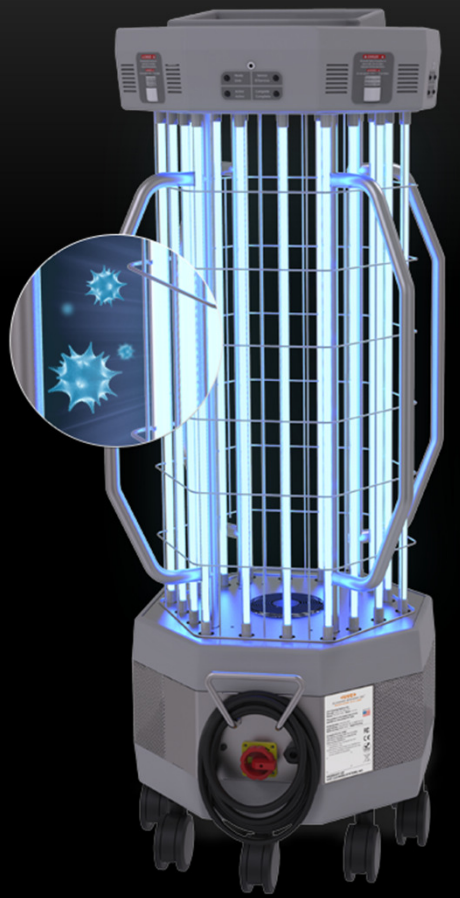
SOMA MEDICAL SDN BHD

ULTRAVIOLET GERMICIDAL IRRADIATION

UVC CLEANING SYSTEMS

UVC DEVICE M20

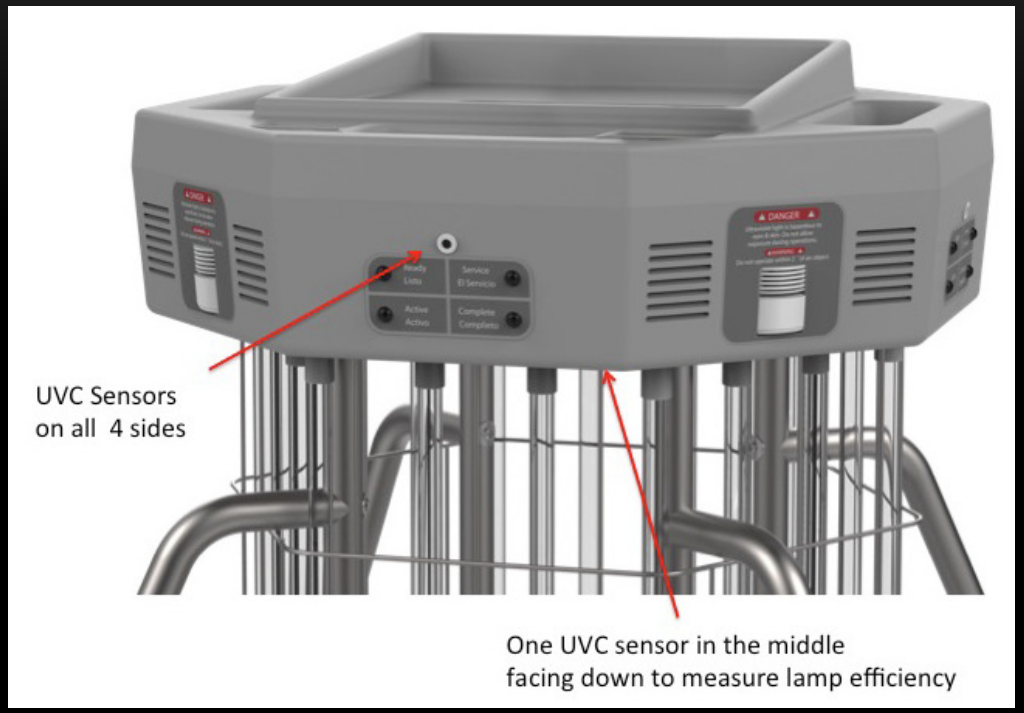
- **Multiple product offerings**
  - Whole Room Mobile Units – casters and handcart
- **Technology**
  - Proven UVC technology, highly reliable and powerful – 2340 watts
  - High power for effective germicidal treatment - Product efficacy - calculated and automated UVC dosage - 18 emitters
  - Pathogen inactivation - greater than a log 4 reduction of sporous pathogens on high touch surfaces
- **Product intelligence and ease of operations**
  - Proprietary based RFID tracking and ***web*** based reporting infrastructure
  - Simple operations with easy to use remote, no complicated tablets or computers
  - Safety – emitters – passive infrared AND ultrasonic
  - Efficient to operate, all from a 3 button simple remote
- **ROI and Low Cost of Ownership**
  - The average room disinfection time is less than ten (ten) minutes with ***linked*** devices (up to 8 linked devices possible).
  - Labor time savings – no need to move units around the room for multiple treatments
  - UVC will sanitize ~ 400 % more rooms in the same time over HPV products reducing the spread of infection in more locations and more often.
  - Not just focused on product but focused on environmental services and infection control process and systems ***SOLUTIONS.***
- **Industry Validation**
  - Independent data shows UVC Cleaning product rate high in customer satisfaction and ease of use - ECRI Institute



UVC DEVICE M20 – SENSOR TECHNOLOGY

UVC Cleaning Systems uses four (4) external UVC sensors mounted on the outer surface of the device.

- These sensors measure the reflective and direct energy produced by the mobile UVC device.
- A reading is taken every one (1) second; calculates an accumulated energy threshold.
- device turns off and signals the operator “Treatment Complete” at the predetermined energy threshold level.

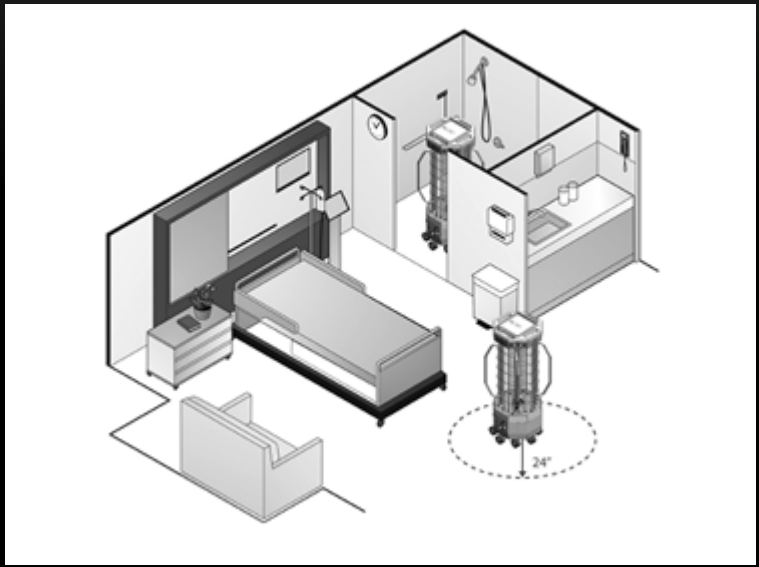


A fifth UVC sensor is mounted in center of the top assembly facing down

- measuring the amount of UVC energy produced by the number of lamps in the product.
- This sensor takes a reading every one-second measuring the efficiency of the UVC lamps.

The system is calibrated to achieve a log 4 or greater reduction of Clostridium Difficile (C. diff) on all high touch surfaces and to treat an area 23’ x 23’ = 529 square feet (6.7m x 6.7m = 44.89 square meters) with a single placement.

PRODUCT APPLICATIONS



UVC Cleaning Systems has taken a different approach to create more robust designs that are effective for hospitals as well as other environments. These devices can be used in laboratories, food processing plants, hotels, cruise ships, athletic facilities, out patient surgical centers and many other environments where harmful pathogens exist. Linked or single devices provide whole room treatment where pathogens exist.

APPLICATIONS

TRANSPORTATION

This device is designed to easily move from facility to facility, through parking lots, and up and down stairs. This is for customers that need to be in multiple locations. One person can transport this model in a van or truck.

OPERATION

All UVC Cleaning Systems equipment is marked with clear, easy-to-read warning labels, and comes with a quick start guide and a comprehensive user manual to ensure safe operations.

Machine status is indicated on all sides of the device coupled with a simple three button remote control. These simple operations minimizes confusion and ensures a safe, fast, and effective UVC treatment.

EFFICACY

Research has proven that higher UVC energy levels reduce the population of microorganisms more than lower UVC energy in the same period of time.

TEST REPORT

Test Facility
Antimicrobial Test Laboratories
1304 W. Industrial Blvd
Round Rock, TX 78681
(512) 310-8378

The test microorganism(s) selected for this test:

- *Staphylococcus aureus*
- *Listeria monocytogenes*
- *Clostridium difficile*

Summary of the Procedure

1. Overnight cultures were centrifuged at 1,000 RPM (as applicable) for 10 minutes, resuspended in sterile R/O water, and supplemented with 5% FBS.
2. Stainless steel carriers (1”x3”) were inoculated with 0.01 ml of the culture.
3. Inoculum was spread over approximately 10 cm2 of each carrier.
4. Carriers were left to dry at room temperature for 10 minutes in Petri dishes with lids ajar.
5. Visibly dry carriers/test microorganism were harvested in 20 ml D/E to determine the initial numbers control.
6. Test carriers were treated at a specified distance and time period then harvested in 20 ml D/E.
7. Standard dilution and pour plating techniques were used for all enumerations.
8. Calculations are based off of the averaged initial and final control numbers compared to CFU/carrier recovered from treated test carriers.

Product Background – what we inactivate

Why we are the BEST choice

Bacteria:

Bacillus anthracis - Anthrax
Bacillus anthracis spores - Anthrax spores
Bacillus magaterium sp. (spores)
Bacillus magaterium sp. (veg.)
Bacillus paratyphusus
Bacillus subtilis spores
Bacillus subtilis
Clostridium Difficile
Clostridium tetani
Corynebacterium diphtheriae
Ebertelia typhosa
Escherichia coli
Listeria
Leptospiracanicola - infectious Jaundice
Micrococcus candidus
Micrococcus sphaeroides
Mycobacterium tuberculosis
Neisseria catarrhalis
Phytomonas tumefaciens
Proteus vulgaris

Bacteria:

Pseudomonas aeruginosa
Pseudomonas fluorescens
Salmonella enteritidis
Salmonela paratyphi - Enteric fever
Salmonella typhosa - Typhoid fever
Salmonella typhimurium
Sarcina lutea
Serratia marcescens
Shigella dyseteriae - Dysentery
Shigella flexneri - Dysentery
Shigella paradysenteriae
Spirillum rubrum
Staphylococcus albus
Staphylococcus aureus
Staphylococcus hemolyticus
Staphylococcus lactis
Streptococcus viridans
Vibrio comma - Cholera

Viruses:

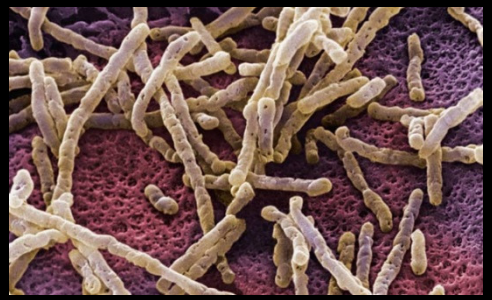
Bacteriopfage - E. Coli
Infectious Hepatitis
Influenza
Poliovirus - Poliomyelitis
Tobacco mosaic
Norovius

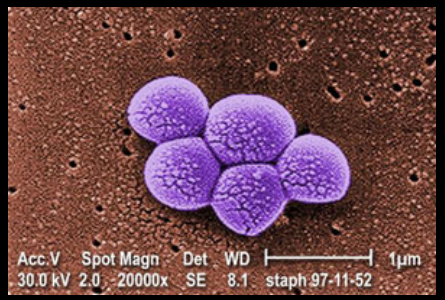
Yeast

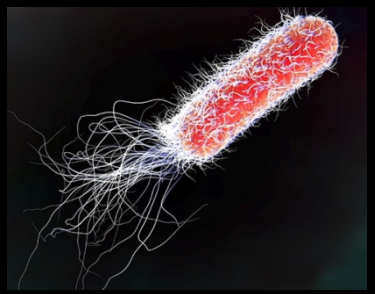
Brewers yeast
Common yeast cake
Saccharomyces carevisiae
Saccharomyces ellipsoideus
Saccharomyces spores

Molds:

Aspergillius flavus
Aspergillius glaucus
Aspergillius niger
Mucor racemosus A
Mucor racemosus B
Oospora lactis
Penicillium expansum
Penicillium roqueforti
Penicillium digitatum
Rhisopus nigricans



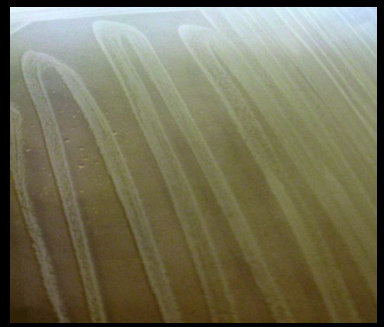




TEST REPORT – BACTERIA TESTED

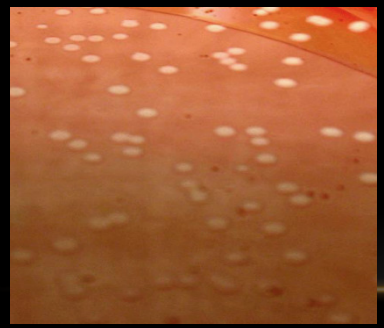
Staphylococcus aureus 6538

This bacterium is a Gram-positive, spherical-shaped, facultative anaerobe. Staphylococcus species are known to demonstrate resistance to antibiotics such as methicillin. S. aureus pathogenicity can range from commensal skin colonization to more severe diseases such as pneumonia and toxic shock syndrome (TSS). S. aureus is commonly used in several test methods as a model for gram positive bacteria. It can be difficult to disinfect but does demonstrate susceptibility to low level disinfectants.



Listeria monocytogenes

This bacteria is a Gram-positive, rod shaped, facultative anaerobe that is motile due to the presence of flagella. These bacteria are common cause of the foodbourne illness listeriosis, which can be fatal. Listeriosis can cause meningitis and sepsis and is particularly dangerous to pregnant women and unborn infants. Listeria monocytogenes is pervasive and can be found in soil, water, and certain livestock animals. They can resist both heat and freezing and can survive for several years.



Clostridium difficile 43598

This bacteria is a Gram-positive, rod shaped, endospore generating obligate anaerobe. Clostridium species are part of the normal human gut flora that produce spores which are highly resistant to chemical and environmental conditions. C. diff is commonly associated with hospital acquired infections and is know to cause antibiotic assisted colitis. Because of it's high resistance to antimicrobials, C. difficile is a benchmark bacteria for sporicidal and sterilant activity of chemicals.

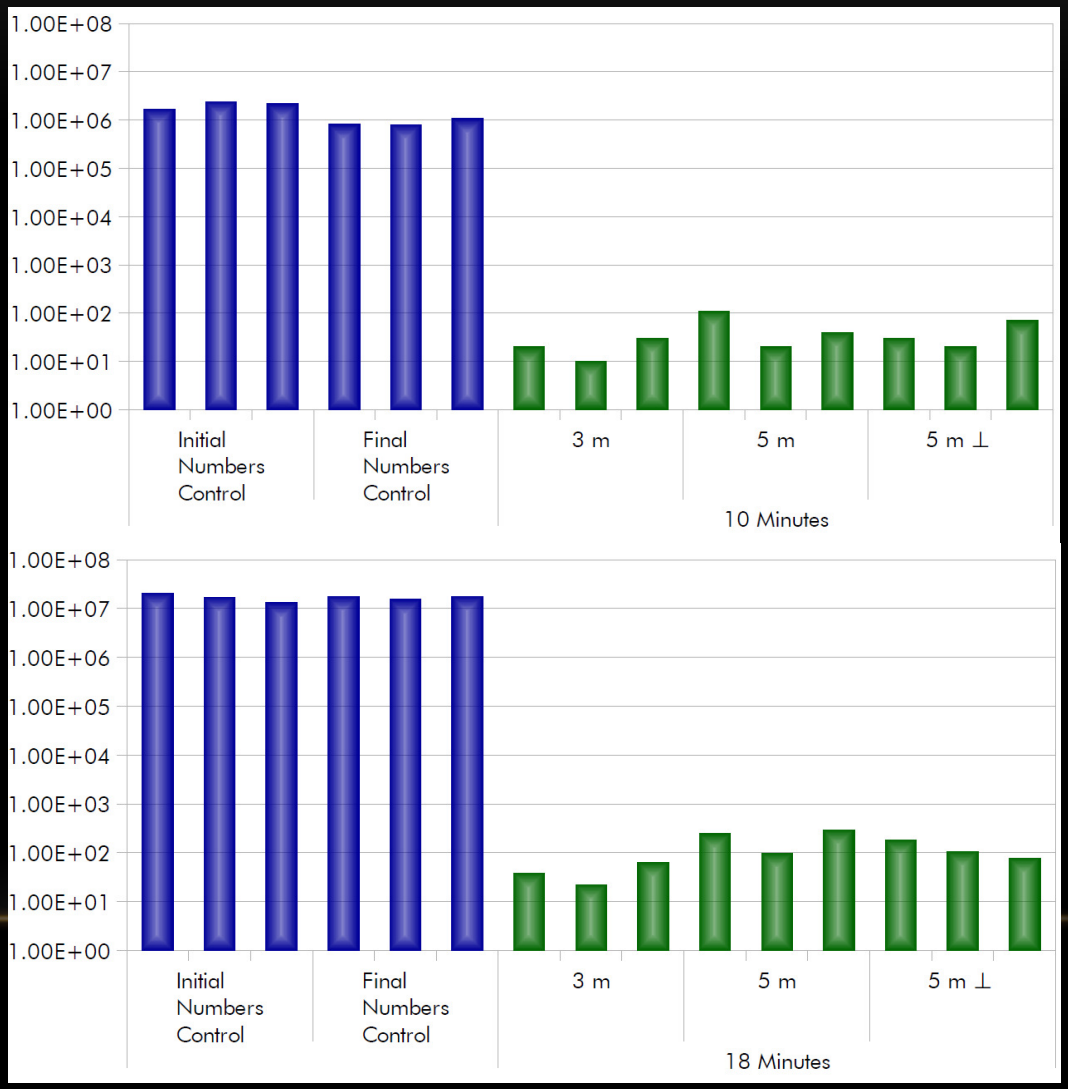
TEST REPORT - RESULT

Staphylococcus aureus

Species	Contact Time	Contact distance	% reduction
S. Aureus (run 1)	10 minutes	3 meters	99.9987%
		5 meters	99.9967%
		5 meters perpendicular	99.9975%
S. Aureus (run 2)	18 minutes	3 meters	99.9998%
		5 meters	99.9989%
		5 meters perpendicular	99.9993%

TEST REPORT - RESULT

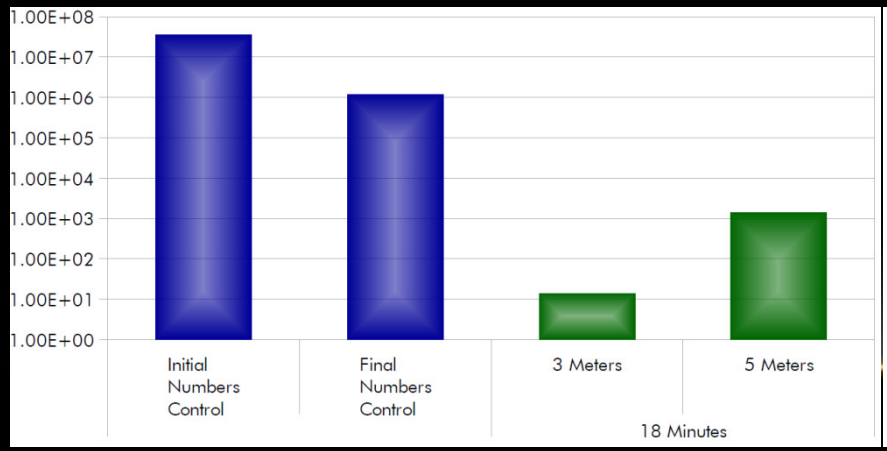
Staphylococcus aureus

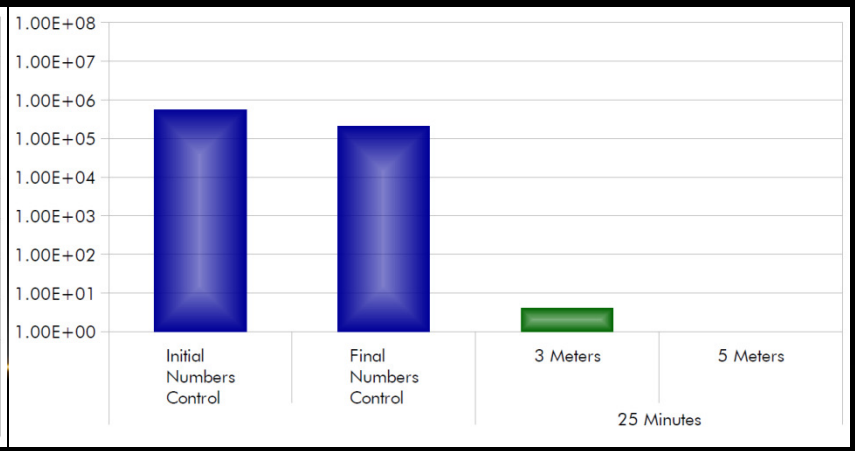


TEST REPORT - RESULT

Listeria monocytogenes

Species	Contact Time	Contact distance	% reduction
L. monocytogenes (run 1)	18 minutes	5 meters	99.9998%
		5 meters perpendicular	99.978%
L. monocytogenes (run 2)	25 minutes	5 meters	99.9988%
		5 meters perpendicular	>99.9997%

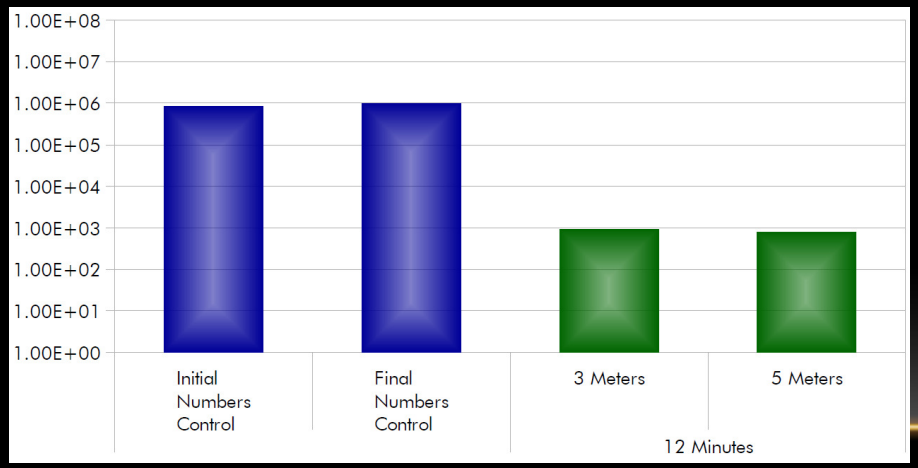


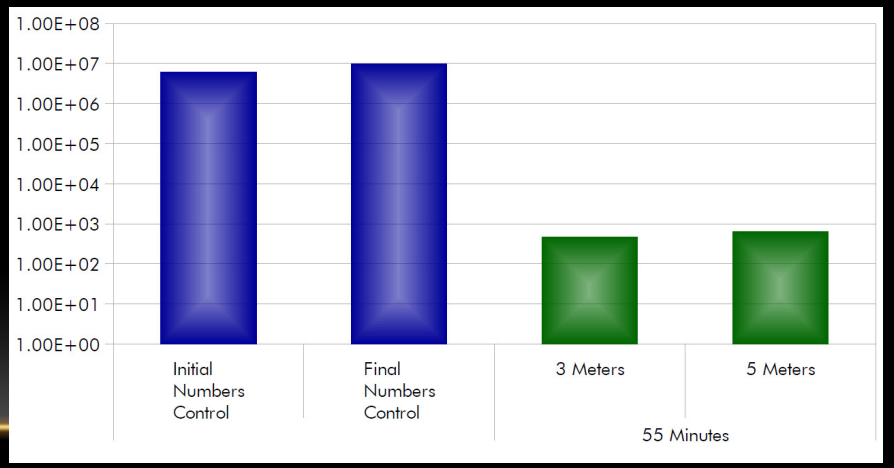


TEST REPORT - RESULT

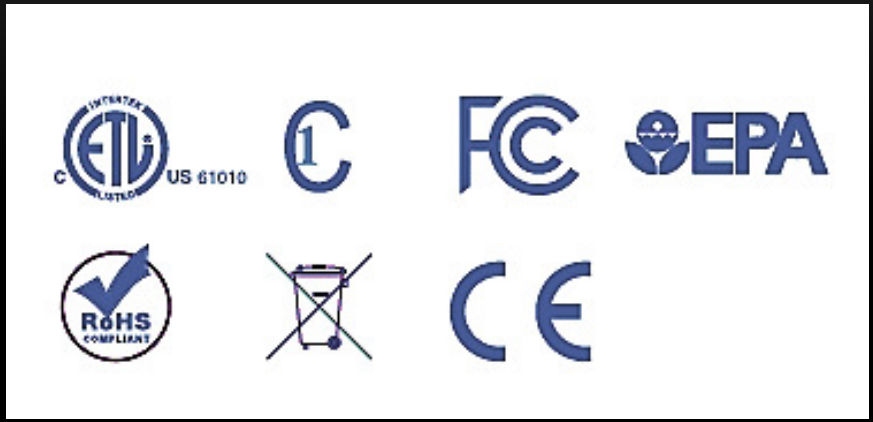
Clostridium difficile

Species	Contact Time	Contact distance	% reduction
C. difficile (run 1)	12 minutes	3 meters	99.03%
		5 meters	99.16%
C. difficile (run 2)	55 minutes	3 meters	99.994%
		5 meters	99.992%





SAFETY



UVC Cleaning Systems is committed to producing the safest, most effective UVC disinfection devices on the market. The equipment is ETL, CE, CSA, and FCC certified and is WEEE, RoHS, and EPA compliant.

SM NANO 1152 TITANIUM DIOXIDE

[Physicochemical Data Sheet]	
Product Series	Nano TiO_2 Sol Coating Agent (SM1152)
Appearance	Transparent liquid
Dispersive type	Solution
Odor	None
PH	7-8.5
Boiling Point	100°C/212°F
Volatility	None
Freezing Point	0°C/32°F
Flash Point	Non flammable
Average primary particle size - Acc. to GB/T 19591-2004	< 4nm
Crystal structure - Acc. to GB/T 19591-2004	Anatase
Specific surface area (BET) - Acc. to ISO 9277:1995	160± 30m^2/g
Coagulation index - Acc. to GB/T 19591-2004	2-4
Material academic duration	Permanent
Coating duration - Acc. to outdoor simulation environment	> 2 years
Primary drying time	30 minutes
Final setting time	2 weeks
Saturated stream pressure	2333Pa acc. to H_2O 1 PN 20°C
Opposite stream density	< 1.0 acc. to H_2O
Solubility	Dissolve in water, miscible in oil
True specific gravity	1.0075 – 1.01
Viscosity, dynamic	1.0050 mPa.s
Vaporize velocity	< 1.00 acc. to H_2O

ULV INTELLIGENT ELECTRIC COLD FOGGER

Features

- Good atomization effect with uniformed droplet.
- With its high efficiency and pressure atomization control, the sprayer saves on chemical and any kind of leakage is prevented.
- Easy to carry and operate.
- Stable performance.

Parameter

Motor	220V/50Hz
Power	800W
Tank capacity	2 Litres
Effective range	6 Metres
Noise factor	70dB
Particle size	0.4 to 1.8 Microns
Net weight	3.1 kg
Dimension	581 x 150 x 229.5 mm

ALS TEST REPORT ON TITANIUM DIOXIDE

ALS TECHNICHEM (M) SDN BHD

(117964-P)

9, Jalan Astaka U8/84, Seksyen U8, Bukit Jelutong, 40150 Shah Alam, Selangor.

Tel: (603) 7845 8257 Fax: (603) 7845 8258 E-mail: info@alsmalaysia.com

ALS Technichem

CERTIFICATE OF ANALYSIS

MICROBIAL CHALLENGE TEST

Day Organism	Inoculum Count (cfu/ml)	Count Recovered (cfu/ml)	% Reduction
Staphylococcus aureus ATCC 6583	4.5×10^6	2.0×10^4	99.56
Pseudomonas aeruginosa ATCC 9027	6.2×10^6	3.0×10^4	99.52
Escherichia coli ATCC 8739	7.3×10^6	3.7×10^4	99.49
Candida albicans ATCC 10231	4.5×10^5	3.9×10^3	99.13
Aspergillus niger ATTC 16404	3.7×10^5	3.3×10^3	99.11
Method References	**USP <51>**		

Remark: 1.0 ml inoculum from 10^6 was injected in 100ml sample

Contact time: 1 Hour

Calculation for % reduction: $\frac{\text{Inoculum Count} - \text{Count Recovered}}{\text{Inoculum Count}} \times 100$

USP: United State Pharmacopoeia

THANK YOU

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