you are trying to cover. The wattage of the UV product does not designate intensity. Instead, it tells you how much square footage you can expect the product to cover.

One of the manufacturers we work with, American Ultraviolet[®], summarized it this way: "A 15-watt lamp will cover approximately 100 square feet; a 30-watt lamp will cover approximately 200 square feet." The amount of coverage will vary by product, so this is an important specification to check before you make a purchase.

Getting the right dosage for your space can be confusing if you're new to UV products. One tool to consider is the dosimeter from American Ultraviolet[®]. The dosimeter changes color based on the exposure level to make sure UV-C has covered all areas.

If you need help, our lighting specialists are always ready to help find the right solution for you.



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Which type of germicidal UV product should you buy?

Now that you have a better understanding of the different ultraviolet (UV) wavelengths, you're probably wondering which type of UV product to buy. Should you go with a mobile unit that can move from one area to another? Or should you focus on a constant stream of safe, far-UVC light?

The Illuminating Engineering Society (IES), a trusted and valued source in the lighting industry, recently released a report focusing on germicidal UV. The report lists upper-room germicidal UV units as the most effective type of product, followed by HVAC UV components, then surface cleaners like fixtures and mobile units.

The IES also notes that all of these products can be effective in disinfection and can all be used as weapons against viruses and bacteria. Using multiple products may be ideal to get the best results.

1. Upper-air UV products

Upper-air UV systems, or upper-room germicidal UV systems, disinfect a large amount of air at once. Upper-air fixtures run constantly above people's head, so there is no risk of over-exposure when used properly. These products should be mounted at least seven feet high.

American Ultraviolet[®] products

Application: All commercial buildings within ceiling height requirements

American Ultraviolet[®] upper-air products have been used in hospitals since the 1960s, and are now used in a wide range of commercial and industrial buildings. The air in the building needs to move to get the highest disinfection rate, so these products work best in commercial buildings with HVAC systems or industrial fans.



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2. HVAC germicidal UV applications

Germicidal UV can be installed to existing air handling units and equipment. The goal is to inactivate pathogens traveling in the airstream before the air reaches people in the building.

The IES report lists HVAC germicidal UV as a secondary option to upper-air systems. Germicidal HVAC UV products do little to prevent person-to-person transmission, but still inactivate viruses and bacteria.



There are two different ways to use HVAC germicidal UV products:

a. Coil-mounted

Germicidal HVAC products can be mounted to coils on industrial systems. This method not only helps eliminate pathogens in a building, but it also helps improve the life of the HVAC system by reducing mold and bacteria.

PURO[™] Helo F1 _

Application: All commercial buildings

PURO[™] is taking a unique approach to disinfecting air handling units. Instead of installing UV fixtures onto the HVAC system, PURO™ recommends mounting its Helo F1 product six feet away in order to cover systems that are up to nine feet high and nine feet wide. This allows the product to disinfect industrial systems, as pictured in the image below on the left.

PURO

PURO[™] runs in one to two hour cycles, so it consumes much lower energy and does not contain mercury.



Continuous UV-C Disinfection Lamps

Puro Disinfectant Lighting Technology



Image source: PURO™

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American Ultraviolet[®] products

Application: All commercial buildings

American Ultraviolet[®] coil-mounted systems run constantly, so while they use more energy than a PURO[™] Lighting system, they are very effective at disinfecting the coil and air passing through.



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b. In-duct / passthrough

In-duct / passthrough HVAC products are installed in the airstream. The germicidal UV fixtures disinfect the air as it passes by, reducing the amount of bacteria and viruses in a building.



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3. Germicidal UV and disinfectant fixtures

Germicidal UV light fixtures are powerful and effective, but most are not safe for use around humans. These are most effective when there is a predictable amount of time that a room or space will be empty. For example, locker rooms are most likely going to be empty overnight, giving the products a chance to run without anyone nearby. Dentist offices, primary care offices, and school or university classrooms would also be great places to use germicidal UV fixtures. But there are also germicidal UV fixtures that can run constantly if used appropriately.



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We're going to talk about germicidal UV fixtures in two groups.

a. Surface cleaners

PURO[™] Helo F1 and F2

Application: Locker rooms, classrooms, offices, and more

The PURO[™] Helo F2 has three times the power and can cover a larger area than the Helo F1. Both can be either ceiling mounted, wall mounted, or plugged in on a tabletop surface. PURO[™] products use pulsed xenon technology and broad-spectrum UV to kill as many bacteria and viruses as possible.

PURO" F1

You can set these products to run at the same time every night. Because they are not safe to use around humans, they have an occupancy sensor that will stop the unit if motion is detected.

American Ultraviolet[®] CE Series

Application: Laboratories, conveyor lines

American Ultraviolet[®] offers fixtures with anywhere from one to four germicidal UV lamps. These are used to target very specific areas. The CE Series products emit germicidal UV and should not be used when anyone is nearby.



Healthé Cleanse® Downlight _

Application: Above frequently touched surfaces

The Healthé Cleanse® downlight uses far-UVC 222 nm light to disinfect surfaces while still providing general illumination. Because it uses far-UVC, it's considered safe to run constantly. The Healthé team recommends using the downlight in medical offices, nurse stations, and schools because it can disinfect surfaces without disrupting workflows. The range of the UV light and its effectiveness will depend on how high the downlight is mounted. The downlight involves a simple retrofit to replace 6" recessed cans and or can be used in new construction.





b. Other germicidal UV fixtures

Manufacturers continue to innovate new products to address disinfection needs. The next group of UV fixtures can run constantly while still sanitizing using different methods.

Healthé Cleanse® Troffer

Application: Lobbies, common areas, offices, classrooms, and more

The Healthé Cleanse[®] troffer combines UVA and UVC light inside the fixture to filter and disinfect air, while also providing general illumination LED light on the outside of the fixtures. Because the UV radiation is enclosed within the fixture, this product is safe to use with people around. It's beneficial for large areas with a lot of movement, like lobbies and common areas. The troffer involves a simple retrofit or can be used in new construction. This is a similar method to upper-room systems.

Healthé Cleanse® Portal

Application: Entry points

The Healthé Cleanse[®] portal can be a gamechanger for entry points. Here's how it works: A person steps inside the portal and does a 360-degree turn. Within 10 to 12 seconds, 222 nm light disinfects up to 90% of germs and pathogens.



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Kenall KRT5 and KRT8

Application: Temporary medical tents, training rooms, locker rooms

We also want to mention another product that uses light just outside of the UV spectrum, around 405 nm. This wavelength still contains disinfectant benefits but produces visible light and is safe for humans. 405 nm can kill some bacteria but not viruses. The lighting manufacturer Kenall uses Indigo-Clean[™] technology to help limit bacterial infections.

These particular Kenall disinfectant fixtures are intended for use in temporary medical facilities, like tents popping up for testing and patient evaluation. They can also be used in training rooms to target staph infections.





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4. Germicidal UV mobile units

Mobile UV units give you more flexibility, as you can move them from one area to another. But as with other germicidal UV lighting fixtures, they are not safe for humans to be around while running. Another downside to the mobile units is they require labor. At least one person has to move the UV unit around and cannot be near the unit while it's in use.

Here are a few germicidal UV mobile units we recommend:



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American Ultraviolet® Artz 2.0

Application: Patient rooms, surgical suites

The Artz 2.0 is the best option for healthcare customers looking for a high-intensity product with fast disinfection times. It has a 360-degree motion detector that shuts off if anyone is around. This product is a reliable option for healthcare patient rooms and surgical suites.

American Ultraviolet® MRS45-12

Application: Long-term care facilities

The MRS45-12 uses fewer lamps than the Artz 2.0, but still provides 360-degree coverage. American Ultraviolet® recommends the MRS45-12 for longterm care facilities.

American Ultraviolet® MRS33-8

Application: Commercial offices

The MRS33-8 contains smaller lamps and is smaller in size compared to other products, which makes it ideal for smaller spaces. It still offers 360-degree coverage and is ideal to clean cubicles in commercial offices.

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One of the concerns about mobile units is how well it cleans multiple surfaces within a room. There are several factors involved, including distance and the amount of dust or other particles on the surface, that can limit the amount of UV-C that reaches a surface. One way to check exposure levels is with a dosimeter. The dosimeter changes color depending on how much UV-C reaches it. Several dosimeters can be placed in a room to check exposure levels. You also want to check coverage for each product.

5. Germicidal UV wands

If you've searched for UV products online, you've probably come across hand-held UV "wands" that typically cost around \$100.

These products might seem like a good option, especially with a low up-front cost. However, there are questions about their effectiveness.

The Illuminating Engineering Society (IES) found most of these products do not emit enough UV-C to actually disinfect surfaces. In order to be effective, the wand needs to be held over a surface for several seconds and not "waved" over an object.

There are also concerns over the safety of these products. The IES says, "Even if safely used, these might provide a false impression of effective disinfection."

Once you purchase these products, you might also run into problems finding replacement bulbs and end up purchasing another similar product.

If you're interested in an industrial-grade product that is hand-held and portable, American Ultraviolet[®] offers "The Blade." The handheld germicidal fixture disinfects hard to clean surfaces like keyboards, remote controls, toilet surfaces, cell phones, and more. The product quickly disinfects bacteria and viruses, when manufacturer guidelines are followed.

One way to tell how well the product is working is with a dosimeter. The dosimeter changes color based on the amount of UV-C exposure.

How to use UV products for different applications

The first place that probably comes to mind when you think of using ultraviolet (UV) light is a healthcare facility. But germicidal UV can kill germs and be very beneficial in a variety of businesses.

During and after the COVID-19 crisis, using disinfectant UV products can help reassure your employees and customers their health and safety is the top priority.

We've compiled suggestions on where to use UV for several different types of business, as well as product suggestions.

RECOMMENDED PRODUCTS FOR:

AIRPORTS

American Ultraviolet® HVAC fixtures

PURO™ **mobile units** (airplanes and restrooms)

BANKS

American Ultraviolet® **HVAC fixtures**

PURO[™] **Helo F1 and F2** (lobby, offices)

Healthé Cleanse® **downlight** (bank counter)

American Ultraviolet® upper-air fixtures (lobby)

American Ultraviolet® blade (ATMs)

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COMMERCIAL OFFICES

Healthé Cleanse® downlight (lobby)

American Ultraviolet® **HVAC** fixtures

MRS33-8 (offices, cubicles)

American Ultraviolet® upper-air fixtures (common areas)

Healthé Cleanse® troffer (common areas, workspaces)

Healthé Cleanse® portal (entry point for employees)

GROCERY STORES

American Ultraviolet® **HVAC** fixtures

American Ultraviolet®

HVAC fixtures

HOTELS

PURO™

mobile units

(guest rooms, elevators)

PURO™ Helo F1 and F2 (restrooms, back-of-house)

American Ultraviolet® upper-air fixtures (shopping areas and check out stations)

Surface Disinfection fixtures (above shopping carts and baskets)

Healthé Cleanse® downlight (lobby)

American Ultraviolet® MRS33-8 (guest rooms, elevators)

American Ultraviolet® upper-air fixtures (lobby, common areas)

Healthé Cleanse®

portal

(entry point)

HOSPITALS

American Ultraviolet®

HVAC fixtures

PURO™

mobile units

(operating rooms and patient rooms)

American UV ARTZ 2.0 (operating rooms and patient rooms)

(lobby and common areas)

Healthé Cleanse®

troffer

(lobby and common areas)

Healthé Cleanse® **portal** (entry point for doctors and nurses)

Kenall KRT5 and KRT8 (temporary medical facilties)

INDUSTRIAL

American Ultraviolet® HVAC fixtures

Healthé Cleanse® **portal** (entry points)

PURO[™] **mobile units** (conveyors and custom applications)

PURO[™] Helo F1 and F2 (conveyors and custom applications)

Healthé Cleanse® **downlight** (high-contact surfaces)

Healthé Cleanse® troffer (offices, breakrooms)

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RESTAURANTS

American Ultraviolet® **HVAC** fixtures

PURO™ Helo F1 and F2 (kitchen, restrooms)

PURO™ mobile units

(kitchen, restrooms)

American Ultraviolet® MRS45-12 (kitchen, restrooms)

Healthé Cleanse®

downlight

(hostess stand and

waiting area)

American Ultraviolet® kitchen exhaust (kitchen)

American Ultraviolet® upper-air fixtures (hostess stand, waiting area, and common areas)

RETAIL

American Ultraviolet® **HVAC** fixtures

PURO™ Helo F1 and F2 (restrooms)

PUR0™ mobile units (restrooms)

American Ultraviolet® MRS45-12 (restrooms)

Healthé Cleanse® downlight (common areas and fitting rooms)

American Ultraviolet® upper-air fixtures (common areas and fitting rooms)

SCHOOLS

American Ultraviolet® **HVAC** fixtures

PUR0™ Helo F1 and F2 (classrooms and locker rooms)

Healthé Cleanse® troffer (common areas and classrooms)

American Ultraviolet® upper-air fixtures (common areas and gymnasiums)

SENIOR CARE FACILITIES

PURO™ **mobile units** (kitchen, restrooms, senior rooms)

American Ultraviolet® **MRS45-12** (kitchen, restrooms, senior rooms)

Healthé Cleanse® **portal** (entry point for guests and deliveries)

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Maintenance and warranties for UV products

Once you decide to make the investment in UV products, you need to know how to maintain the products and what's covered by the manufacturer's warranty.

Lighting manufacturers or distributors should be able to walk you through the maintenance process and explain the upkeep on your products. (If not, this is a red flag.)

Most will also include information on their product's warranty. There is one thing you want to make sure of before you purchase a product: **The warranty should not be longer than the lighting company or manufacturer has been in business.** This is especially important for UV products since more companies have started developing UV products in recent years.

Since we listed products from four manufacturers throughout this guide, we will share what information we have on each of those manufacturers and the maintenance of the products.

American Ultraviolet®

American Ultraviolet® has manufactured UV products since 1960, so the company has decades of experience.

Its medical UV lamps are rated for 12,000 hours and there is minimal training required. As far as maintenance, the mobile UV lamps should be cleaned regularly. American Ultraviolet[®] offers a 5-year warranty on its products.

Healthé Cleanse[®] products

Healthé provides biological and circadian lighting solutions. Healthé is a new line formed by an established company, "Lighting Science Group." Lighting Science Group has been in business since 2000.

Because their products run constantly, they require more maintenance than some other UV products.

For the Healthé Cleanse[®] troffer, you will need to change the filters every six months on average. The UV LEDs inside the fixture have a two-year warranty.

Installation on Healthé products can also require more work than your average troffer or downlight. The products are heavier and may need to be specially installed to make sure the product is properly mounted.

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Kenall

Kenall is an industrial lighting manufacturer and offers a variety of lighting fixtures and LEDs for a wide range of use. Kenall's parent company, Legrand, has been in business since 1966.

Warranties vary based on products, but the temporary disinfectant lights, which we mentioned specifically, have a one-year warranty.

• PURO[™] Lighting

PURO[™] Lighting was founded by a group of lighting industry veterans and started producing UV products several years ago.

Maintenance depends on the use of the products and they are guaranteed with a one-year warranty.

Where to go from here

Disinfectant UV products are a relatively new topic to many of us. Because it's so important to make sure the products are used properly, please do not hesitate to contact us with any product questions.

Here are some next steps we recommend:

SHOP DISINFECTANT UV PRODUCTS

GET A FREE LIGHTING CONSULTATION

Have questions about the science and research behind GUV?

We've compiled a list of studies and reports to reference.

VIEW STUDIES AND RESEARCH REPORTS

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9261 Jordan Avenue Chatsworth, CA 91311 800-284-2024 info@regencylighting.com

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