



ultra-clean air from Mansfield Pollard

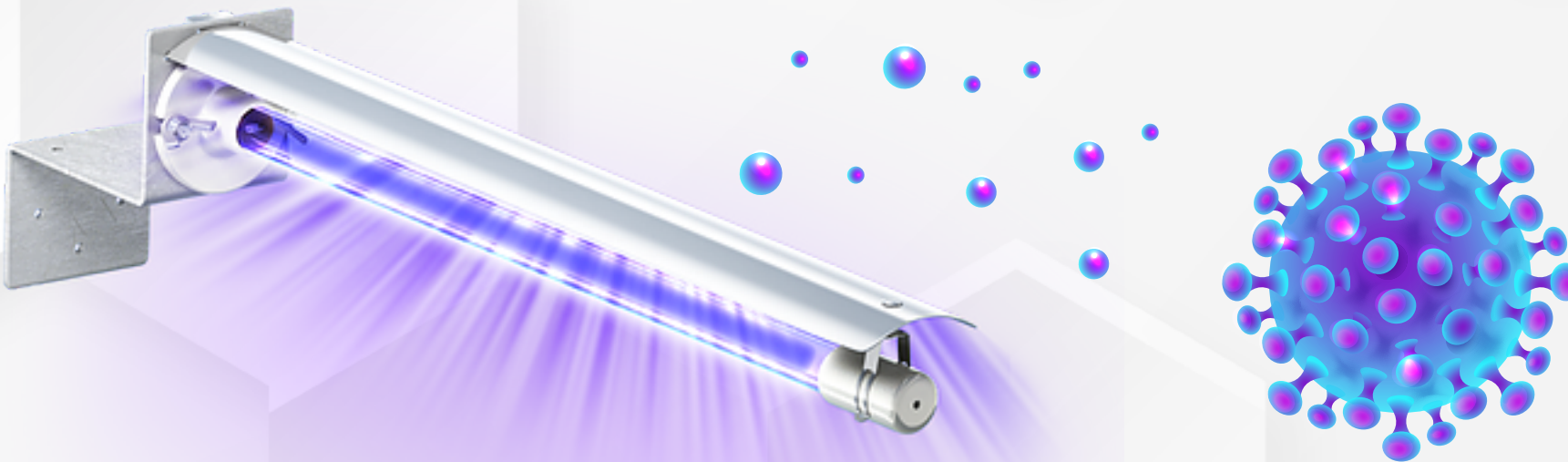
**UV - CEILING JET**  
Room Canopy Air Sterilisation Unit

## AIR STERILISATION UNITS

Mansfield Pollard's specialist business unit **UVent** is the UK's leading designer & manufacturer of revolutionary **UV-C** air sterilisation products to supply **ultra-clean air** to hospitals, healthcare facilities and other environments.

## GUARANTEED RESULTS

Our range of products remove airborne pathogens including bacteria and viruses through **ultraviolet germicidal irradiation** with measurable performance and guaranteed results.





UV-C technology is the most effective ways of destroying airborne pathogens including bacteria and viruses.

## DNA RUPTURE

### OF AIRBORNE MICRO-ORGANISMS

UV-C exposure directly attacks the DNA of micro organisms, stopping their capacity for reproduction. With the initial exposure, UV-C has properties that alter the cells of living tissue, particularly microbes. UV-C radiation triggers **the formation of peptide bonds** between certain amino acids in the microbe's DNA molecules



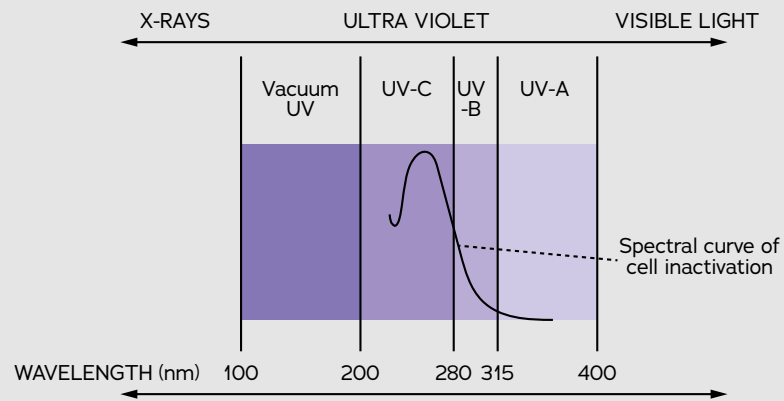
## PEPTIDE BONDS

### AND DEHYDRATION SYNTHESIS

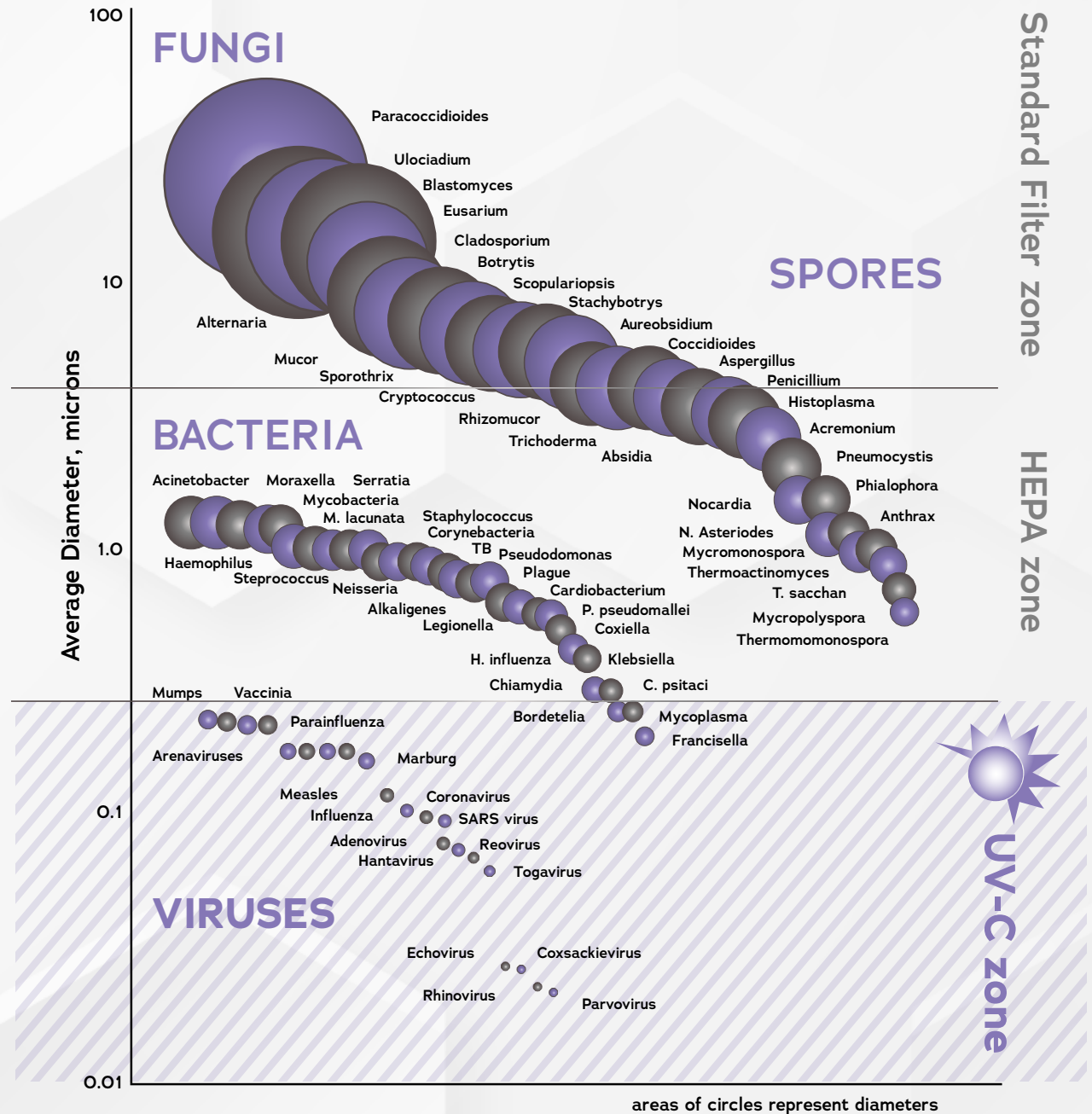
A peptide bond is a chemical bond formed between two molecules when the carboxyl group of one molecule reacts with the amino group of the other molecule, releasing a molecule of water ( $H_2O$ ). This dehydration synthesis reaction between amino acids renders bacteria, viruses and molds harmless by robbing them of the ability to reproduce. If the germ cells are exposed for longer periods, they start breaking down to the molecular level (carbon, oxygen, hydrogen, nitrogen ions, etc.).

# The science....

## ULTRA-VIOLET GERMICIDAL IRRADIATION



UV or ultra-violet light is presented between 100 and 400nm wavelength of the electro-magnetic spectrum. All UVent products work within the UV-C wavelength of 280nm or less and it is here that the sterilisation process is most efficient.



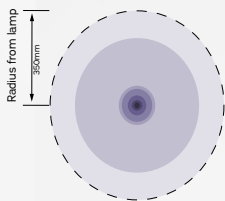
areas of circles represent diameters



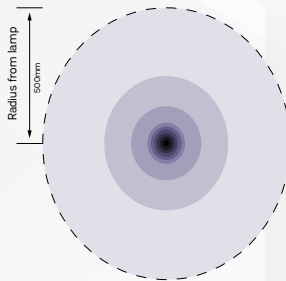
Maximum dwell time combined with maximum UV-C intensity delivers the ultimate in mobile air sterilisation technology.

### MAXIMISING THE KILL ZONE

Traditional Lamp



UVent High Performance



Specialist UV-C lamps create a kill zone that is up to x4 larger than traditional lamps and up to x5 the irradiation intensity for superior performance.

### INNOVATIVE REFLECTIVE TECHNOLOGY



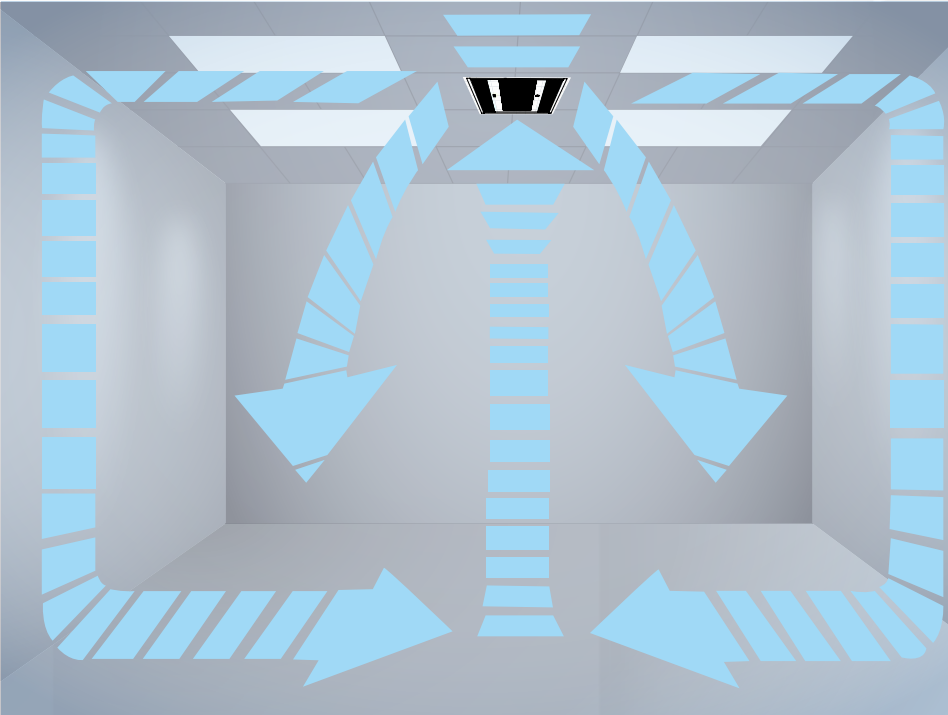
Enhanced integral reflective zone magnifies irradiation intensity and provides 360° field coverage to maximise UV-C consistency levels throughout the unit.

### AIR MANAGEMENT EXPERTISE



The perfect balancing of air volume and velocity maximises dwell time and UV-C exposure levels resulting in highly efficient pathogen elimination.

The unit....



## INDUSTRY LEADING P E R F O R M A N C E

### UNIQUE

Latest air handling technology and unique design to maximise sterilisation volumes and dissipate air throughout the entire room including areas of high biological concentration.

### COMPACT:

Sized to replace a single standard ceiling tile with specialist acoustic lining to ensure ultra-quiet operation.

### EFFICIENT:

Remote operated including switch for 'high pulse' operation for immediate room purging to provide variable speed operation at required times to suit the particular room environment.

**360m<sup>3</sup>/h**

unit airflow  
capability

**80m<sup>3</sup>**

sterilised air  
distribution zone

**37dB(A)**

ultra quiet  
operation

**9,000h**

ultra-long  
lamp life

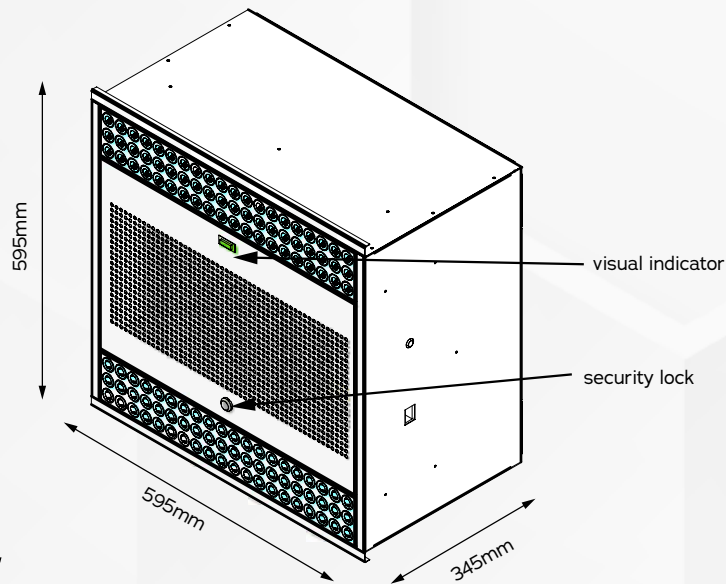
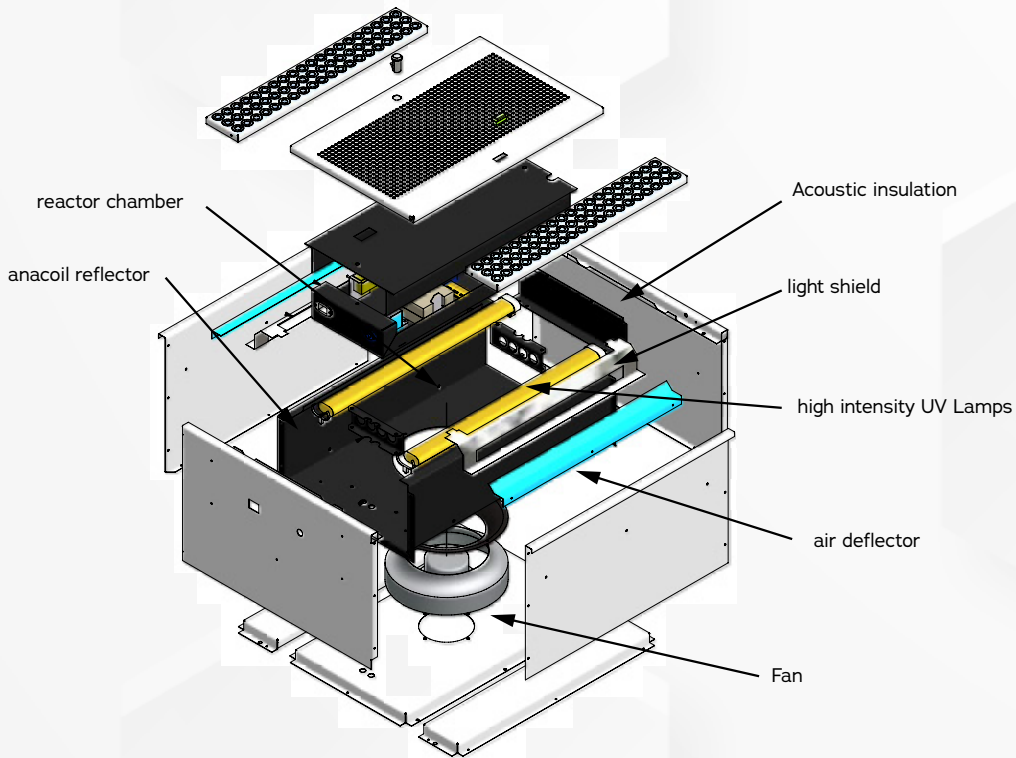
# The unit.....

## Operational details

|                            |                                  |
|----------------------------|----------------------------------|
| Unit dimensions (DxWxH) mm | 595 x 595 x 345                  |
| Unit weight                | 30Kg                             |
| Power Supply               | 220 – 240 AC / 50 Hz / 1 Phase   |
| Tube replacement           | 9,000 hours (max)                |
| Air filter (mm)            | 550 x 220 x 12                   |
| Finish                     | White polyester gloss (RAL 9003) |
| Sterilisation area         | 50-80 cu m                       |

## Setting

| Setting       | Air volume m <sup>3</sup> /h | dB(A) |
|---------------|------------------------------|-------|
| Standard      | 180                          | 39    |
| Purge / Boost | 360                          | 60    |



# Independent testing.....

## OUR PARTNERS IN DEVELOPMENT



### UNIVERSITY OF LEEDS

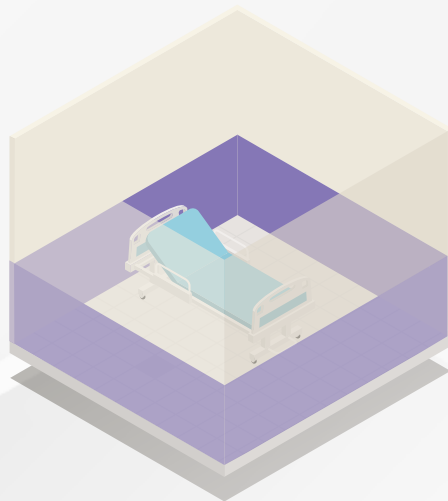
Rigorous and independently verifiable test data under laboratory conditions to reflect actual live HVAC conditions. Tests were carried out by The Pathogen Control Engineering Research Group, School of Civil Engineering (Dr CJ Noakes, Dr LA Fletcher, and Dr PA Sleigh). All data was analysed and verified by Professor Clive Beggs (then of The University of Bradford), who is one of the world leading experts in the prevention and control of healthcare associated Infections



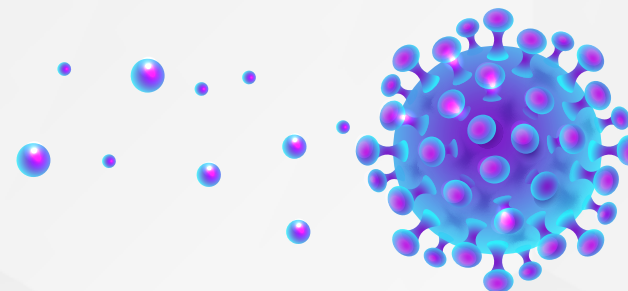
### UNIVERSITY OF BRADFORD

## STEADY STATE ROOM TESTS

A 32m<sup>3</sup> aero-biology test chamber was created to simulate a room inhabited by an infectious individual who is constantly emitting harmful organisms. The device was placed into the sealed ventilated chamber and a constant supply of airborne bacteria introduced. Tests were carried out in the chamber in order to determine the efficiency of the device in terms of its ability to inactivate airborne micro-organisms.



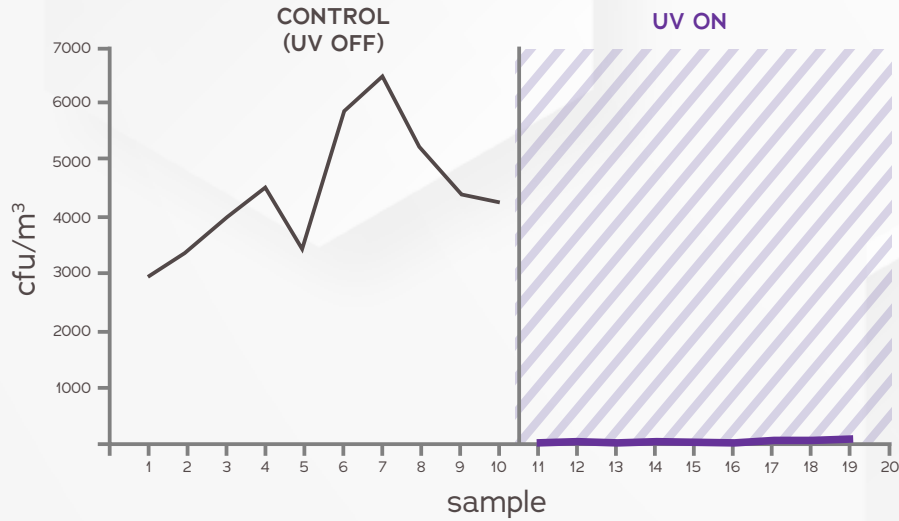
## BACTERIAL TEST ORGANISMS



Staphylococcus aureus a gram positive bacterium that is a major cause of hospital acquired infectious. Hospital strains are usually resistant to a variety of antibiotics (e.g. MRSA) and many are resistant to antiseptics and disinfectants which aids its survival in the hospital environment.



# Test results....

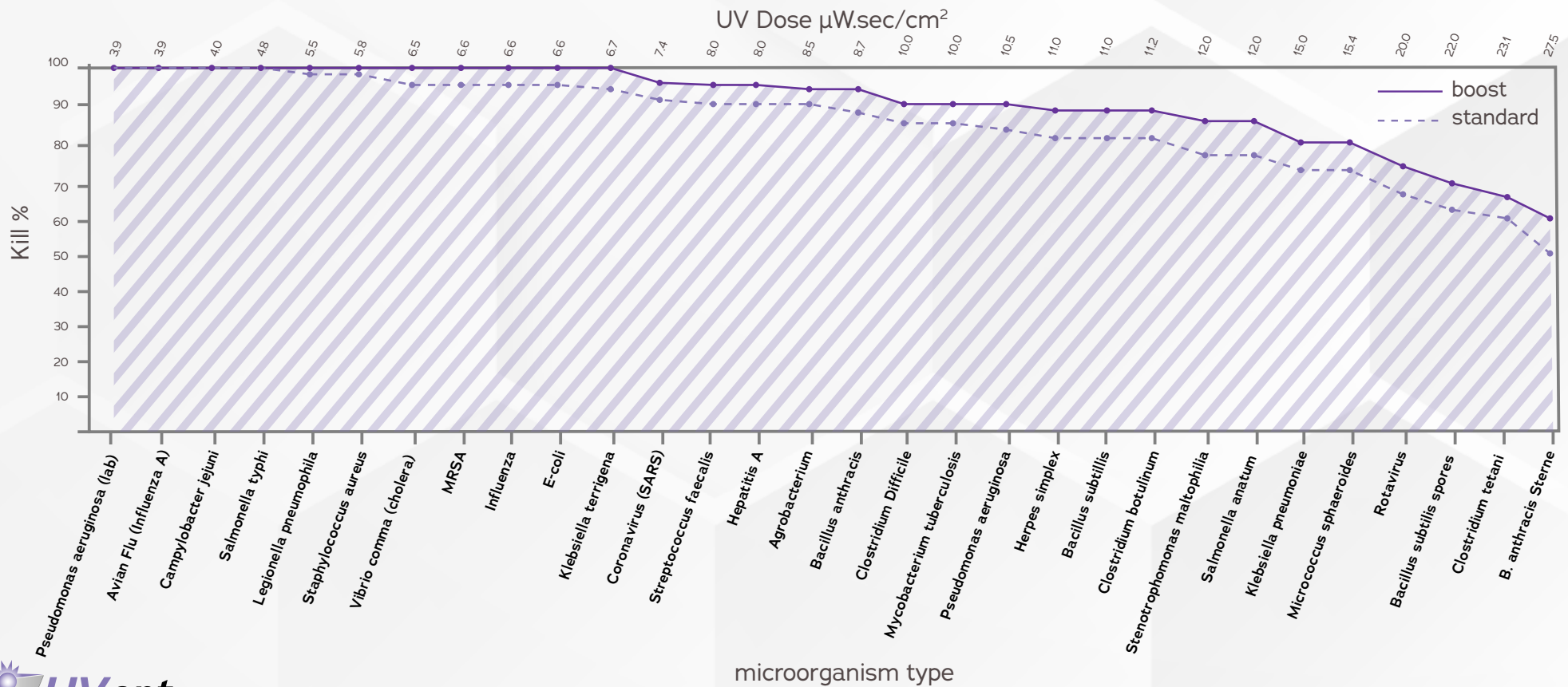


**> 99%**  
KILL  
PERCENTAGE  
staphylococcus  
aureus

Performance tests carried out in partnership with **Pathogen Control Engineering Research Group** at the School of Civil Engineering, **University of Leeds**



**UNIVERSITY OF LEEDS**



# Quality & compliance.....

## DECLARATION OF CONFORMITY

According to EN 45014



Edward House, Parry Lane, Bradford, West Yorkshire BD4 8TL

We hereby declare that this product complies with the following directives and standards:

**Product Description:** Air sterilising unit

**Product Number:** ASU 6000

### 2014/30/EU EMC Directive

|                         |                                                                                                                                                                |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ✓ BS EN 55015:2013      | Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.                                           |
| ✓ BS EN 61000-3-2: 2018 | Electromagnetic compatibility (EMC) -Part 3-2: Limits -Limits for harmonic current emissions (equipment input current greater than or equalto 16 A per phase). |
| ✓ BS EN 61547:2009      | Specification for equipment for general lighting purposes. EMC immunity requirements.                                                                          |
| ✓ CE marking            | <b>CE</b>                                                                                                                                                      |

**This is to certify that the product complies with the required standards.**

Signed: \_\_\_\_\_ Date: 18 April 2019

Name: Bryan Bentley



## Certificate of Registration

This is to certify that the Management System of:

**Mansfield Pollard & Co. Limited**

Edward House, Parry Lane,  
Bradford, West Yorkshire, BD4 8TL

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 9001: 2015



Certificate Number: 14694-QMS - 001  
Initial Registration Date: 16 January 2020  
Expiry Date: 16 January 2023

### Scope of Registration:

Design, manufacture of air management systems.

Signed:  
Steve Stubbly, Technical Director  
(on behalf of Alcumus ISOQAR)

This certificate will remain current subject to the company maintaining its system to the required standard. This will be monitored regularly by Alcumus ISOQAR. Further clarification regarding the scope of this certificate and the applicability of the relevant standards' requirement may be obtained by consulting Alcumus ISOQAR.

Alcumus ISOQAR Limited, Alcumus Certification, Cobra Court, 1 Blackmore Road, Stretford, Manchester M32 0QY.  
T: 0161 865 3699 F: 0161 865 3685 E: isoqarenquiries@alcumusgroup.com W: www.alcumusgroup.com/isoqar  
This certificate is the property of Alcumus ISOQAR and must be returned on request.

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We have developed a world leading suite of UV-C products to suit any application and environment

## FREE STANDING

A flexible and fully portable UV sterilisation unit to sterilise any specific spaces. Its unique design and latest air handling technology maximises sterilisation volumes and high pulse operation allows immediate room purging.



## IN-DUCT UNIT

The most powerful and efficient air sterilisation unit of its type with formidable UV-C dwell time and destruction zone. Fully scalable to deal with any airflow duty and can be easily retro-fitted into existing ductwork installations

