Fighting Covid-19 with UV-C Robot

HKC 香港通訊
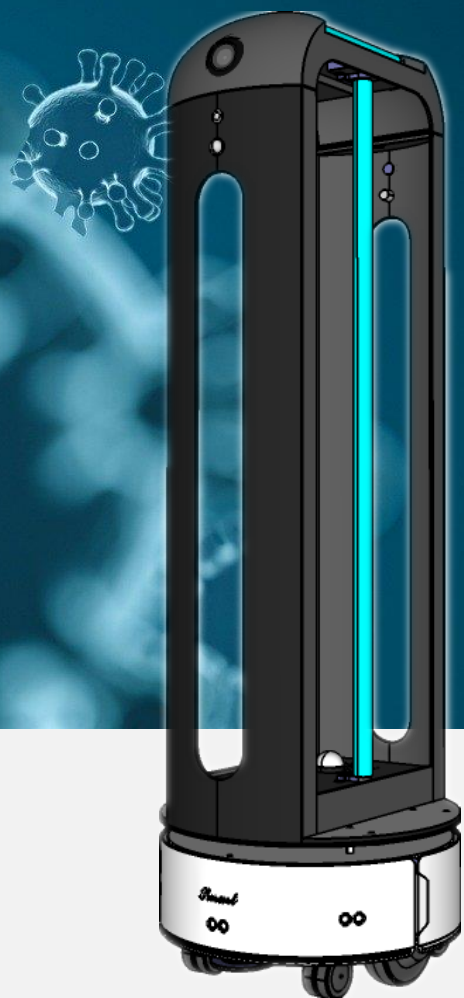
IMPROVE PUBLIC SAFETY

HKC UV-C Disinfection Robot

Dark Knight

Technical Specifications

Max Speed: 70 cm/s

Battery Charging Time: 4.5 hours

Weight: ≥30kg

Dimensions: W: 52.5 (cm) x H: 165 (cm)

Operating Time: 6 hours

Disinfection Coverage: 360 degrees

Suggested Disinfection Time: 15 min for a regular 25m square room

Connectivity: Wireless (Wi-Fi based)

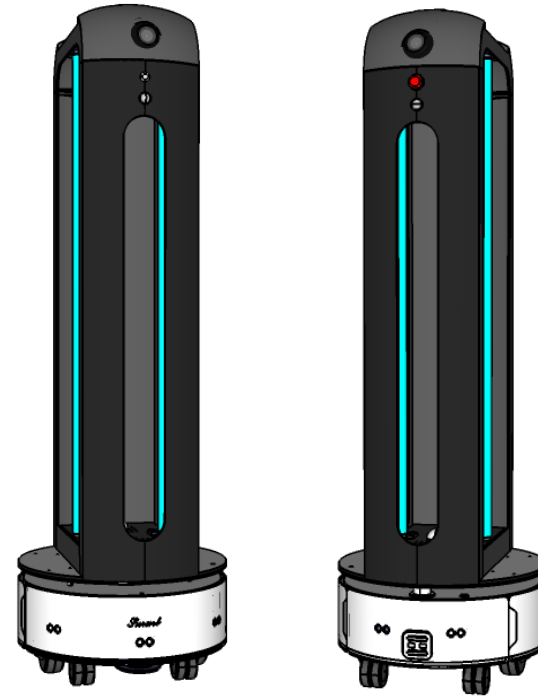UV-Wavelength: 254 nm (UV-C rays) CE Certified

No. of UVC lights: 6 – 8 optional (8W · 36W)

Charging Requirements: 220-240 VAC, 50 Hz, 6 Amps
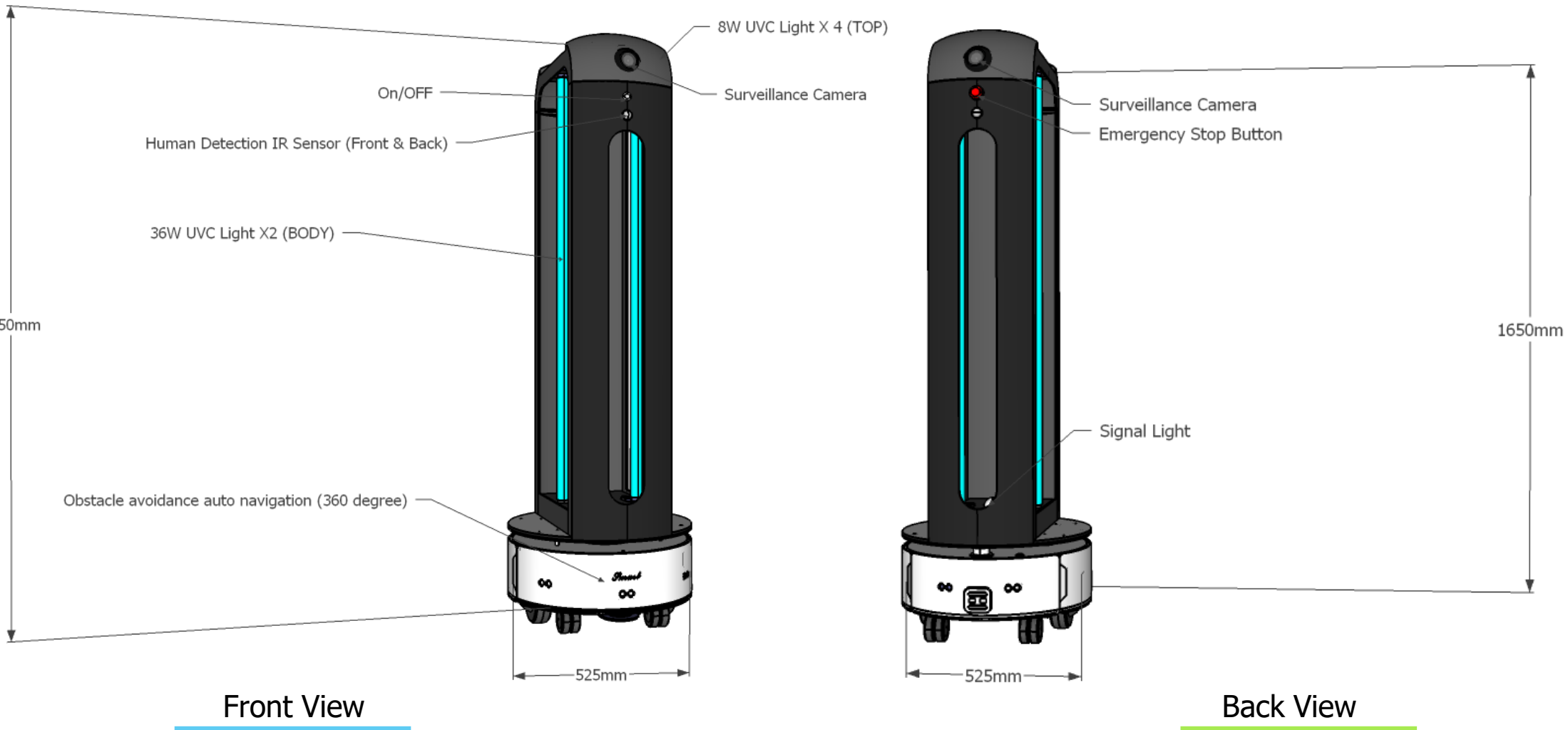
Installed with surveillance camera (Front and Back)

Obstacle Avoidance by 3D-LiDAR

Safety: IR Human Detection Sensor / Emergency Stop Button

Kills 99% of all bacteria
Disinfects in 15 min.* for a regular 25 m2
indoor room

Design Structure

8W UVC Light X 4 (TOP)

Surveillance Camera

On/OFF

Human Detection IR Sensor (Front & Back)

36W UVC Light X2 (BODY)

1650mm

Obstacle avoidance auto navigation (360 degree)

525mm

Front View

Surveillance Camera

Emergency Stop Button

1650mm

Signal Light

525mm

Back View

Key Innovations

UVC-Wavelength

254nm (UV-C rays) 6 – 8 optional (8W · 36W) CE Certified

Human Detection IR Sensor (Max. 6 meters)

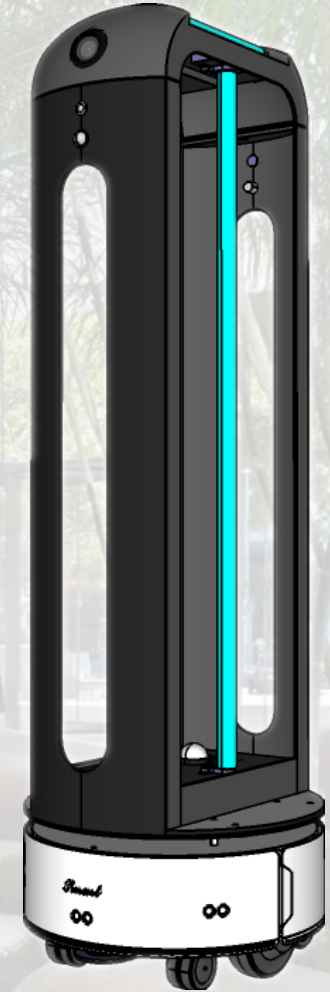UV-C lights will automatically turn off if someone approaches

Analyses environment with 3D-LIDAR

Move autonomously and avoid all obstacles

Surveillance Camera

Robot is geared up for 24/7 security patrol and mobile monitoring of indoor and outdoor venues, it sends live video and alerts to control centers.

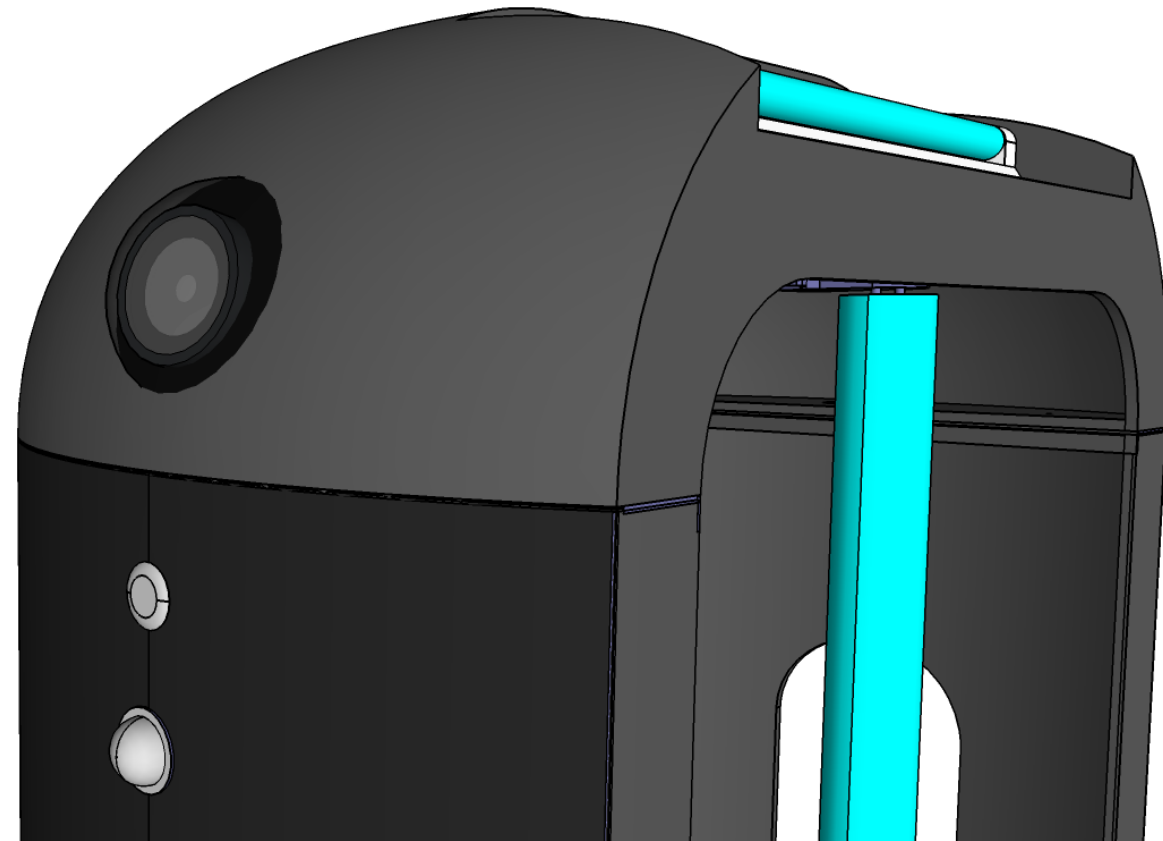Support full view and IR night vision.
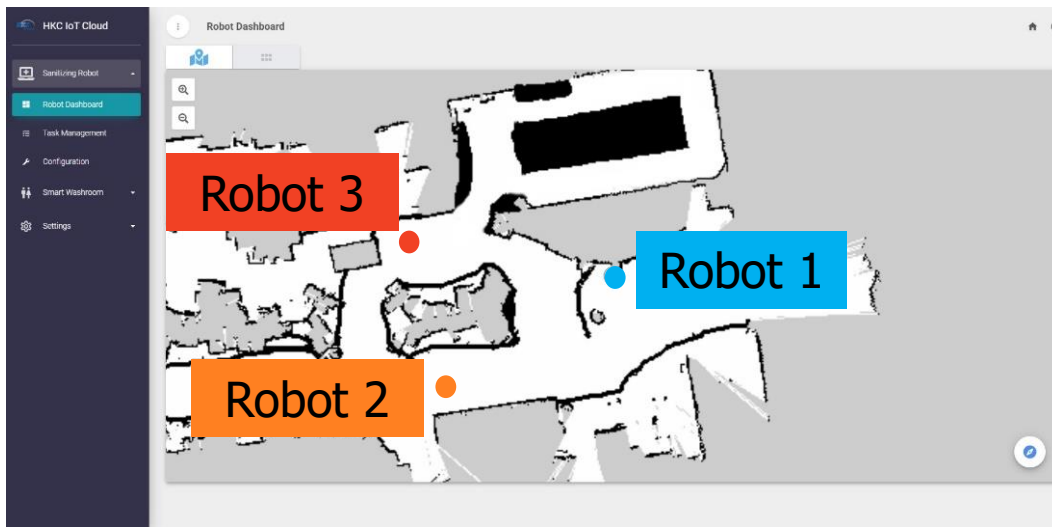
180 Degree Surveillance Camera

High resolution live video

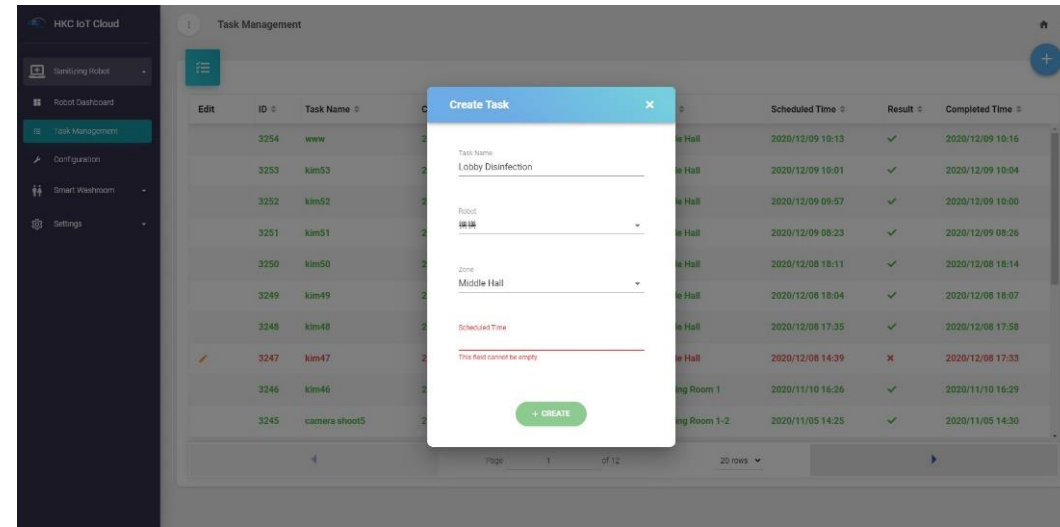Camera 180 degree control, zoom in /out

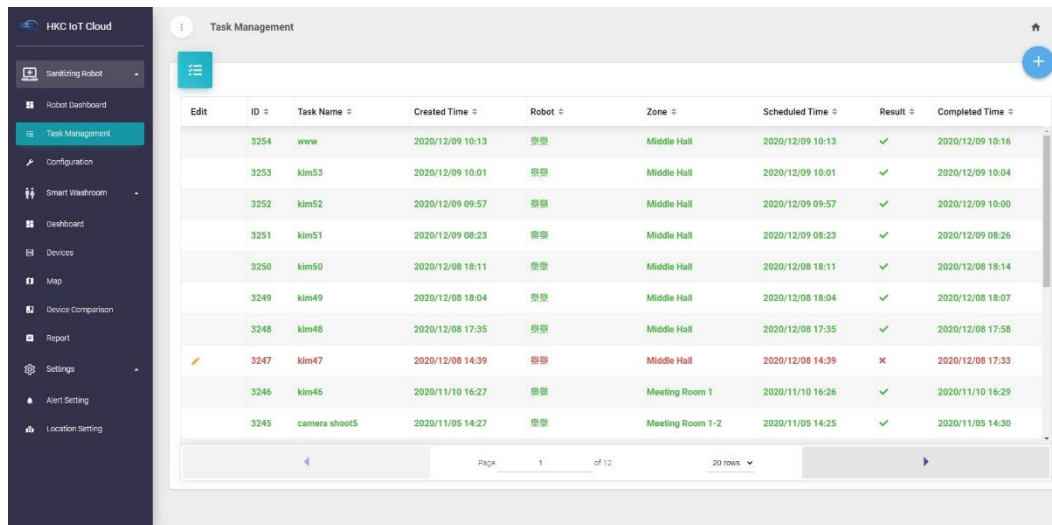Support IR night vision mode

HKC Cloud Platform with Multi Point Tracking

Multi points tracking of working robots

Easily create robot task by selecting the location and time schedule

Users can check the completion time of all scheduled task

We use Philips ultraviolet lamps

○ **Reliable UVC output over lifetime**

○ All Philips UVC low pressure mercury lamps contain a unique coating on the inner glass wall that ensures the UVC output over the useful life of the lamp never drops below 85% of its initial output

○ **Lowest mercury content for a better environment**

○ Philips has always taken the lead in reducing the amount of mercury required to operate fluorescent lamps. To dose the mercury in the lamp we use a unique mercury capsule that results in :

○ Precise dosing of the smallest amount of mercury in a very reproducible way

○ No mercury emission during manufacturing

○ Optimum lamp performance with lowest possible amount of mercury in the lamps

Solution

Bacteria and viruses spread easily in densely populated public areas, such as offices / shopping malls /cinemas / theatre / hospitals etc.

How can we take adequate defense measures?

UVC Disinfection Robot:

- A fully autonomous mobile robot emitting concentrated UV-C light onto infectious hotspots in rooms , supporting the normal cleaning routines.

- Prevents and reduce the spread of infectious microorganisms in the environment by breaking down their DNA structure.

- Safe, reliable and user friendly wireless operation as it can be operated easily by staff through online website / android app.

- Installed with human detection IR sensor, UVC lights will automatically turn off if any human being detected nearby.

- Installed with surveillance camera to perform 24/7 patrol service

- Reduce public areas' infection rates and operating costs.
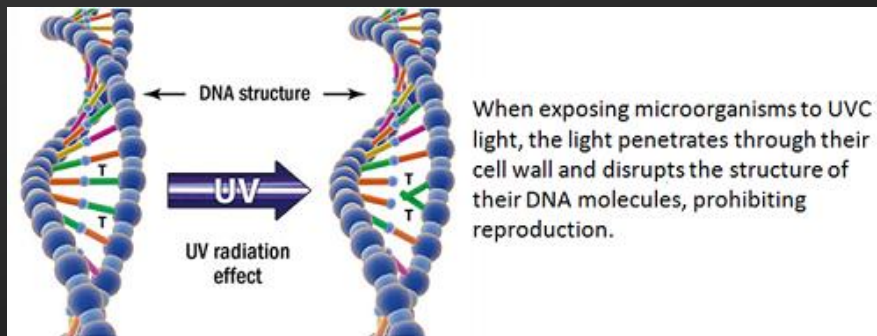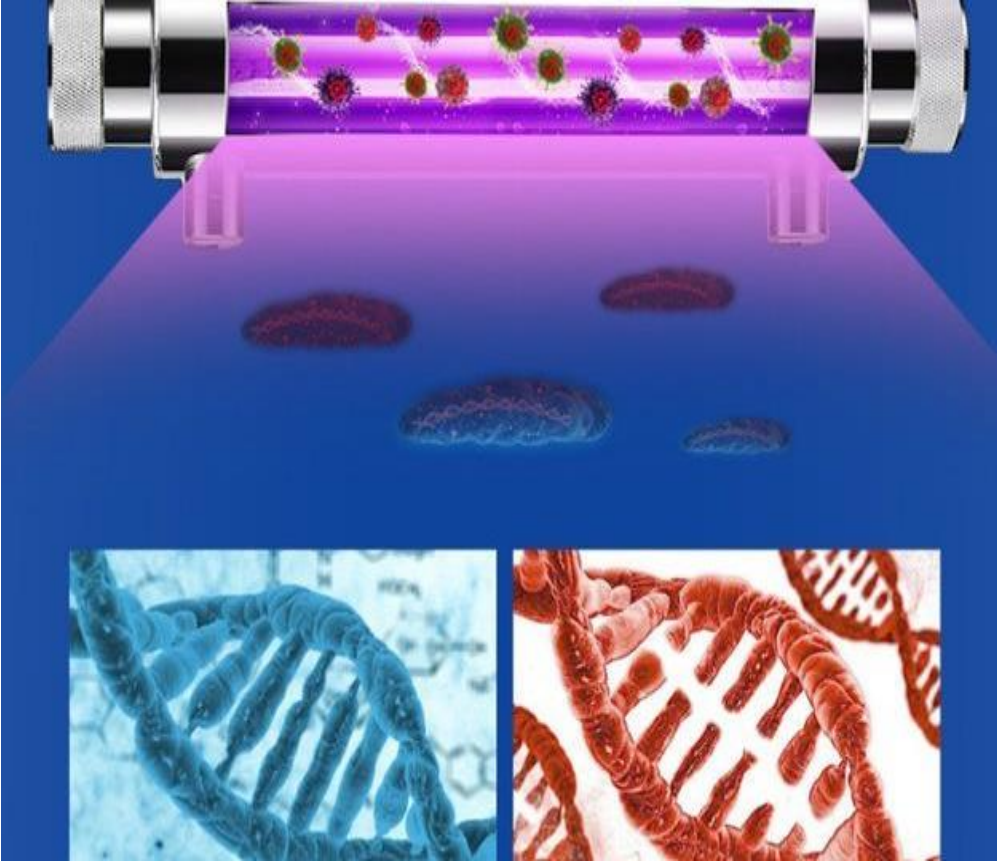
UVC light disinfection technology eliminate any remaining pathogens after manual cleaning processes, such as:

- Clostridium difficile (C.diff)

- Staphylococcus aureus

- Methicillin-resistant Staphylococcus aureus (MRSA)

- Vancomycin-resistant Entercoccus faecailis (VRE)

- Norovirus

DNA structure

When exposing microorganisms to UVC light, the light penetrates through their cell wall and disrupts the structure of their DNA molecules, prohibiting reproduction.

UV

UV radiation effect

Application Scenario

Business Hall / Lobby

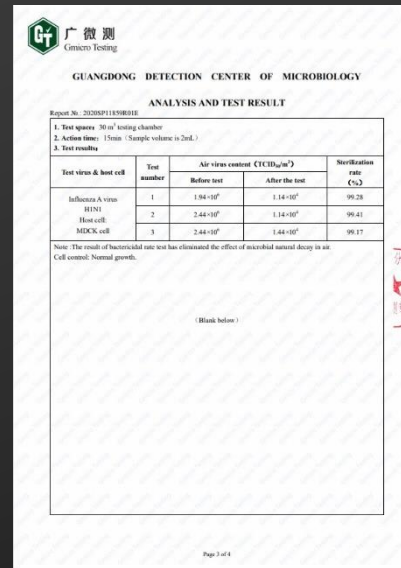Shopping Malls

Hotel / Hospital / Office

Library

Warehouse

Public Theater

Awards and certification

Outstanding Healthcare Award presented to Hong Kong Communications Co.Ltd – UVC Disinfection Robot

Hong Kong Communications Co., Ltd.

Thank You

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