

# PureAir™

Ultraviolet UV system

**MODEL UVM9  
Air Purifier  
Installation, Operation and Maintenance Manual**



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# MICROTEK



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# PureAir™ Air Disinfection System

## Operation and Maintenance Manual

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### OVERVIEW

These instructions describe the installation, operation and maintenance of the MicroTek UVM9 air purifier. If you do not understand these instructions, please call MicroTek Processes for clarification before commencing any work.

MicroTek Processes, reserves the rights to make engineering refinements that may not be described herein. It is the responsibility of the installer to contact MicroTek Processes for information that cannot be answered specifically by these instructions.

MicroTek Processes has developed the recommended installation, operating and maintenance procedures with careful attention to safety. In addition to instruction/operating manuals, all instructions given on labels or attached tags should be followed.



# PureAir™ Air Disinfection System

## Operation and Maintenance Manual

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### 1 INTRODUCTION

#### 1.1 Purpose of the Manual

This manual is intended to support the operation and maintenance of the PureAir™ UVM9 air purifier supplied by MicroTek Processes.

The enclosed manual covers the UVM9 purifier only. The package comprises the following major components:

- UVM9 purifier
- 24v power supply
- Mounting pads and fixings

It is important to note that this manual is NOT intended to cover:

- The operation and maintenance of any plant or equipment that was not installed or modified under the scope of MicroTek supply.
- The operation and maintenance of any plant or equipment of a similar nature installed elsewhere.

The manual should be treated as an integral part of the plant. One copy should be available to personnel responsible for the operation or maintenance of the PureAir™ UVM9 unit.

#### 1.2 Warranty

MicroTek Processes guarantee the equipment supplied under the scope of the order for a period of 12 months from the date of purchase.

If plant operators require further assistance with the PureAir™ UVM9 purifier they should contact MicroTek Processes at:

**MicroTek Processes Ltd**  
Aberystwyth Innovation and Enterprise Campus Ltd  
Office Block, Gogerddan Campus  
Aberystwyth University  
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## 2 OPERATION

### 2.1 Principles of Operation

The UVM9 air purifier is a self contained air purifier that requires period maintenance as set out within this manual.

Operation is either manually via the Mode Switch on the top of the purifier which selects either constant on or Intelligent operation via a programmed function that starts the purifier when the room is occupied and the fans run for a set time.

Air is drawn through the bottom of the unit with the built in fans and passes through the UV lamp and catalytic filter before being expelled back into the room through the disposable particulate filter.

In Photocatalytic air purifiers the catalyst that cleans the air is typically titanium dioxide and is energised by the ultraviolet light.

When UV light shines on the titanium dioxide, electrons are released at its surface. The electrons interact with water molecules ( $H_2O$ ) in the air, breaking them up into hydroxyl radicals ( $OH\cdot$ ), which are highly reactive, short-lived, uncharged forms of hydroxide ions ( $OH^-$ ).

These small, agile hydroxyl radicals then attack bigger organic (carbon-based) pollutant molecules, breaking apart their chemical bonds and turning them into harmless substances such as carbon dioxide and water.



### 3 SAFETY INSTRUCTIONS

It is a requirement of the relevant Health & Safety at Work regulations that employers provide such information, instruction, training and supervision as is necessary to ensure, so far as is reasonably practical, the Health, Safety and Welfare of their employees.

#### 3.1 General Health and Safety

This PureAir™ UVM9 purifier has few exceptional Health and Safety Risks associated with it. Listed below are some of those that should be considered in the installation, operation and maintenance of the equipment.

##### **Maintenance**

Maintenance of this unit must be treated with care. General maintenance of individual items must be carried out within the DSEAR risk assessment and should not be carried out with the unit in operation.

##### **Electrical**

The unit is connected to a 220VAC 50/50Hz single phase mains power supply rated at 1.2A.

##### **Chemical**

The UV lamp contains 10 – 15mg of mercury. Under normal operating conditions there is no personal exposure to mercury. Changing a failed lamp will not cause any personal exposure to mercury. Mercury will only be liberated from a broken lamp. Mercury liberated from a broken lamp will be in both vapour and liquid form. In the event of a broken lamp, it is not foreseen that, given satisfactory precautions for collection and disposal of broken quartz, any personal exposure to mercury will be experienced.

For handling broken quartz, protective gloves, eye protection and other appropriate PPE should be worn.

### 4 INSTALLATION

#### 4.1 General Description of system

The UVM9 air purifier comprises a wall mounted purifier complete with a 24V power supply that needs to be connected to a 110v/220v 1 phase 50/50Hz supply. The basic parts of the purifier are a replaceable filter, 4 small fans that draw the air through the purifier, a UV lamp and catalytic filter.

The purifier has the following approximate dimensions: 12 x 6 x 2.5 inches (300mm x 150mm x 66mm) and weighs 3.3lbs (1.5Kg).

Airflow through the unit is inlet at the bottom and outlet at the top. Fig 1.

The UV unit includes all necessary controls. Connections to the power lead, UV sensor and temperature controller are all hard wired into the control panel.

Installation of the purifier is recommended 6 Inches (150mm) down from the ceiling. Mounting of the power supply can be either in the room or ideally above the roof space (in an elevator).

To mount the unit remove the backing stripes from the 4 adhesive pads on the rear of the purifier. Fig 2. Ensuring the unit is level gently push the purifier onto the wall applying even pressure along the purifier, the adhesive strips will then keep it in position. Using the self tapping screw (supplied) screw through the hole in the hanger into the wall to give additional support to the purifier.



Fig 1.



Fig 2.

See section 7 for full specification.

### 4.2 Electrical installation requirements

#### Wiring

The UVM9 is supplied with a separate power supply to provide 24 Volts to the purifier via a 3 metre flying lead fitted with a plug suitable for country/region of installation.

Note the requirements for the incoming electrical supply is **110/220V, 50/60Hz, 1 Phase** and must be fitted with a disconnect/fuse rated at **1.2 Amp**.

Locate a local disconnect near the purifier unit so that electric power may be conveniently turned off for servicing.

### 4.3 Mounting and Placement

Install the UV unit in a suitable area to be treated and at accessible for periodic maintenance purposes. Ambient temperatures surrounding the unit should be between -20°C and +45°C. Should your requirements differ, contact MicroTek Processes for advice/guidance.

The unit is supplied with adhesive pads for adhering the unit to a wall and a fixing screw to provide extra support and security of the purifier.

### 5 MAINTENANCE

#### 5.1 Routine Maintenance

The UVM9 air purifier is designed for the minimum of maintenance. However, regular inspection and preventative maintenance of the plant and equipment, together with a systematic method of recording plant operation, are essential for the long-term reliability of the equipment.

Daily:

Check operation of purifier. Note a slight blue colour can be seen through the filter to indicate the UV lamp is working.



3 Monthly:

Change the air filter (see instructions below)

Annually:

Change the Catalyst and UV lamp (See instructions below)

#### 5.2 Air filter replacement

The air filter fitted to the purifier should be replaced every 3 months with a replacement bought from MicroTek or its approved stockist.

To replace the filter simply slide the housing out from the top of the purifier as shown in Fig 1 below, remove the filter from the holder Fig 2. Insert the new filter into the housing and slide the holder back into the unit. Note the holder only fits one way.



Fig 1.



Fig 2.

### 5.3 Catalyst replacement

The catalyst fitted to the purifier should be replaced every 12 months with a replacement bought from Microtek or its approved stockist.



Fig 1.



Fig 2.

With the purifier removed from the wall release the outer case by sliding the case release catch on the top of the purifier. Fig 1. Carefully slide the outer case up off its retaining lugs. The outer case can then be gently eased off its back plate, note the wires for the sensor and indicator light are attached to the front cover.

With the outer cover removed you can now gain access to the inside of the unit. Fig 3.

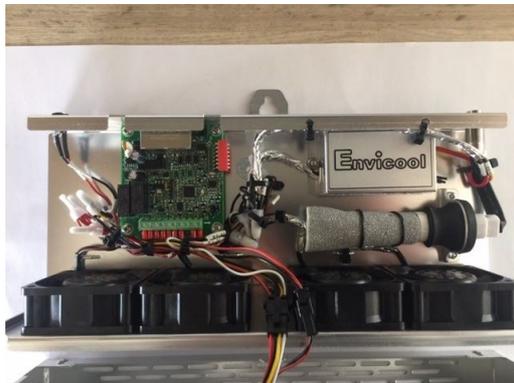


Fig 3.



Fig 4.

The catalyst is wrapped around the UV lamp as pointed out in Fig 4. The retaining straps need to be removed and the catalyst material can be removed from the bulb.

New catalyst is wrapped around the UV bulb and retained by the straps as shown in Fig 4.

### 5.4 UV Lamp

#### Lamp Replacement

The following explains the sequence to change the lamp fitted to the UVM9.

The UV lamp fitted to the purifier should be replaced every 12 months with a replacement bought from MicroTek or its approved stockist.

Instruction for the replacement of the bulb

#### Preliminary

1. Turn off Power to the unit.
2. Disconnect power cable from receptacle/plug.
3. Remove the unit from the wall.
4. Remove outer cover (See Catalyst replacement).
5. Remove the Catalyst material Fig 1 below. (See Catalyst replacement)
6. Pull off the bulb Holder from the bulb Fig 2.
7. Remove the bulb from retaining clamp
8. Fit the new bulb into the lamp holder.
9. Refit bulb holder
10. Fit Catalyst material (see 5.3 above)
11. Refit front cover being careful not to trap wires.
12. Ensure that the cover is located on the retaining lugs as shown in Fig 3.
13. Check retaining clip is located and the cover is now firmly in place Fig 4.
14. Refit the purifier to the wall.
15. Reattach the power cable.

16. Switch the unit on a check for operation note a faint blue light should be seen through the front filter. Fig 5.

Keep a record of ultraviolet lamp replacement dates and servicing dates.

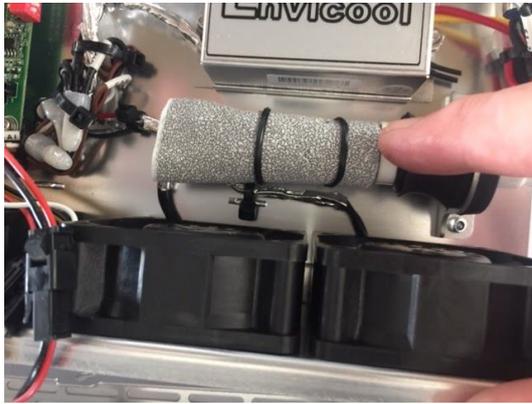


Fig 1.

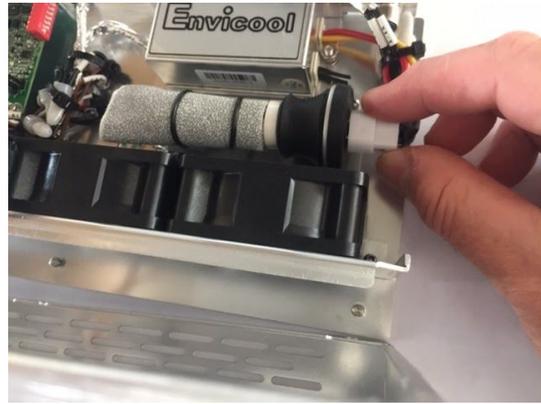


Fig.2



Fig 3.



Fig 4.



Fig 5.



### 6 TROUBLESHOOTING

In all cases of apparent failure, the following should be checked:

- There is electrical power to the power supply feeding the UVM9.
- The UVM9 is switched on. The power on indicator on the front of the unit will be lit.

If there is power to the unit and the lamp indicator is lit but the unit is not operating as indicated by the internal fan operating, then the fault is internal and under no circumstances should you attempt a repair. Please contact your representative or MicroTek directly for further advice.

# PureAir™ Air Disinfection System

## Operation and Maintenance Manual

### 7 TECHNICAL SPECIFICATION

#### System Specifications

Model Name:	EAP Purifier
Model Number	EAP2400H
Brand	PureAir
Colour	Stainless Steel
<b>Performance</b>	
Air Flow	35.5cuft/min (60m3/hr)
Sound Level	Measured at 3ft: <50dB (A)
<b>Filtration/Purification</b>	
Inlet Filter	Disposal filter element
Secondary Filter	Photocatalyst
Germicidal UVC	1 UV Bulb
UVC Output	7W
<b>Controls</b>	
Function switch	Fitted to top of unit
Purifier on lamp	Fitted to filter cover
Air Inlet	Bottom of unit
Air Outlet	Top/Front face of unit
<b>Electrical</b>	
Input voltage	220V
Nominal voltage	220Vac to 240Vac
Frequency	50/60Hz
Rated power	30W (Standby 3W)
Fuse rating	5A
Connection	Flying lead
Dimensions	12"w X 10"h X 4"d (300mm x 250mm x 100mm)
Weight	3.3lbs (1.5Kg)