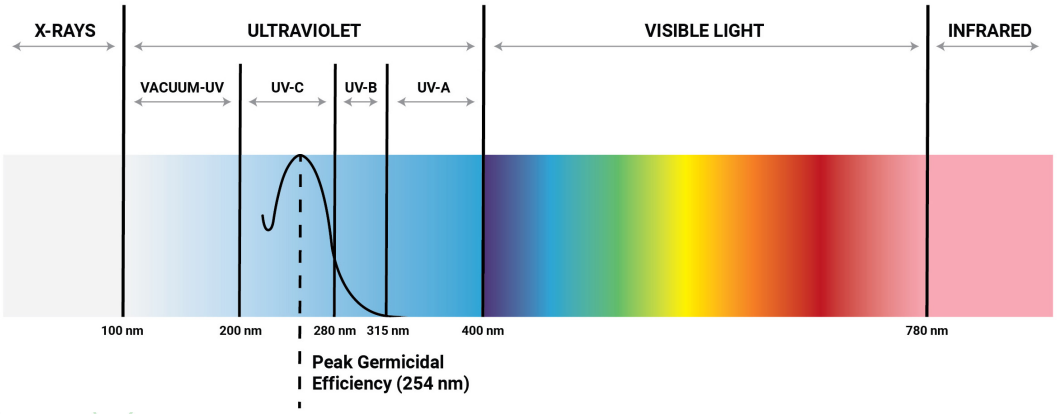
UVC DISINFECTION

How It Works

Disinfection with ultraviolet light uses specific wavelengths (not chemicals) to inactivate pathogens. Ultraviolet (UV) light is germicidal, meaning it attacks the DNA structure of a variety of cell types, rendering them inactive. UV light has been used for many years to sterilize medical instruments and clean air conditioner coils.



Type of UV	Wavelength *(nm)*	Safe *for skin & eyes**	Degradation *of materials like plastic***	Practical Uses
VUV Far-UV	100-200	Y	Y	Medical Equipment
Far-UVC	207-222	Y	Y	Germicidal, **Most Effective for Disinfecting**
UV-C	200-280	**N**	Y	Germicidal, **Most Effective for Disinfecting**
UV-B	280-315	**N**	Y	Curing, Tanning, Medical
UV-A	315-400	**N**	N	Curing, Printing, Sensing, Medical

**Possible Dangers to Humans (Due to Improper Use): skin cancer, eye injury (cataracts), collagen damage*

***Material Degradation: thermoplastics, aramid fabrics (ex. kevlar), pigments and dyes*

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UVC DISINFECTION

Types of UVC Disinfection

Far UV

This wavelength of light can disinfect an entire room in a matter minutes while presenting no danger to people in the space.

Near UV

Disinfection with this wavelength is extremely effective, but requires an empty room to operate safely.

Alternative Types of UVC Disinfection

Visible Light Disinfection (VLD)

Unlike UV light, which damages cellular DNA, VLD excites parts of the cell called porphyrins, leading to highly reactive molecules being created. These molecules (called ROS) then deactivate the cell. Like the name implies, VLD is part of the visible light spectrum (at 405 nm), meaning that humans can see it. The light appears blue-violet in color, and is safe for use in occupied spaces.

Safety with UV Products

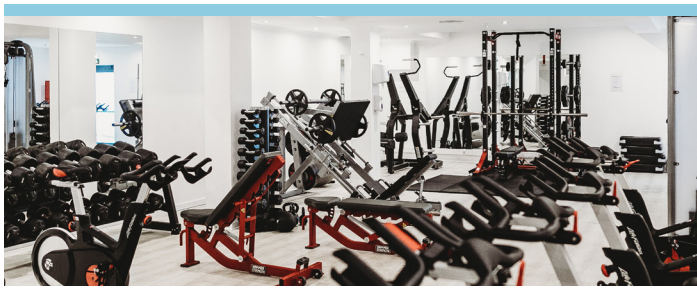
Due to its cell-inactivating properties, prolonged UV exposure can be dangerous to humans or animals and can accelerate material degradation. These devices should be used with care and only according to the included instructions.

If the guidelines are followed, these products are completely safe to use. Many of them also have additional safety controls available, and some even have these features built in.

UVC Safety Swtiches

Hospitals & Healthcare
Hospital Rooms • Waiting Areas • Doctor's Offices

Schools
Classrooms • Restrooms • Cafeterias



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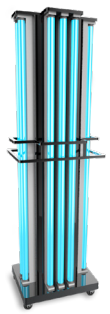
Available Disinfection Products

Portable Surface Disinfection

Used to complete periodic cleanings between uses of a room; must be run during zero occupancy and by a trained attendant in full-body PPE for UV protection.

Pros:
- Mobile and flexible
- Simple on-demand routine

Cons:
- Does not clean through fabric or furniture
- Will not be continually active



UVC Disinfection Tower

UVC Corn Light

Commercial Handheld UVC Disinfecting Light

Permanent Surface Disinfection

UVC light (255 nm) used between shifts, classes, or after closing time for sanitizing unoccupied spaces. Available as installed fixtures or temporary lamps that are put away after use. *Requires controls.*

Pros:
- Intense UVC cleaning for all surfaces in area
- Integrated or moveable options

Cons:
- Must be used in unoccupied areas
- Risk of exposure

UVC Disinfecting Linear Light

Upper-Air Disinfection

Typically these contain UV-C lamps (255 nm) and can be run during times of occupancy. Requires specialized maintenance procedures.

Pros:
- No HVAC system changes needed
- Safe for use in occupied areas

Cons:
- Does not disinfect surfaces
- Must be mounted on the wall or ceiling

UV Air Cleaner

Upper Room Disinfection Unit

Two-in-One Fixtures

Standard white LED light is blended with UV-A (~365 nm) light to allow safe exposure in occupied spaces for up to 8 hours (at certain power levels). *Requires controls.*

Pros:
- Renovation-friendly
- Utilizes LED efficiency

Cons:
- Concerns of overexposure
- Not fully effective against all viruses

Contact ELEDLIGHTS for interests in General Purpose Lighting

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