

# 2023 Summarized Guidelines for UVGI fixtures

designed and tailored for ease of  
maintenance and monitoring

Proudly South African brand Established and Trusted since 1993



→ **END  
TB**

WORLD TB DAY MARCH 24

*Sani*®

*UV-C for what you don't see*



# Foreword

Understanding and awareness around Tuberculosis isn't anything new. World TB Day on March 24. This annual event commemorates the date in 1882 when Dr. Robert Koch announced his discovery of *Mycobacterium tuberculosis*, the bacillus that causes tuberculosis (TB). Seen by many as an epidemic, TB is a global Pandemic.

Going forward 2023 – 2030 the **EndTB** project is determined in reducing this risk. Without detailing the various strategies and procedures relating to TB. The purpose of this document is to provide insight and assistance with regards to UVGI prevention within over populated or high congregate Indoor environments.



- Our company started its development from within the TB industry.
- This year 2023 marks 30 years of education and growth around preventative solutions.
- Sani UV-C is recognized as a trusted supplier of durable UVGI fixtures manufactured in South Africa.
- Summarized in this document is our explanation and guidance for an approach in applying UVGI for efficacy, cost and sustainable maintenance.

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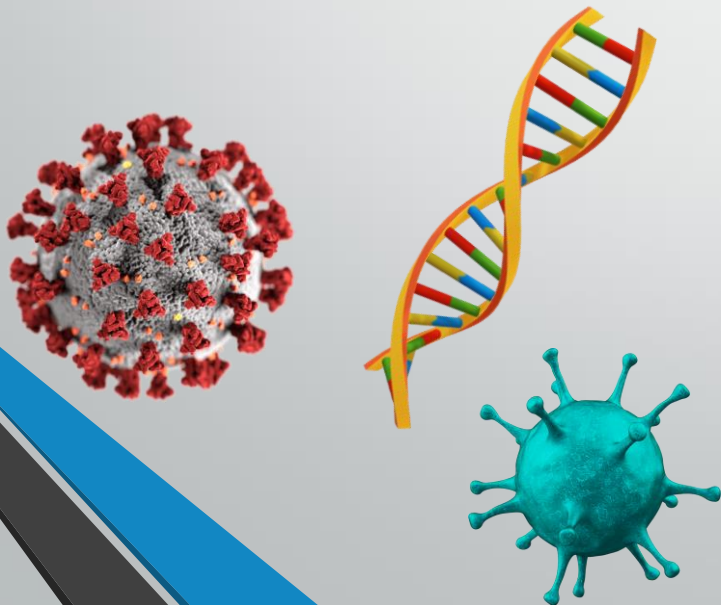
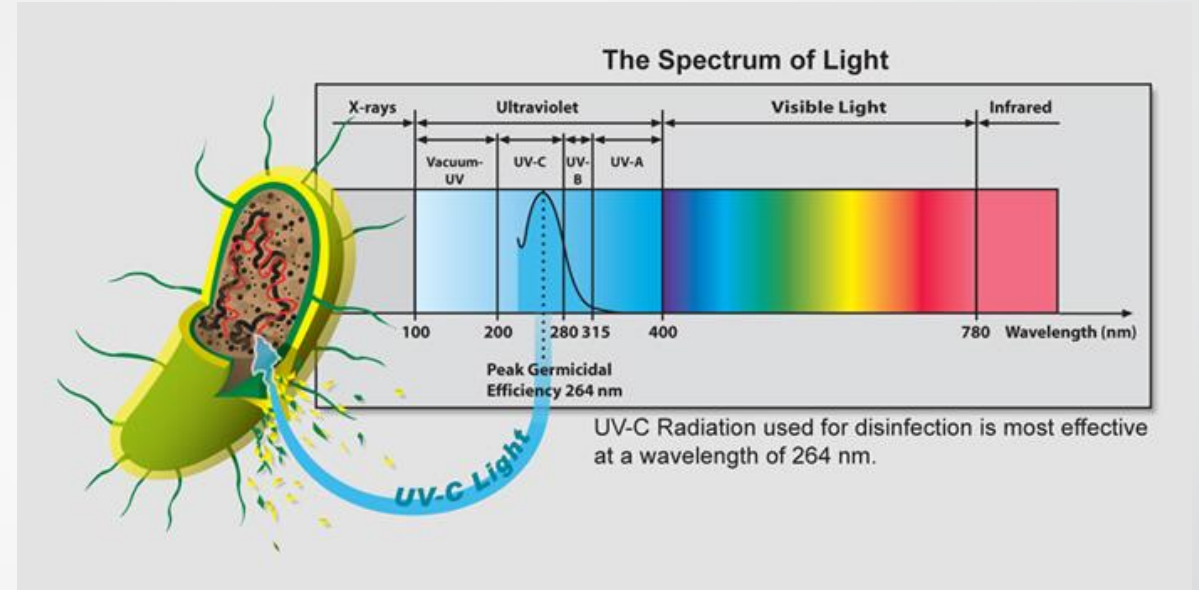


## Registered Trademark info

*Sani UV-C for what you don't see* is a registered trademarked brand and grateful for the trust that people place in our products, services, and experience. These Trademark and Brand Guidelines within this document and related intellectual property as well as its services are for the trust that they represent. Only our known Service providers are allowed to make use of the information for marketing, clarity and usage of our brand, information and assets. Sani UV-C reserves the right to take action as necessary to protect them and, as a result, protect its Service providers, customers and the public.

# UVGI and Infectious disease

- Infection prevention and control (IPC) is a practical, evidence-based approach preventing patients and health workers from being harmed by avoidable infections. Effective IPC requires constant action at all levels of the health system, including policymakers, facility managers, health workers and those who access health services. IPC is unique in the field of patient safety and quality of care, as it is universally relevant to every health worker and patient, at every health care interaction. Defective IPC causes harm and can kill. Without effective IPC it is impossible to achieve quality health care delivery.



UVGI or Ultraviolet light is a proven tool and its effects on destroying or deactivating viruses, bacteria or fungi is well documented.

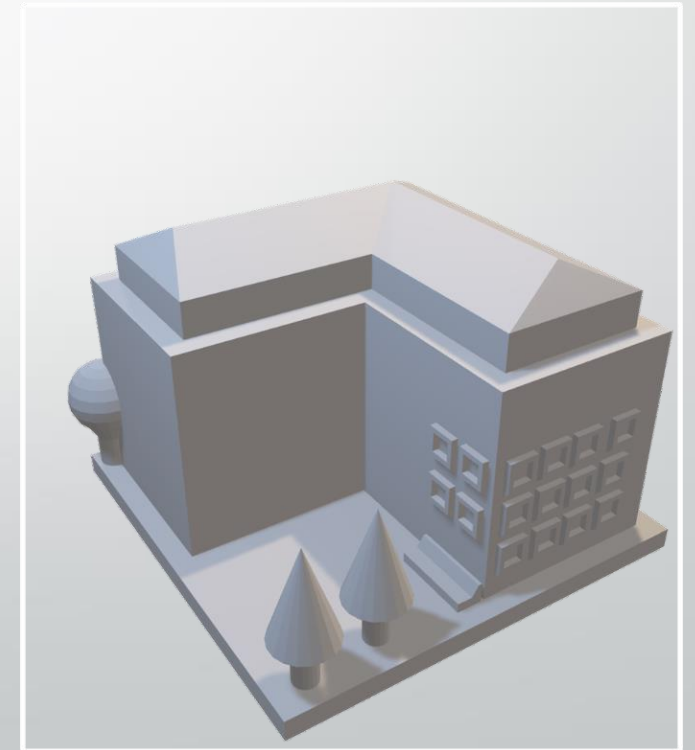
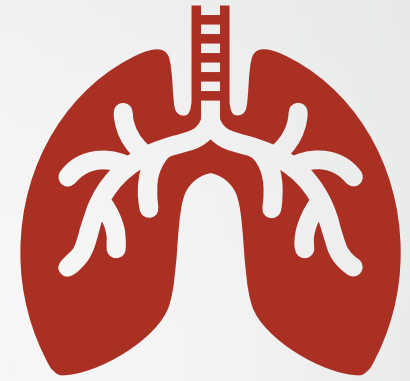
Understanding an environment and its risks have great importance prior to any UV application introduced.

# UVGI and Infectious disease

Preventing Nosocomial Person to Person infection when looking at a building or environment requires a specific approach.

Building air requirements guide [ASHRAE-D-86170](#) details information highlighting the ventilation requirements for indoor areas. High occupancy overpopulated areas when accessed and having poor ventilation can make use of UVGI to offer added sanitized air changes, reducing person to person nosocomial infections. These fixtures when applied technically will have a calculated expense in preventative risk. [IUVA Draft Guideline IUVA-G02A-2005](#)

[ANSI/ASHRAE/ASHE Addendum c to ANSI/ASHRAE/ASHE Standard 170-2021](#)



## Sani UV-C brand and services

Finding an educated ultraviolet solution that is cost effective and low maintenance is made simple when purchasing our fixtures. We place great focus on our approach.

Sani fixtures supplied with supporting documentation to ensure safety and guidance for long term maintenance and local support.

For more information on **Sani UV-C** and technical support can be done by visiting [www.sanibrand.co.za](http://www.sanibrand.co.za)

Summarised below we approach the used of Ultraviolet fixtures and the information that is needed to allow our technical specialists to provide an adequate solution.

Summarized as seen in the UVGI approach

- With regards to a Pre- assessment of various areas.
- Indoor air Improvement
- Surface Sanitation
- Emergency vehicles
- TB Preventative applications



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# Utilisation of UVGI – approach

There are much needed Steps prior to any UVGI application. This brief summary allows for a basic pre- assessment to take place. This allows for the brand to provide the needed support and information.

- Mechanical Ventilation
- Ambient or Poor ventilated indoor areas
- Vehicles
- TB Audiometry
- Whole room Surface sterilisation
- Installations and Safety
- Maintenance and Monitoring





# Mechanical Ventilation UVGI

Added ventilation UVGI fixtures for an HVAC or AHU system as seen on the HVAC basic diagram could vary.

Summarising the areas of concern following

**a- e** on the diagram would allow us to determine the area best suited.

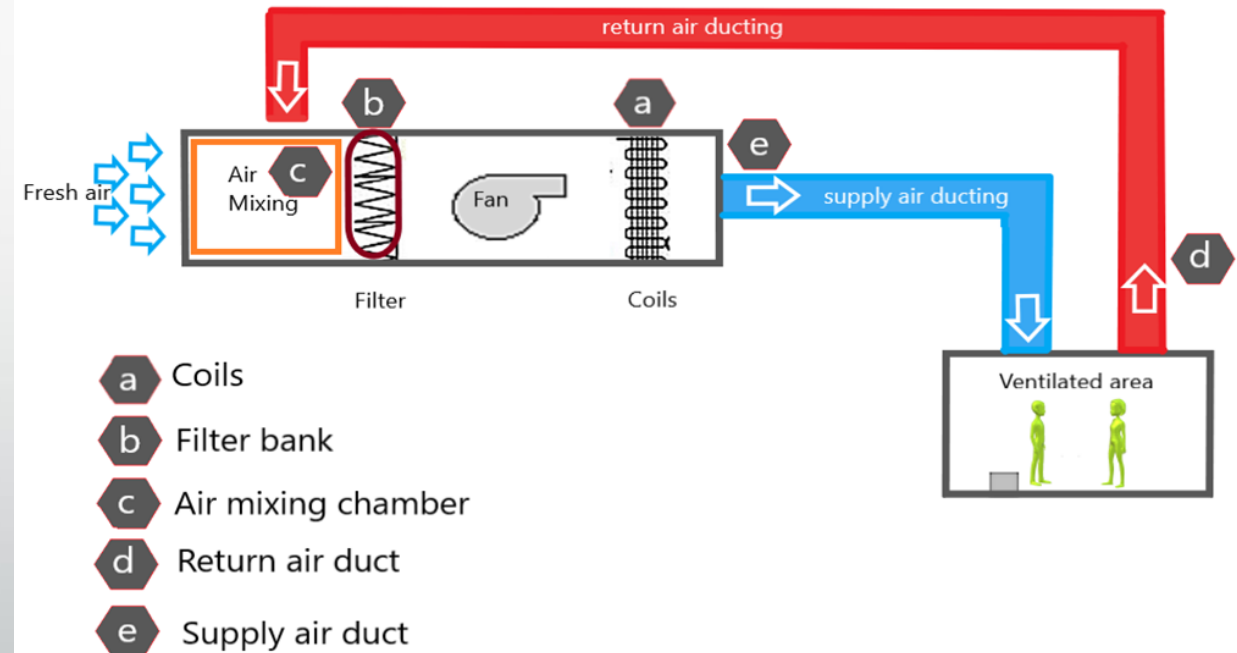
- a
- b
- c
- d
- e

## Ventilation type or considered area Width length

- Dimensions or drawings
- Velocity m3/s
- *And a suitable diagram will allow us to provide suggestions.*

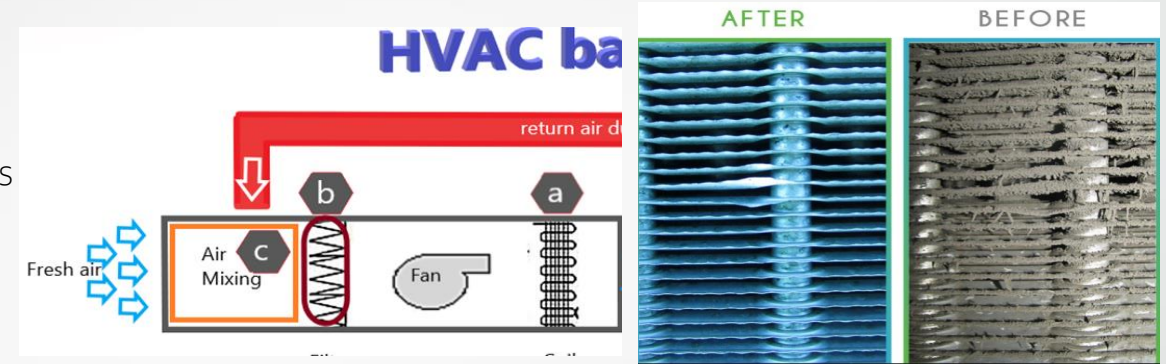


## HVAC basics



# UVGI Cooling coils

Referring to area a ,b and c on the HVAC basic diagram will make use of a Sani Intercooler fixture. These fixtures are designed to emit UV-C directed towards a coil (a), filter (b) or placed within the air mixing chamber (c).



For areas that don't have suffice area space for the Intercooler would then look at Sani duct units on the Return or Supply air ducting.

**Suitable Intercooler units are determined by area of the coil fins and air velocity. Drawing the area allows us to plot which unit is most suitable.**

**Providing us with detail will allow us to supply a needed fixture.**

- Design or area dimensions
- Velocity
- Application



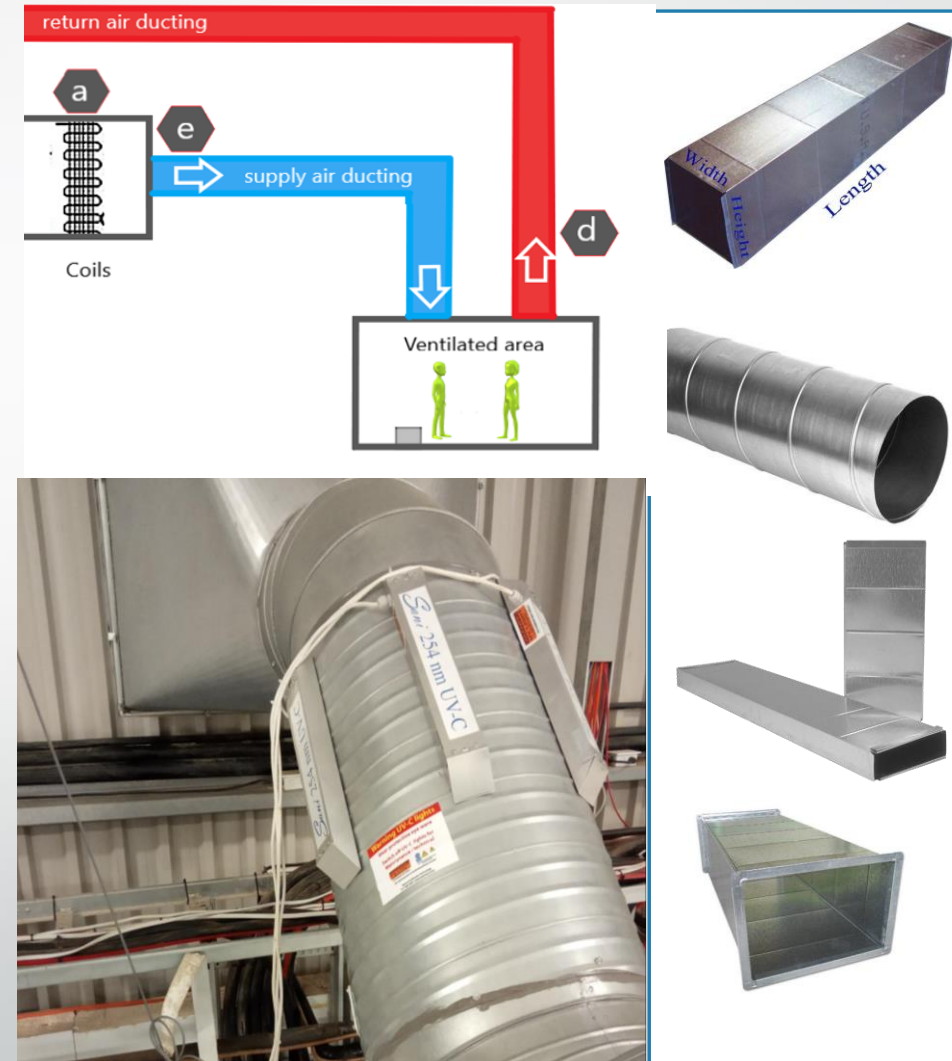
- Intercooler 145 W double (290W) – SA07
- Intercooler 95 W- SA06
- Intercooler 145 W double (435W) – SA08

# Supply or Return air ducting

As referred to in the HVAC basic diagram the areas seen as (d) and (e) are considered. We make use of the Sani duct UVGI in the Supply or Return duct areas when the Coils, Filters or Air mixing chamber is found to be in accessible. Providing us with details on the ducting will allow us to provide a suitable fixture

**Supplying information on the duct system and its dimensions will allow us to supply a suitable product where needed.**

- Sani Duct L – Shape
- Single 95 W- SA12LS
- Double 190 W -SA12LD
- Sani Duct Z – Shape
- Single 95 W- SA12ZS
- Double 190 W- SA12ZD
- Sani Duct U- Shape



# Ambient or poor ventilated indoor areas



Open Lumineers



Enclosed Lumineers

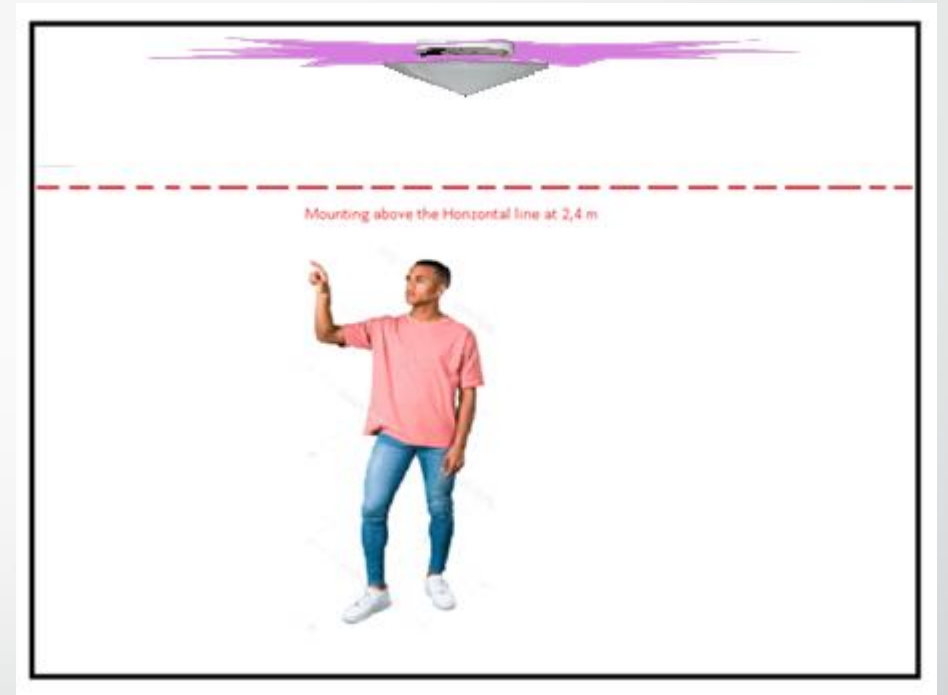


# Open UVGI Lumineers

- Ceiling / Pendant type units the UV-C is emitted out of the fixture. These units are positioned above the horizontal line and any raised platforms like a sales counter Height should be checked. The units are Designed to manage the upper air and coffer ventilation or turbulence to obtain sanitized air movements.

The Sani Ceiling disk covers a maximum of 6m x 6m area at a installation height of 2.7m.

Supplying area dimensions or a complete floor plan will allow us to propose more information. Its also suggested to be aware of anything that could be in the area of irradiance.



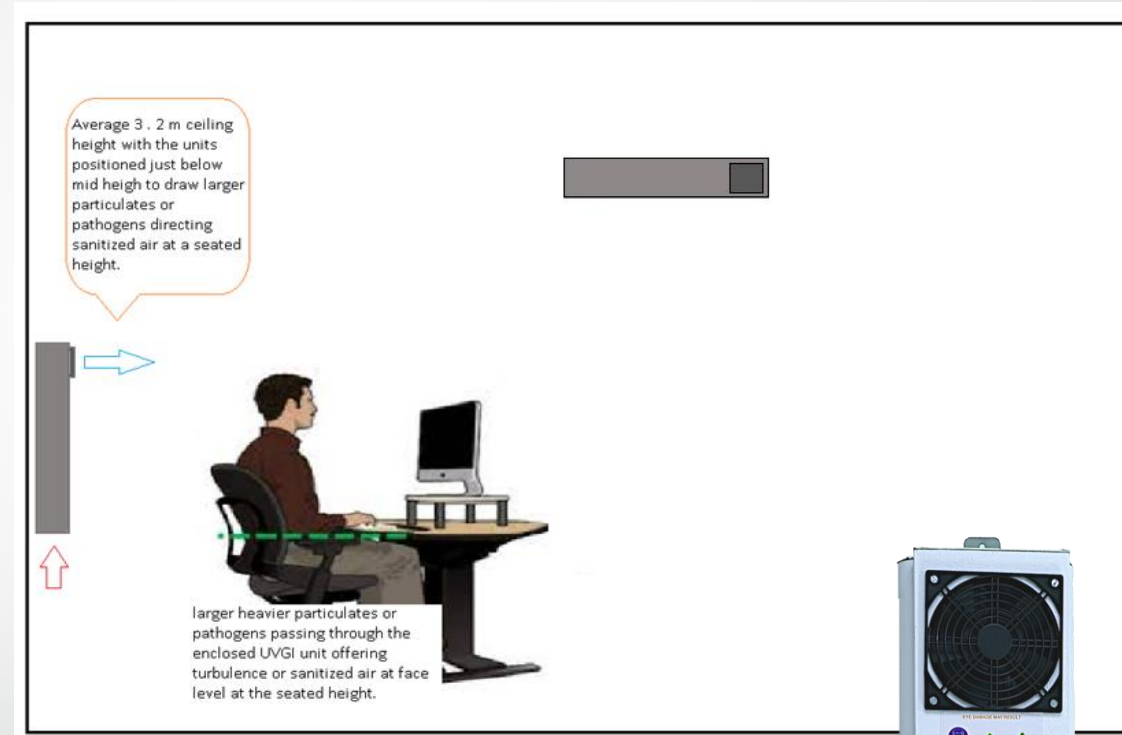
Sani Ceiling disk - SA01

# Enclosed UVGI Lumineers

Room air cleaners involve application of enclosed UVGI lamps in housings, through which air is recycled. The advantages of this application are the safety aspects with the lamp already within these units and do not emit irradiance outside of the unit. These units are generally positioned vertically some areas would have them mounted horizontally. Its best to ensure that if mounted horizontally that there is no opening with the lamp visible and in position where someone can look into them.

The fan air flow rate can be seen on a manufacturers data sheet which should be applied to a volume to achieve 6 or more air movements per hour.

Supplying area dimensions or a complete floor plan will allow us to propose more information.

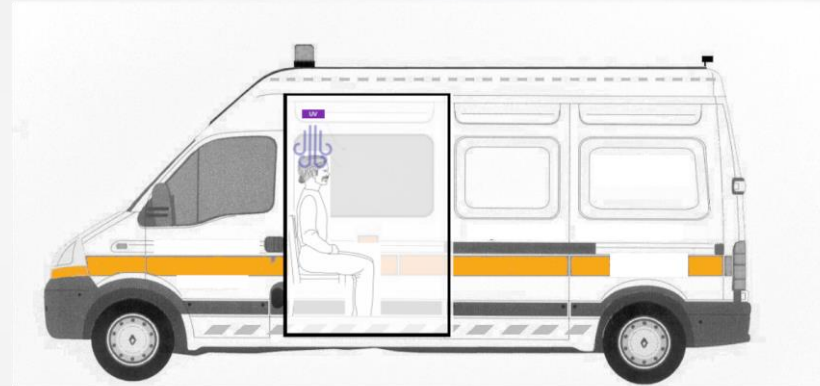


- Sani 55 Wall mount – SA05
- Sani 18 Wall mount 220 V – SA04



# Vehicles

Within emergency vehicles the use of UVGI wall mounted units have played a crucial role in reducing person to person infection. This control measure provides sanitised air as well as a reduction log on surfaces. With staff and patient prevention through sanitised air, this is not to be compared or replaced by fogging or surface sanitation.



- Sani 18 12V – SA03
- Sani 18 220 V – SA04
- Sani 36 – SA 51

Type of vehicle will allow us to provide the suggested application





# TB Audiometry

Hearing loss is effected by TB. Audio booths seen in many clinics, mines or factories make use of monitoring and testing hearing which helps determine infection. Our focus has been to reduce the infection in recirculating air for these booths. With existing booths the areas make use of wall mounted or Ceiling mounted fixtures within the clinic or testing area.

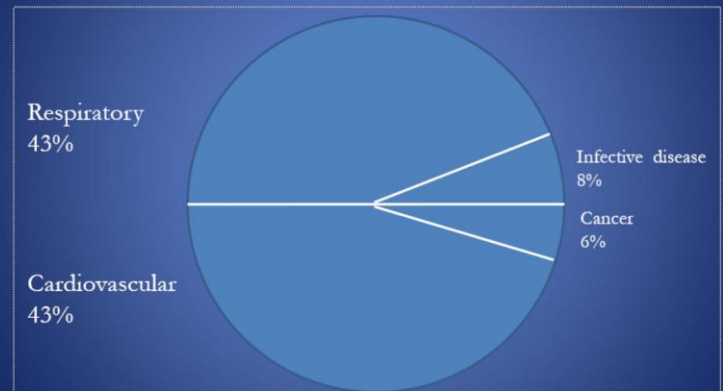


Installed in the circulating air duct.

Sani Audio booth unit – SA02



## LOST EARNINGS FROM DISEASE (U.S.A. figures)



Supplying area dimensions or a complete floor plan will allow us to propose more information.



# Whole room Surface sterilisation

Various disinfection methods used in a medical setting are applied to ensure disinfection with long term inactivation is found. In practice it depends on the required level of disinfection and on the nature of the materials which method of disinfection is recommended.

For example

*Biguanides*

*Acids*

*Halogens*

*Alcohols*

*Oxidizing Agents*

*Aldehydes*

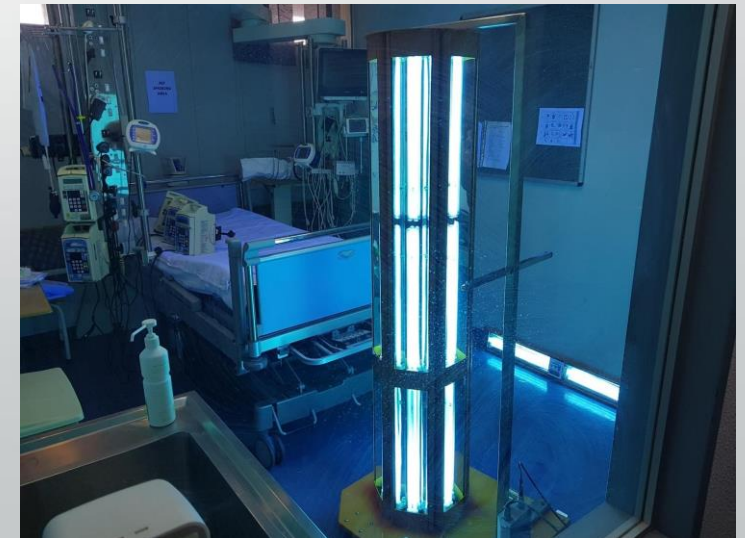
*Phenols*

*Alkalis*

*Quaternary Ammonium Compounds*

**The trend is that methods that do not require manual action ("no-touch" disinfection) are increasingly preferred over manual disinfection with wipes or chemicals.**

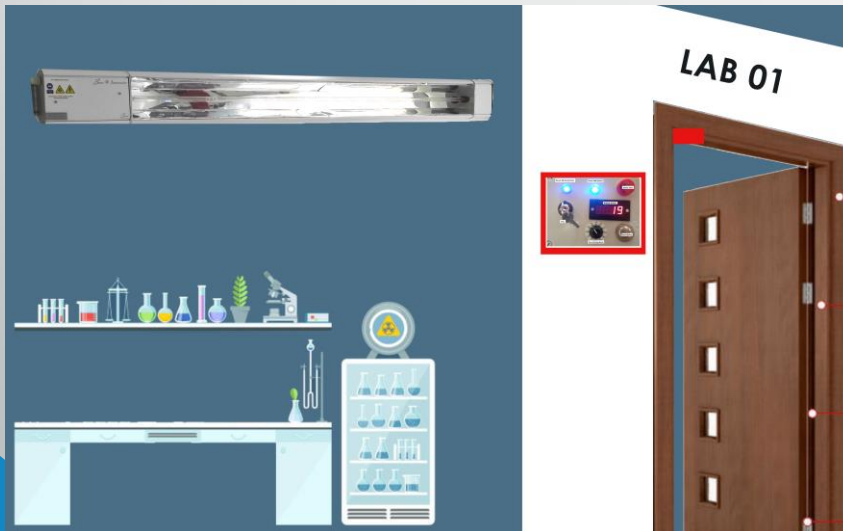
**When looking at Chemical free, residual free disinfection applications there has to be valid cost, time and efficacy advantages with not replacing an existing method totally but by substituting it where Infection control departments advise.**



# Whole room Surface sterilisation

With regards to surface sanitation we provide detailed information on Safe operation and effective dosage.

Supplying area dimensions or a complete floor plan will allow us to propose more information.



- Sani Hand Held device –SA15

Sani Mobile Ultraviolet remote sanitation

- MURS- SA17
- MURS mini- SA16

Key controlled Whole room sanitation with the use of Ceiling mounted UVGI

- Key Control switch-KS33
- Sani Intercooler – SA08
- Sani Intercooler – SA09

# Safety First

The Installer ensures that all units will be lamped or powered on prior to the testing for hand over.

Any or all staff installing will have protective eye wear with body or skin covered to prevent exposure to UV-C.

UV-C, UVGI can cause severe ark-eyes if Eyes exposed to anyone not wearing Plastic eye wear and contact with skin can be harmful. Sunglasses or Spectacles are not safe for use. Plastic Safety Eyewear is suggested.

Users may not realize the danger until after exposure has caused damage four to 24 hours afterwards. Chronic effects are long-lasting and cumulative and may not appear for years including skin cancer and ocular cataracts.

All labelling and warning signs are position and visible prior to entry of area.

Wearing N95 Masks while doing installations would be advised to prevent any installed from falling ill due to HAI (hospital Acquired Infections) or microbes within a HVAC system



[Sani documents supporting fixtures for the required application](#)

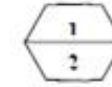
# Installations

Prior to the installation the units should have an installation position or layout provided on a floor plan or diagram along with documentation for the installation provided by the supplier.

- An inventory list should be made of the installation items ,any signage or warnings that are to be mounted.
- Heights of installation or positioning should be as per the installation instructions which should show that no harm or damage is to be a concern in the future.
- Each UV-C Device should have a serial number or unit number that is to be supplied as per the Installation Spreadsheet / safety and installation test info.
- Any alterations to the instructions provided should be consulted with the supplier / the client.
- Testing or lamping of the UV-C fixtures supplied should be done after the installation is made with following the safety guidelines.
- Following the maintenance file documentation that is required for hand over should ensure safe guidance and procedures.

Sani documents supporting fixtures for the required application

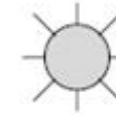
## GENERIC LAYOUT SHOWING TYPICAL WALL AND CEILING MOUNTED FIXTURE PLACEMENT



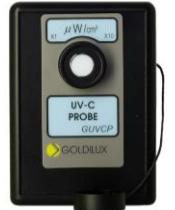
Value 1 denotes ceiling height (m)  
Value 2 denotes room area (m<sup>2</sup>)



Symbol denotes wall mounted fixture



Symbol denotes (pendant) ceiling mou



# Maintenance and monitoring

Up to date maintenance file will ensure all future maintenance and monitoring is up to date.

The handover document example can be seen on the right.



## Maintenance file Documentation for Handover

- o Data sheet of Germicidal units
- o Lamp Type to be understood
- o Installation instructions/ Operation and Maintenance Manual of device from manufacturer
- o The operating instructions and advice of UVC system designers
- o general guidelines for initially verifying and maintaining adequate system performance.
- o Safety acknowledgement of installer
- o Floor plan of pre assessed area showing suggested installation position
- o Installation Spreadsheet / safety and installation test info
- o COC certificate
- o Maintenance and monitoring
- o All UVC systems require periodic inspection, maintenance, and lamp replacement to ensure proper system performance. Whenever maintenance is performed on UVC systems, the appropriate safety guidelines outlined.

Sani documents supporting fixtures for the required application

## Service provider info



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For any enquiries or guidance, Annika is recommended as a Trusted Service Provider and can be contacted for any Sani UV-C info.

# References

- [TB Elimination Champions | World TB Day | TB | CDC](#)
- [World TB Day 2023 Campaign | Stop TB Partnership](#)
- [Infection prevention and control GLOBAL \(who.int\)](#)
- [March Focuses on Tuberculosis Awareness - Comm... | UWC](#)
- [Health Research Policy and Systems | Home page \(biomedcentral.com\)](#)
- [TIMS > Who we are > About TIMS \(timssa.co.za\)](#)
- [The Journal of Infectious Diseases | Oxford Academic \(oup.com\)](#)
- [Setting priorities in health research using the model proposed by the World Health Organization: development of a quantitative methodology using tuberculosis in South Africa as a worked example - PMC \(nih.gov\)](#)