



MRS33-8

Mobile UVC Unit

Models: MRS33-8-P0Z
MRS33-8-P2W

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Introduction

The MRS33-8-P0Z Unit is an easily moveable system designed to provide direct, prolonged UVC disinfection. The unit will disinfect surfaces within its reach, until the predetermined amount of time has been reached.

The unit is controlled with a remote-control fob and an internal PLC. The unit is equipped with a 360° motion sensor array, to prevent accidental exposure to individuals who enter the room during the disinfection cycle. The touchscreen allows the user to set the cycle time and displays the time elapsed since the lamps were last changed. The unit has eight (8) GML-Series, 33" lamps.

Technical Information

MRS33-8-P0Z

Input Voltage	120 VAC, 60 Hz, 8 Amps
Internal Fuse Rating	10 Amps
Power Cable Length	16 feet
Weight	85 lbs.
Lamp Type	GML100
Lamp Quantity	8
Dimensions	19.25" wide x 19.25" long x 46.5" tall

MRS33-8-P2W

Input Voltage	230 VAC, 60 Hz, 4.5 Amps
Internal Fuse Rating	6 Amps
Power Cable Length	16 feet
Weight	85 lbs.
Lamp Type	GML100
Lamp Quantity	8
Dimensions	19.25" wide x 19.25" long x 46.5" tall

READ BEFORE OPERATING THIS UNIT

Safety



This unit should only be operated or repaired by personnel who read this manual, understand the unit's operation, and know what to do in the case of an emergency. All repairs are to be performed only by an authorized service technician.

Safety Warnings



Ultraviolet (UV-C) Exposure Warning

Light in the short-wave UV-C band can cause erythema (reddening of the skin) and conjunctivitis (inflammation of the mucus membranes of the eye). People should avoid direct exposure to UV-C. UV-C exposure is relatively easy to limit because most products absorb UV-C. Standard windows and glass absorb all UV-C. Dead skin absorbs most UV-C light energy, so erythema is limited. UV-C does not penetrate the eye's lens. However, conjunctivitis can occur and though temporary, may be extremely painful. The manufacturer recommends that all direct exposure to UV-C be avoided. It is highly recommended that personal protective equipment (PPE) such as eye protection, gloves and clothing covering skin is worn while operating the device.



High Voltage Hazard

The unit uses high voltages, and proper electrical connections are required. Do not operate the unit if there is any visible damage to the module body, the motion sensor, the power cable, or any other part.



The MR33-8-P0Z unit can be considered a "spark" hazard. Do not operate the unit in an environment with vaporized solvents or any gases that could be an explosion hazard.



Hot Surface

UV Lamps will become hot during use and will remain hot for a brief period after use. Lamps should not be touched for at least 30 seconds after use.

**Contact American Ultraviolet Technical Support
at (800) 288-9288 with any questions.**

Safety Features

Motion Sensors

Motion sensors are mounted at the top of the unit, with two sensors on each side. Each set of sensors has a detection range of 180°. These sensors prevent UV-C exposure to any persons who may enter the room during a disinfection cycle and immediately turn the device OFF, cancelling the disinfection cycle

Wireless Controller

Due to the controller being wireless the operator can exit the room first and then start the countdown to begin the disinfection cycle thus eliminating the chance of UV-C exposure to the operator.

WARNING

The Motion Safety Sensors, in NO WAY reduce or eliminate the responsibility of the operator to verify that the room is empty and that all access points are secure.

Redundant Power Circuit Design

A redundant relay circuit is used in the lamp power circuit so that if one relay fails a second relay will still turn OFF the lamps.

Operation

The MR33-8-P0Z mobile disinfection device must only be used by trained and certified users. It is the responsibility of the distributor and the administration of the location the MR33-8-P0Z is deployed to provide proper training and maintain records of individuals certified to operate the MR33-8-P0Z unit. For training procedures and tests please consult your authorized distributor. Use of the MR33-8-P0Z unit by those not certified can lead to hazard and potential injury.

In the event the unit needs to be Shut OFF, other than via the controller (key ring fob), it can be shut down by either:

- a) removing power from the system via unplugging the unit while wearing proper PPE (as defined earlier in the document), or
- b) switching off the circuit breaker feeding the outlet unit is connected to.

Wheel the unit, by using the stainless-steel supports, into the room to be disinfected. Secure the latches on the casters of the unit. Plug the unit into a three-prong, properly grounded, 120 VAC, 15 Amp rated electrical outlet. This outlet must be protected with an appropriately rated and listed circuit breaker.

Make sure that the unit is positioned such that it is not obstructing the outlet and that the outlet is easily accessible should the device need to be disconnected.

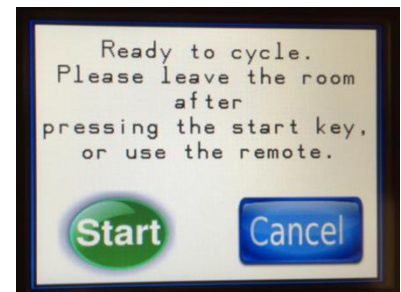
Press the **Begin** button on the display screen.



The **Main Menu** screen will be displayed.



The three (3) time values across the top of the screen (10/15/20 minutes) are preprogrammed into the system. Select any one of these times and the **Cycle Ready** screen will be displayed.



The second line on the touchscreen shows the selected **Manual Cycle Time** and the **Start** button.

Pressing the **manual cycle time** button will show a numerical keypad and the desired time can be entered using a time between 1 and 120 minutes and pressing the **Enter** button.



At the **Main Menu** press the **Start** button located center bottom of the screen. The **Cycle Ready** screen will be displayed and can be started in the same manner as described earlier.

The third line shows the **Elapsed Time Meter (ETM)**, which shows a running total of the amount of time that the unit has been running, and a Reset button to set the timer to zero. The ETM will show a value of zero (0) hours until the unit has been on for more than one-hour total.

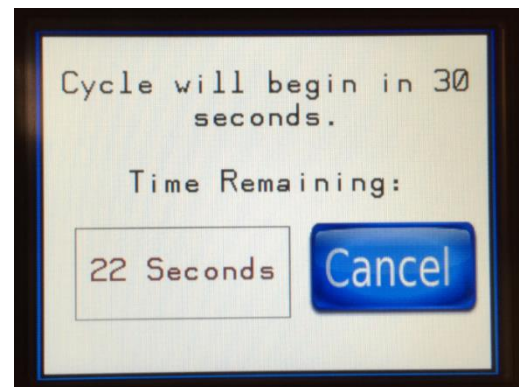
Ensure all personnel have exited the disinfection area and all other sensitive materials, such as plants and living organisms, have been removed or covered.

Exit the room and close the door.

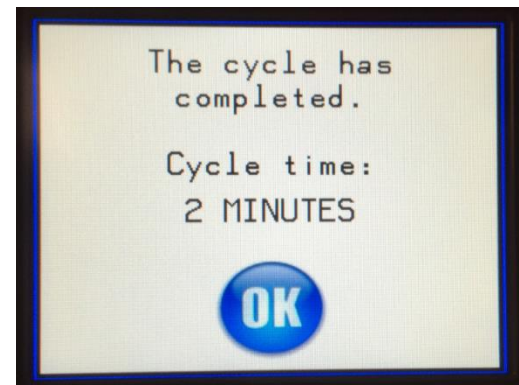
Press the **Up Arrow** on the remote fob. The unit will produce a sound “beep” and the cycle will begin. When the cycle is complete the unit will produce an auditory “beep”.

If the operator needs to cancel the cycle, press the **Down Arrow** on the remote fob. The unit will stop the cycle and the lamps will turn OFF.

Alternately, the cycle can be started by pressing the **Start** button on the **Cycle Ready** screen before exiting the room. If the cycle is started in this way, it will disable the remote fob for the remainder of the cycle. Once the **Start** button is pressed the **Countdown Timer** screen will be displayed. You must leave the room before the timer gets to zero.



Upon completion of the cycle the screen will display the **Cycle Complete** screen.



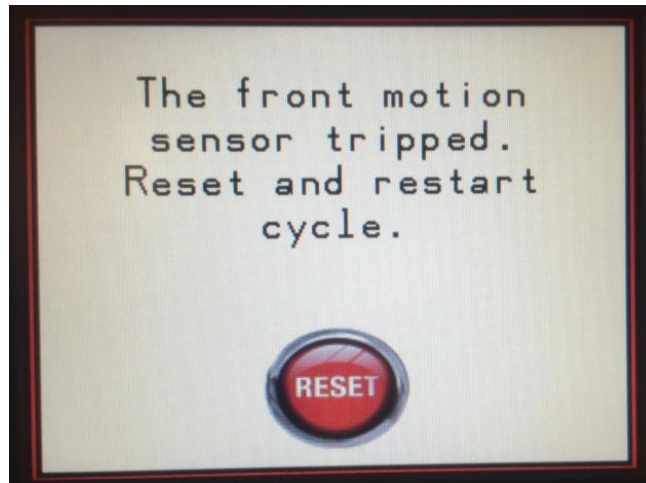
The length of cycle completed will be displayed.

WARNING:

Before entering the room after the cycle is complete proper PPE to cover exposed skin and proper UV resistant eye protection should be worn by the operator to prevent any accidental skin or eye exposure to UVC.

Faults

If motion is detected during the cycle the unit will cancel the cycle, power OFF the lamps, auditory alarm “beeps” and the screen displays a **motion sensor fault** screen that shows which motion sensor (front, left, rear, right) has tripped.



Press the **Reset** button to return to the **Main Menu**.

If the **Cycle Ready** screen is displayed but the **Start** button is not pressed the system will fault after 2 minutes.



Press the **Reset** button to return to the **Main Menu**.

Moving the Unit

Unplug the unit from the electrical outlet. Ensure that all casters are unlatched. The unit is now ready to move to the next room to be disinfected. When moving the unit always maintain contact with the handrails to ensure that control of the unit is maintained. Do not run while moving the unit.

Lamp Installation

Note: Clean, cotton gloves must be worn when lamps are installed to prevent fingerprints on lamps.

1. Allow the unit and lamps to cool. The unit and lamps should be allowed to reach close to room temperature before handling.



2. Turn off power to the system. Ensure there is no voltage being supplied to the unit in order to prevent any possibility of UV exposure or electrical shock.

3. If the unit has a lamp in place, carefully remove the lamp by firmly gripping the lamp at the terminal ends and disconnecting it from the lamp connector.

4. Carefully slide the lamp up through the grommet, and angle the lamp outwards. Slide the lamp out of the grommet.

5. Properly dispose of the lamp in accordance with Local, State, and Federal Regulations.

6. To install a new lamp, remove the lamp from the original packaging. Clean gloves should be worn when handling the UV lamps. Wipe the lamp using the provided alcohol wipes or use 90% isopropyl alcohol and lint-free cloths.

7. Gently insert the lamp into the grommet fitting and angle the bottom lamp back into the proper position.

8. Firmly seat the lamp into the lamp connector.

9. Repeat for other lamps as necessary.

Maintenance

MR33-8-P0Z requires very little maintenance:

- Replace all lamps after 12,000 burning hours or a two (2) year period.
- Clean any material or deposits on the lamps or unit casing.
- Visually inspect the unit for damage prior to operation. DO NOT use if there is damage.

Please contact the manufacturer or a certified distributor to schedule a maintenance call to repair the machine.

Storage

Store the unit in a dry, temperature-controlled environment.

Troubleshooting

Issue	Resolution
The unit has lost power.	Verify the unit is plugged in to a proper electrical outlet. Check the fuse located underneath the unit, next to the power cord.
Lamps will not come on.	Check fuses.
One lamp doesn't come on.	Replace lamp.

Please contact the manufacturer or a certified distributor to schedule a maintenance call to repair the machine.

Spare Parts

MR33-8-POZ (120V)

Part #	Description
TXG320	Ballast
GML100	Lamp, 33", standard output
SEN-002	Sensor, Motion
PLC-340	PLC Controller
PSD-010	Power Supply, 24V DC
PSD-016	Power Supply, 12V DC
PLC-402	Touch Screen HMI
FUSE020	Fuse, 2 A, 450V, fast acting
FUSE038	Fuse, 6A, 250V, MDA Delay
PLT-080	Buzzer
CTL-311	Remote control RF wireless

MR33-12-P2W (230V)

Part #	Description
TXG320	Ballast
GML100	Lamp, 33", standard output
SEN-002	Sensor, Motion
PLC-340	PLC Controller
PSD-010	Power Supply, 24V DC
PSD-016	Power Supply, 12V DC
PLC-402	Touch Screen HMI
FUSE020	Fuse, 2 A, 450V, fast acting
FUSE038	Fuse, 6A, 250V, MDA Delay
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Appendix A. Electrical Schematics