



EnviroKlenz Air System Plus with UVC Lights

Product Feature Highlight & Safety: UVC (254 nm)

What It Provides: The EnviroKlenz® Air System Plus with UV Lights combines Advanced EnviroKlenz technology for toxic and noxious chemical and odor removal with HEPA filtration and ultraviolet germicidal radiation (UVC) to remove airborne particulates and allergens, as well as to inhibit the growth of captured microorganisms (such as bacteria, mold, and viruses).

How It Works: UVC bulbs are located before (and radiating on) the HEPA filter's collection side. Unlike systems that depend on killing/inactivating the organisms as they pass through the UVC light in a very short period, the UVC light is continuously shining on the collected organisms providing a high dosage of UVC.



Display Panel and Safety: Since the system has UVC lights, the display panel has LED indicators for when the UVC bulbs are on and functioning. When the UV switch is placed in the "on" position, the green indicator lights illuminate when bulbs are installed and working. If the bulbs were to burn out, the indicator LED light will turn off.

The system is additionally equipped with a kill switch, which will cut power to the blower and UVC lights if the back panel is removed.

Display Panel Examples:



System On/UV lights Switched Off



System On/UV lights Switched On



System On/1 UV light bulb burned out



Safety Testing: Since the system has UVC lights, it is important to see how much, if any, UVC light escapes the system. To evaluate this, a UVC Digital Light Meter (General UV512C) was used to detect fugitive UVC light from the system in various light conditions and distances.

The meter has a detection range of 220-275 nm in the UVC range, which is consistent and encompasses the 254 UVC bulbs used in the EnviroKlenz Air System Plus. The meter has an illumination range of 1 $\mu\text{W}/\text{cm}^2$ to 9999 $\mu\text{W}/\text{cm}^2$ on the low range and 0.01 mW/cm^2 to 40.0 mW/cm^2 . Occupational exposure limits are typically 100 $\mu\text{W}/\text{cm}^2$. The following readings were taken for the air system and the environment.

Controls:

<i>Location</i>	<i>Conditions</i>	<i>Result</i>
Outdoor Control	Bright/overcast day, morning	5-10 $\mu\text{W}/\text{cm}^2$
Indoor Control	With direct outdoor light	0-1 $\mu\text{W}/\text{cm}^2$
Indoor Control	Without direct outdoor light	0 $\mu\text{W}/\text{cm}^2$
Indoor Control	Dark room	0 $\mu\text{W}/\text{cm}^2$

Air System, properly set up and installed cartridge and filter:

<i>Location</i>	<i>Conditions</i>	<i>Result</i>
< 1 inch from air intake	Ambient room light	0 $\mu\text{W}/\text{cm}^2$
1 foot from air intake	Ambient room light	0 $\mu\text{W}/\text{cm}^2$
3 feet from air intake	Ambient room light	0 $\mu\text{W}/\text{cm}^2$

Air System, properly set up and installed cartridge and filter:

<i>Location</i>	<i>Conditions</i>	<i>Result</i>
< 1 inch from air intake	Dark room light	0 $\mu\text{W}/\text{cm}^2$
1 foot from air intake	Dark room light	0 $\mu\text{W}/\text{cm}^2$
3 feet from air intake	Dark room light	0 $\mu\text{W}/\text{cm}^2$

Air System, incorrectly installed cartridge:

<i>Location</i>	<i>Conditions</i>	<i>Result</i>
< 1 inch from air intake	Air Cartridge installed improperly	2 $\mu\text{W}/\text{cm}^2$
1 foot from air intake	Ambient room light	0 $\mu\text{W}/\text{cm}^2$
3 feet from air intake	Ambient room light	0 $\mu\text{W}/\text{cm}^2$
< 1 inch from air intake	With Air Cartridge not installed	7-10 $\mu\text{W}/\text{cm}^2$
1 foot from air intake	With Air Cartridge not installed	0 $\mu\text{W}/\text{cm}^2$
3 feet from air intake	With Air Cartridge not installed	0 $\mu\text{W}/\text{cm}^2$

Summary: The EnviroKlenz Air System Plus deploys safety mechanisms and a design that does not allow fugitive UVC to escape the air system cabinet with readings of 0 $\mu\text{W}/\text{cm}^2$ when correctly set up and operational in an indoor environment in both light and dark conditions from various distances.

Even if the system was set up incorrectly, the amount of UVC that would escape from the system is consistent with outdoor light exposure.

Other Safety Features:

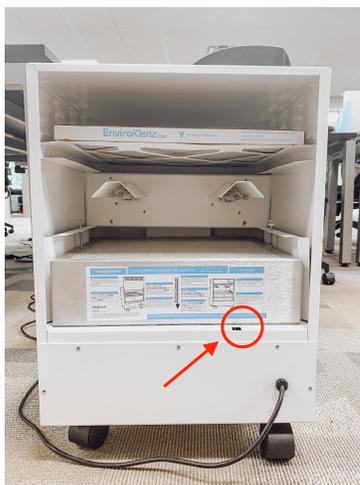
No Ozone production:

The UVC Lights, or germicidal UV, used by EnviroKlenz are low-pressure lamps, more like a fluorescent lamp, with a specific wavelength of 254 nm (1182.5 THz). To create ozone from UV, the light wavelength would need to be in the range from 160-240 nm. Since the EnviroKlenz Mobile Air System uses germicidal UV at a wavelength of 254 nm, it is outside of the ozone producing range and extremely effective for destruction of viruses and pathogens.

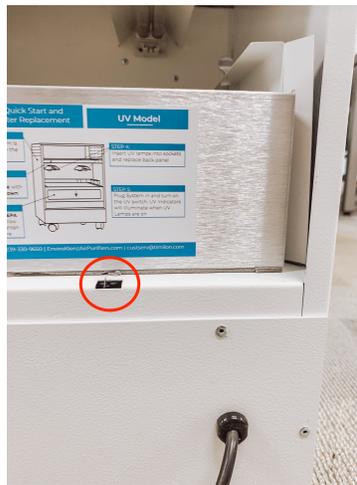


Back Panel Safety Switch:

The EnviroKlenz UV Air Purifier is equipped with a safety switch which prevents the air purifier and UV lights from turning on unless the back panel is securely in place. Additionally, if the back panel is removed while the lights or air purifier are on, the safety switch is triggered, and both the UV lights and air purifier will shut off immediately. This prevents individuals from accessing the UV and makes it ideal for even classrooms or busy areas.



Location of the Safety Switch



Safety Switch Activated when Panel is Removed



Safety Switch Not Activated when Panel is in Place