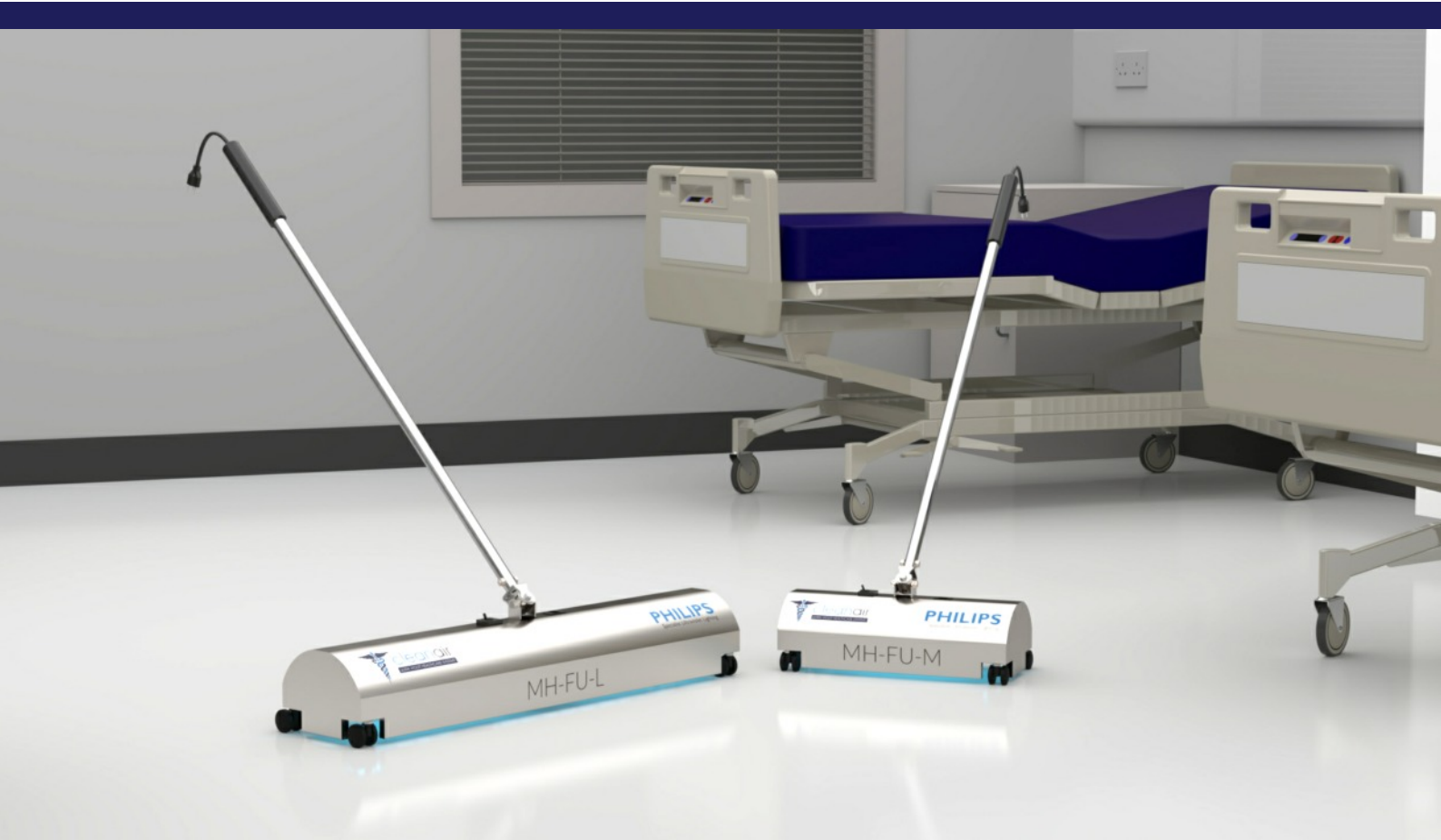




cleanair

ULTRA VIOLET HEALTHCARE SYSTEMS



ULTRA VIOLET FLOOR SANITISING SYSTEM

PHILIPS
Specialist Ultraviolet Lighting



HOW DOES ULTRA VIOLET UV-C ENERGY WORK?

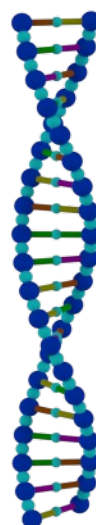
Ultraviolet germicidal irradiation is the use of ultraviolet energy (electromagnetic radiation with a wavelength shorter than that of visible light) to kill or inactivate viral, bacterial, and fungal species.

The UV spectrum is commonly divided into UV-A (wavelengths of 400nm to 315nm), UV-B (315nm to 280nm), and UV-C (280nm to 200nm). The entire UV spectrum can kill or inactivate many microorganisms, but UV-C energy provides the most germicidal effect, with 254.7nm being the optimum wavelength.

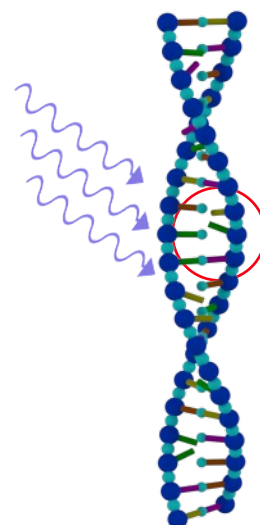
Philips Tubular Fluorescent Ultraviolet (TUV) lamps primarily create UV-C energy at a near-optimal 254.7nm by electrical discharge through low-pressure gas (including mercury vapour) enclosed in a quartz tube.

UV-C from mercury lamps is sometimes referred to as UVGI (Ultra Violet Germicidal Irradiation) to denote its germicidal properties. Although UV-C is invisible to the human eye, small amounts of energy released at visible wavelengths produce the blue glow commonly associated with UVC lamps.

Complete DNA string BEFORE UV-C



Broken DNA string AFTER UV-C



UV-C energy disrupts the DNA string preventing further growth of micro-organisms

WHY USE UV-C ENERGY TO SANITISE FLOORS?

The simple-to-understand effect of gravity alone will always place the floor of any healthcare property at risk of collecting harmful micro-organisms.

General cleaning and vacuuming of floor surfaces may not be enough to eradicate these harmful microbes, especially with frequent foot-traffic constantly adding to the problem by continually introducing bacteria, viruses and mold from the outdoors.

Studies in the USA proved that up to nine different species of bacteria were brought into healthcare facilities by the visiting public on the soles of their shoes and that bacteria living on our shoes live much longer and 90-95% of microbes are transferred to tile floors from shoes.

While disinfectant chemicals such as bleach and peroxide will disinfect floors, they may also be harmful additions to the problem. UV-C energy, emitted by Clean Air's UV FLOOR SANITISING SYSTEMS, perform an essential function in the sanitisation and disinfection of microbial dangers contained on the floor surface.



BENEFITS OF UV FLOOR SANITISERS

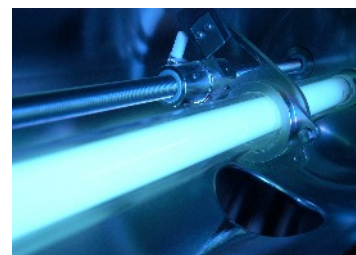


The MH-FU-M model (above) is suitable for smaller, difficult-to-clean areas such as patient rooms



PHILIPS
SPECIALIST UV LIGHTING

State-of-the-art design, incorporating PHILIPS Specialist UV Lighting technology



There is no known organism that can survive the power of UV-C energy

ULTRA VIOLET FLOOR SANITISATION SYSTEMS



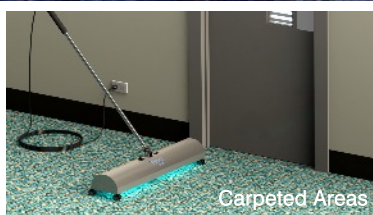
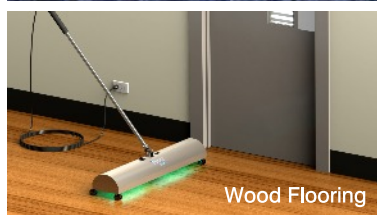
Using Philips Specialist UV Lighting technology, we have designed two different models for healthcare facilities.

The MH-FU-L system, with an effective operating width of 93cm, is perfect for larger areas such as operating theatres, corridors, dining rooms, large function rooms etc.

The smaller MH-FU-M system, with an effective operating width of 48cm, is an excellent tool for smaller areas such as bathrooms, patient rooms, special care areas etc.

Both systems will function efficiently on smooth tile or linoleum floors, carpeted areas and wooden surfaces.

With large, easy-to-use castors the UV Floor Sanitising Systems glide effortlessly across all types of floor surfaces; making the system simple to use for all cleaning personnel.



KILL RATES FOR A SELECTION OF PATHOGENS

MODEL	UV DOSE REQUIRED	MH-FU-L	MH-FU-M
	$\mu\text{W}/\text{cm}^2$	99.999% Kill Time (Seconds)	99.999% Kill Time (Seconds)
BACTERIA			
Staphylococcus Aureus (MRSA)	6600	0.05	0.10
Legionella Pneumophila	12300	0.10	0.19
Escherichia Coli	6600	0.05	0.10
Salmonella Enteritidis	7600	0.06	0.12
Mycobacterium Tuberculosis	10000	0.08	0.16
Clostridium Difficile (C-Diff)	24000	0.19	0.38
Pseudomonas Aeruginosa	5500	0.05	0.10
VIRUSES			
Influenza	6600	0.05	0.10
Infectious Hepatitis	8000	0.06	0.13
Bacteriophage	6600	0.05	0.10
Rotavirus / Norovirus	24000	0.19	0.38
MOLD			
Aspergillus Flavus	99000	0.79	1.55

UV-C energy supplied by the PHILIPS TUV Specialist UV Lighting technology contained within our Floor Sanitising System has the ability to prevent biological growth.

UV-C is capable of breaking molecular bonds, which disrupts the cellular growth of any target organism. UV-C alters the DNA of the organism, preventing reproduction and multiplication. The key to UVGI is to apply a chronic dose of Ultraviolet energy that kills 99.999% of the target organism.

The UV-C output of our MH-FU Floor Sanitisation Systems has been enhanced by the inclusion of special reflective materials engineered into the design, which magnify the UV-C energy levels and reduce the time required to provide the fatal dose of UV-C to the contaminated floor surface.

The table on the left relates specifically to the two Floor Sanitiser Systems, MH-FU-L and MH-FU-M. For example; using the MH-FU-L, the kill rate for MRSA is only 0.06 seconds. This means that system operatives can push the system at standard walking speed to guarantee effective pathogen control.

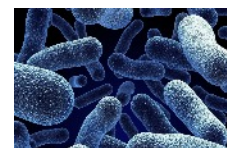
The MH-FU UV Floor Sanitising System is effective against:



VIRUSES

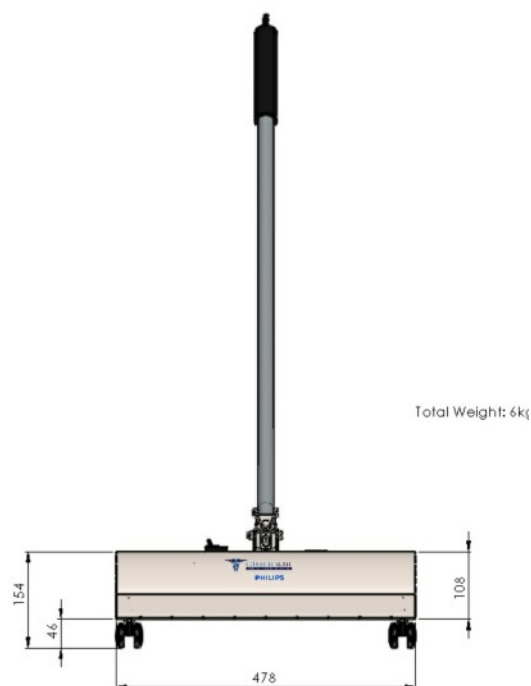


MOLD

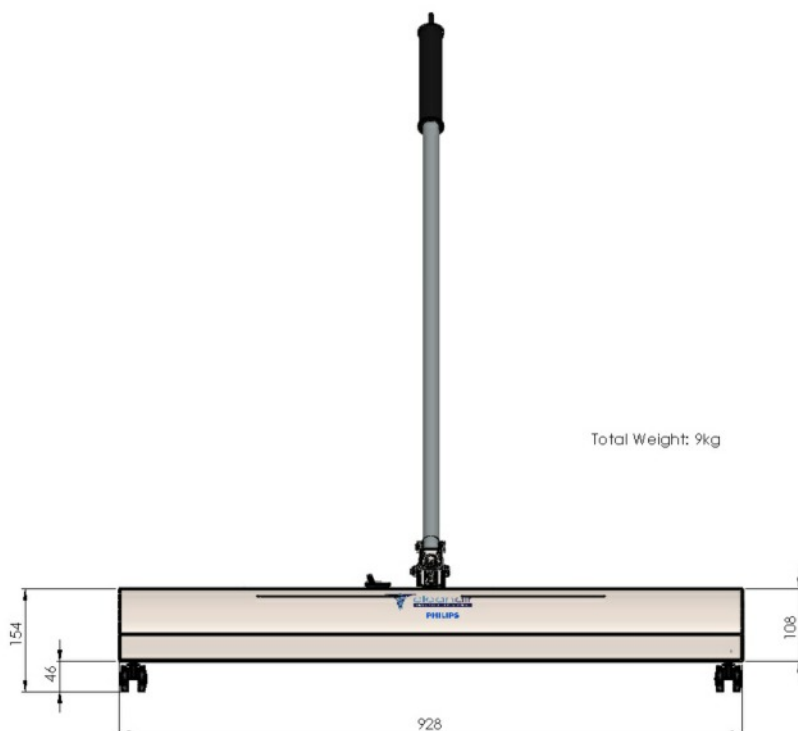


BACTERIA

MH-FU-M



MH-FU-L



DETAIL	MODEL NUMBER	
	MH-FU-M	MH-FU-L
Effective Operating Width	478mm	928mm
Total Weight	6kg	9kg
UV-C Power Output	2,800 μ W-s/cm ²	5,500 μ W-s/cm ²
Voltage	220V 50/60Hz	220V 50/60Hz
Watts	72W	144W
Amps	0.3A	0.6A
Construction (Chassis)	403 Stainless Steel	403 Stainless Steel
Philips TUV Tubes	2	4
Tube Replacement Cycle	9,000 Hours	9,000 Hours
Reflector	Polished Aluminium	Polished Aluminium

Clean Air (Thailand) Co., Ltd

Suite 10-02, 2 Floor, Ploenchit Center, Sukhumvit Road, Klongtoey, Bangkok, Thailand, 10110

Tel: +66 (0)2 656 9478 | Fax: +66 (0)2 656 9480 | Email: info@cleanairthailand.com | Website: www.cleanairthailand.com