



A NEW BREED OF AIR PURIFICATION REACTOR TECHNOLOGY

- >87.5% Bacteria & Mould Reduction
- Dynamic Microbial Load Decontamination
- VOC and Odour Removal
- Transforms Contaminated Air Itself into a Sterilant
- Advanced Environmental Air Treatment for Healthcare Settings.
- Cleaner, Safer Air for Healthcare Environments
- Designed By Medical Physics, Decontamination, Estates & Authorising Engineer Professionals
- Reducing Anti-microbial Resistance

Continuous Microbial Reintroduction — staff, patients and visitors naturally introduce new airborne microbial load as they move through the healthcare environment. MACH provides continuous non depleting decontamination air treatment to help address this dynamic challenge.

MACH is a new air purification reactor designed to improve general environmental conditions across healthcare setting. Suitable for acute hospitals, community healthcare facilities, clinics, waiting areas, treatments rooms, staff areas and support spaces, MACH provides an additional layer of environmental air treatment where clean, controlled indoor air matters most.

Already deployed in demanding healthcare scenarios, MACH has been used to support the control of a chemical incident and to help manage outbreaks of respiratory syncytial virus (RSV) within acute healthcare environments.



SUPPORTS
INFECTION
PREVENTION



IMPROVES
INDOOR AIR
QUALITY



RAPID
DEVELOPMENT



LOW
DISRUPTION



PROVEN IN REAL
HEALTHCARE
PRESSURES

THE MACH SOLUTION

HOW MACH WORKS

At the heart of MACH is VPER (Volumetric Photonic Environmental Remediation) technology; a sealed photonic reactor that uses a diffuse, multi-pass light field to drive non-thermal oxidative reactions.

Supports infection prevention



Helps reduce airborne environmental risk as part of a wider ventilation, cleaning and infection prevention strategy.

Helps improve indoor air quality



Targets airborne contaminants, odours and pollutants that can affect comfort, confidence and environmental conditions.

Rapid deployment



Can be introduced into priority areas where additional air treatment is required.

Low disruption



Provides supplementary air treatment without major building works in many applications.

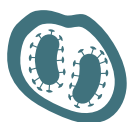
Proven in real healthcare pressures



Used during a chemical incident response and in RSV breakout management within acute healthcare settings



POWERFUL MULTI-ACTION AIR TREATMENT



Germicidal



Sporicidal



Anti-mould



PM removal



VOC
breakdown



Odour
removal



Bioaerosol
neutralisation



CLEANER AIR, SAFER SPACES, BETTER OUTCOMES.

DESIGNED FOR HEALTHCARE APPLICATIONS

Removal of:

- Bacteria
- Germs
- Odour
- Mould
- VOCs



SETTING	POTENTIAL BENEFIT
 Acute wards and bays	Additional environmental air treatment during periods of increased respiratory infection risk.
 Emergency departments and assessment areas	Supports improved air quality in high throughput, variable-risk environments.
 Outpatient and waiting areas	Helps improve comfort and confidence for patients, visitors and staff.
 Isolation support spaces	Provides supplementary air treatment alongside local infection prevention procedures.
 Plant rooms, support areas and incident locations	Can support environmental management during incidents where airborne pollutants or odours are present.

**MACH is a supplementary solution that works alongside
HTM-compliant ventilation, cleaning and IPC best practice.**

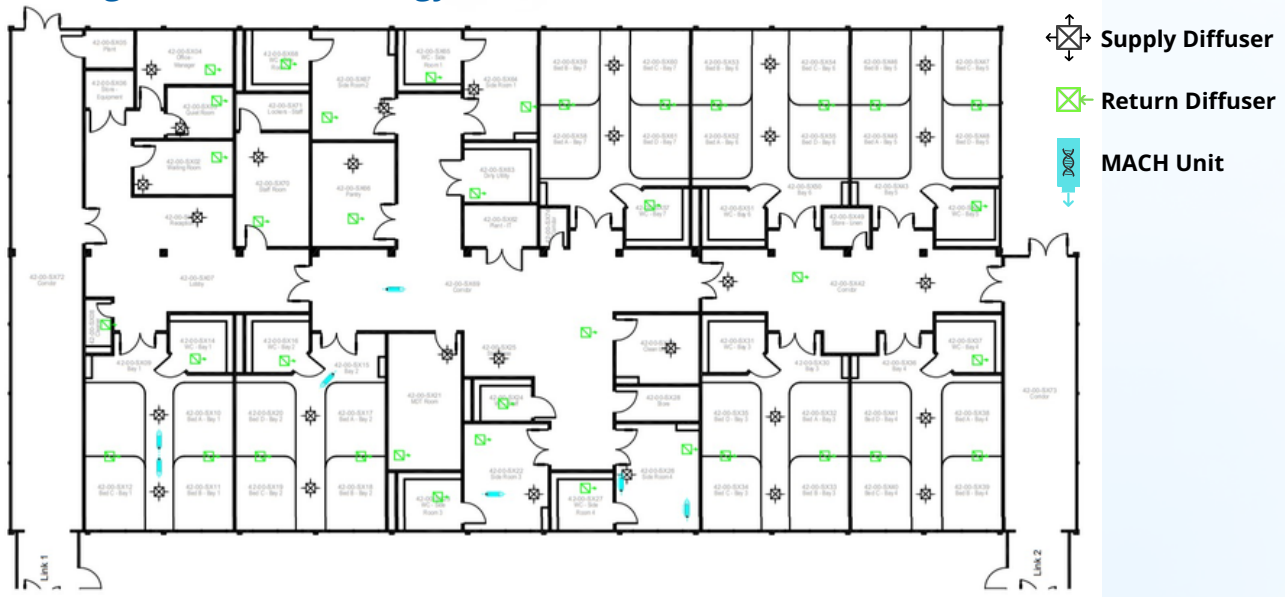


A TRUSTED ADDITION TO YOUR INFECTION PREVENTION STRATEGY

MACH does not replace ventilation systems or local infection prevention and control procedures.

DEPLOYED ON WARD 42

MACH units were installed to complement the existing ventilation strategy.



NHS SITE LIVE TESTING

In live NHS clinical testing, MACH achieved a verified 52% reduction in airborne microbial load across active ward environments — significantly outperforming the 10-30% reductions typically associated with conventional HEPA, UV, PCO and ionisation technologies.

Importantly, in enclosed clinical rooms, MACH delivered reductions of up to 88%, reducing airborne microbial burden to near-sterile levels.

These independently evidenced results demonstrate exceptional environmental performance under real-world healthcare conditions, including environments subject to continuous microbial reintroduction through staff, patient and visitor movement. Where conventional air-treatment technologies can struggle to deliver meaningful reductions, MACH demonstrates a substantially higher level of performance — positioning the technology firmly within the top performance tier for healthcare air treatment.

WHY MACH DELIVERS

- ✓ Advanced VPER technology
- ✓ Non-thermal, zero-adding heat to space
- ✓ Targets VOCs, odours and airborne contaminants
- ✓ Helps reduce airborne microbial burden
- ✓ Supports patient, staff and visitor confidence
- ✓ Sustainable choice for modern healthcare

LET'S IMPROVE THE AIR YOUR PATIENTS AND STAFF BREATHE.

**Talk to us today
about MACH.**



Contact
07904 867107



Website
www.mesystems.co.uk