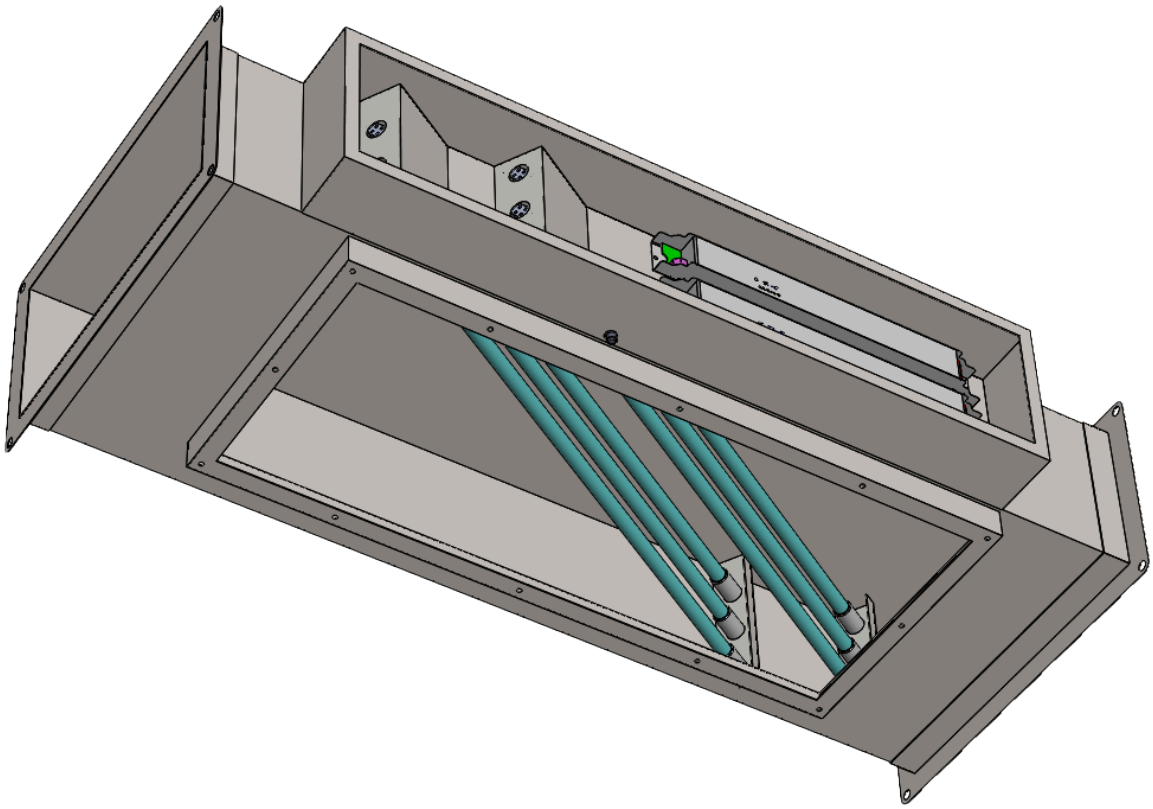
Halton FCU – PFCU UVGI



Overview

- Single-stage air purification unit against pathogens such as bacteria and viruses
- UVC light
- The service life of UVGI lamps is approximately 13 000 hours
- No mechanical filtration
- Low-pressure loss
- No need to increase the fresh air amount on board
- Up to 9 m/s duct velocity
- 2 m/s duct velocity optimal for performance
- Scalability allows handling even large air volumes
- Typical single pass pathogen deactivation performance 90% (Log1)
- UVGI tubes, ballasts, cabling and controls integrated into a single device

Operation principle

UVC-light radiation can be used to destroy harmful pathogens, such as bacteria and viruses. 200 to 300 nm wavelength radiation is strongly absorbed by living organism's nucleic acids (RNA and DNA) which are damaged in the process. This is also called Ultraviolet Germicidal Irradiation (UVGI).

Fluorescent UVC light tubes produce 253.7 nm wavelength radiation. In this kind of air purification application, UVC light tubes are installed inside of air duct. Radiation reduces the number of pathogens in airflow.

The general scientific consensus is that viruses are very susceptible to UVC radiation and even small radiation doses can inactivate viruses. Radiation dose is the factor of radiation power, distance to radiation (surface area) and residence time in the irradiation zone. Lower flow velocity increases residence time. This is optimal for performance.

Halton Marine UVGI tubes have been tested at Helsinki University against test pathogens. UVGI tubes are of the type that does not produce ozone.

Dimensions

UVGI device for Cabin FCU

- 240 x 115 mm, length 420 mm
- UV Power 11 W
- Electricity consumption 40 W
- Can be tailored according to duct and FCU size

UVGI device for Public FCU

- 350 x 170 mm, length 1000 mm
- UV Power 66 W
- Electricity consumption 200 W
- Can be tailored according to duct and FCU size