



Sanuvox UV Bio-Wall 5 Lamp In-Duct Mounted Ultraviolet Air Purifier

The Bio-Wall is a series of 5 Anodized Aluminum Parabolic Reflectors arranged in a 5 inch diameter circle with the UV Lamps facing outward. The High Intensity UVC lamps are held inside the Anodized Aluminum Parabolic Reflector by stainless steel spring clamps, so that in excess of 90% of the total UVC generated by each lamp is reflected outward. Installation can be either horizontally or vertically in the duct where the air will pass parallel to the Bio-Wall.



The reflectors are bolted together to a 3.25 diameter anodized aluminum disk at each end of the extrusion with stainless steel bolts. A threaded stainless steel tapered rod extends from the middle of each end to attach the Array to an anodized aluminum support. An anodized aluminum cone is used to cover the aluminum disk to minimize static pressure in the duct.

The UV Lamps will be 40 inches, 50 inches, or 60 inches in length. The length and number of Arrays will be determined by:

- The desired % Kill on the contaminant.
- The type of contaminant to be treated.
- The size of the duct to be treated.
- The velocity of the air in the duct at the area to be treated.
- The % of outside air.

The High Intensity UVC Lamps are of the low-pressure (2.5 Torr) mercury laden argon-neon type that incorporates a Getter assembly to reduce and control the mercury levels. The Getter assembly absorbs inner lamp contaminants, which would typically reduce output and have a bearing on overall lamp performance and life. The UVC Lamp is a pure fused quartz type 219 shell, properly doped with Titanium Oxide in order to filter out 99.99% of the 185 nm wavelength.

The UVC net output per Lamp (for 60" Bio-Wall) is at least 580 microwatts/cm² at 36 inches in the 245 nm to 266 nm band while operating in an air stream moving at 400 fpm that is parallel to the lamp.

The UVC Lamp design is based on a 2-pin type connection, hot cathode, T6 (19 mm) diameter. To effectively irradiate the selected duct area, the UVC Lamps are mounted on geometrically adequate, parabolic shape, back-reflectors to redirect at least 90% of the total emitted UVC from the Bio-Wall. Each reflector is built with a heavy single piece anodized aluminum extrusion, aerodynamically shaped to be capable of withstanding fast air velocities up to 3500 fpm without wobble, vibrations or noisy whistle.

The number and size of the Bio-Wall depends on duct size, air velocity and the desired % kill.

Example: For a 94% kill in a 36" x 36" duct, with the air moving at 700 FPM, one UV Bio-Wall 60" long is required. The Bio-Wall is installed in the center of the duct with Aluminum attached to the duct-work for added reflectivity.

The % kill is based on Mycobacterium tuberculosis. Biological contaminants vary in UV dosage needed to destroy them. Calculations are based on contaminant's individual UV dosage required, air velocity, duct size, % of outside air, intensity and length of the Bio-Wall.

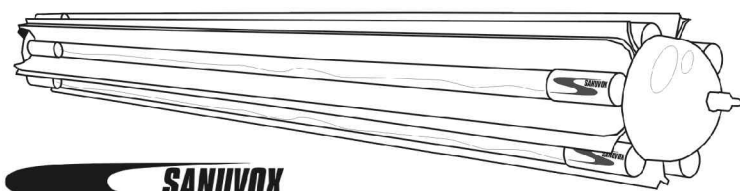
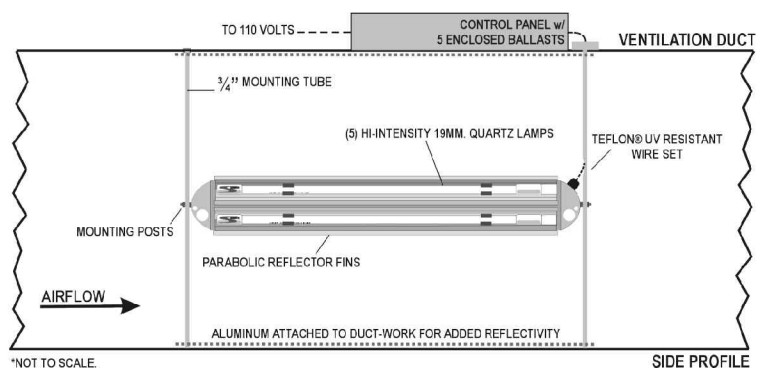
Mycobacterium tuberculosis requires 50% more UV dosage to kill than Bacillus anthracis (anthrax bacteria). All efficiencies and % kill are based at the END of the lamp life which is 17 000 operating hours.

The inside of the duct where the array will be installed, must be lined with aluminum to reflect the UV intensity back into the duct. The aluminum must have a minimum coefficient of reflection of 85%. Either aluminum sheets or Reflectix Inc. part number XSBW3 Foil/bubble or equivalent may be used.

The Ballasts are electronic type, instant start with a power factor greater than 0.90 and an energy conversion of at least 75%, and are mounted in an aluminum box external to the duct. They are available in 120V AC, or 277V AC, 50-60 Hz and are able to operate reliably in environments ranging from -20° F to 158° F. The Electronic Ballast carries a 2-year warranty. Each ballast will be supplied with lamp connectors and each array will be supplied with 5 color sets of 20 ft. 18 Awg UL 1331 & CSA I A/B Teflon Wire.

A Resettable Hour Accumulating Counter, "Lamp On" LED Indicator for each Lamp, and an Internal Buzzer to indicate a Lamp Out condition is installed in the Ballast Box. The High Intensity UVC Lamp is guaranteed for 12 000 hours in Normal Service Applications, 10 000 hours in Severe Service Applications. Recommended lamp change out is 17 000 hrs.

SAMPLE INSTALLATION



FORM# BIO-WALL