

Handheld battery-operated UVC sanitation device



The CSIR has developed and manufactured a portable, detached battery-operated handheld ultraviolet C (UV-C) prototype for disinfection of surfaces. This device uses UV-C light, which is ecological and effective in inactivating pathogens on surfaces. It can be employed in areas not suitable for chemical disinfectants use, where electricity is not readily available or where long cables present a safety challenge.

DESIGN

The device comprises of a casing that houses the ultraviolet germicidal lamps designed to be handheld. The power pack is designed to be carried at the back.

SPECIFICATIONS

Irradiance of 6mW/cm² at 10 cm;
Battery level indicator;
Handheld <2 kg, powder pack < 6 kg;
Battery operation > 90 minutes
Warning sound when the device switches on
Warning sound when recommended exposure distance is exceeded.

APPLICATIONS

The technology has several applications, including uses in the mining sector, and the health and aerospace industries.

The handheld battery-operated UV-C device is proven to inactivate the listed pathogens by 99.9% at 10 cm exposure distance in 2 seconds:

Klebsiella pneumonia;
Aspergillus brasiliensis;
Staphylococcus aureus;
Salmonella typhi; and
Listeria monocytogenes.

SAFETY

UVC is harmful to the skin and eyes. The device must be used to irradiate surfaces only. It must never be used to irradiate human or animal skin and eyes. A face shield, gloves and UVC glasses must be used. A safety instruction and user manual is provided with a web link to a video user guide.

CERTIFICATION

- Efficacy – M&L Laboratory services
- Electrical compliance - The South African Bureau of Standards (SABS)
- Irradiance – National Metrology Institute of South Africa, (NMISA)

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