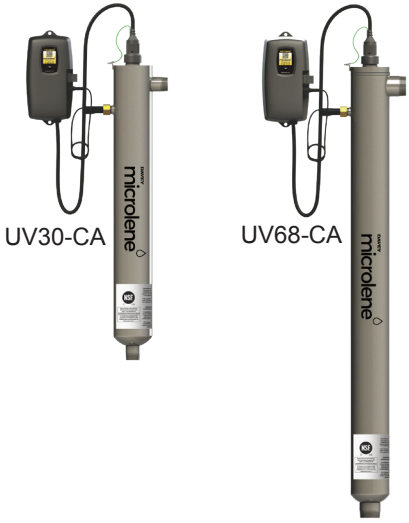
DAVEY

microlene

UV Disinfection System

Installation and Operating Instructions



NSF/ANSI STANDARD 55 CLASS A	
NSF US — System Tested and Certified by NSF International against NSF/ANSI 55 for Disinfection Performance, Class A	
MODELS	
System	**Flow Rate (40mJ/cm² @ 70% UVT)**
UV30-CA	29.9 lpm (7.9 gpm)
UV68-CA	68.1 lpm (18 gpm)

WaterMark

NSF US

Please pass these instructions on to the operator of this equipment.

Congratulations on purchasing this ultraviolet disinfection system. By purchasing a Microlene UV Disinfection System you are receiving not only a high quality product but also peace of mind. Protecting your water supply with a UV system gives you reassurance that your family will have access to safe drinking water throughout your entire home protecting from microbiological contamination. This is a chemical free process which is simple in its concept and effective in its abilities to inactivate microorganisms present in the water supply. Simple maintenance, continuous disinfection and ultimately safe water, Microlene makes it that easy.

These instructions are also available in soft copy via email from Microlene Customer Service.

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Safety Considerations

Although your UV system has been manufactured to the highest safety standards, care must be followed when operating and/or maintaining your system.

1. Please read the instructions.

   - This appliance contains a UV-C emitter.
   - Unintended use of the appliance or damage to the housing may result in the escape of dangerous UV-C radiation. UV-C radiation may, even in little doses, cause harm to the eyes and skin.
   - The appliance must be disconnected from the supply before replacing the UV-C emitter.
   - The appliance is intended to be permanently connected to the water mains and not connected by a hose-set.

2. Before servicing this equipment, disconnect the power cord from the electrical outlet.
3. **Energy given off by the UV lamp is harmful to your eyes and skin**. NEVER look directly at an illuminated UV lamp without adequate eye protection and always protect your skin from direct exposure to the UV light. **WARNING:** Do not operate the UV-C emitter when it is removed from the appliance enclosure.
4. The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
5. Children should be supervised so that they do not play with the appliance.
6. The appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30mA.
7. Maximum working voltage of built-n UV driver U-OUT-250V
8. Maximum operating pressure stated in the instruction manual is 1034 kPa (150 psi).
9. For complete disinfection, use ONLY genuine Microlene replacement parts.
10. Do not operate the unit if it has any damaged or missing components.
11. To avoid possible electrical shock, use only with a properly grounded electrical outlet.
12. Never perform any maintenance to the system unless you are comfortable in doing so. Contact the manufacturer for service instructions if required.
13. Do not use this system for any purpose other than what it was intended for. Misuse of this system could potentially cause harm to the user or others.
14. Your system is intended to be installed indoors and away from leaking plumbing. DO NOT plug the unit in if the system or any of the components are wet. The UV system should only be installed outdoors if a suitable covering has been installed to prevent direct contact with the environment (Rain).
15. The disinfection system should be directly installed into a ground fault circuit interrupter (GFCI). If the use of an extension cord is required, the cord must be manufactured with a minimum of 1.3mm (16 gauge) wire and care should be taken to avoid potential tripping hazards.
16. We recommend that a licensed plumber or certified technician install the system.
17. To protect your UV system from the weather, make sure the site is water proof, frost free and has adequate ventilation. Allow for drainage, to avoid damage to flooring etc., that over time may occur from leaking pipe joints or seals.

18. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

This product is not to be used for general lighting / illumination.

Before You Begin

The following will be needed for installing the UV system:

Tools

- Pipe cutter, hacksaw or other specialised tools required to cut into your existing plumbing (e.g. if you have PEX piping)
- Soldering tools such as torch, flux, emery cloth and solder (only applicable if working with copper pipes and connections)
- Wrench (for tightening fittings)

Other Materials

- Inlet/outlet connections
- Teflon™ tape

Water Quality Parameters

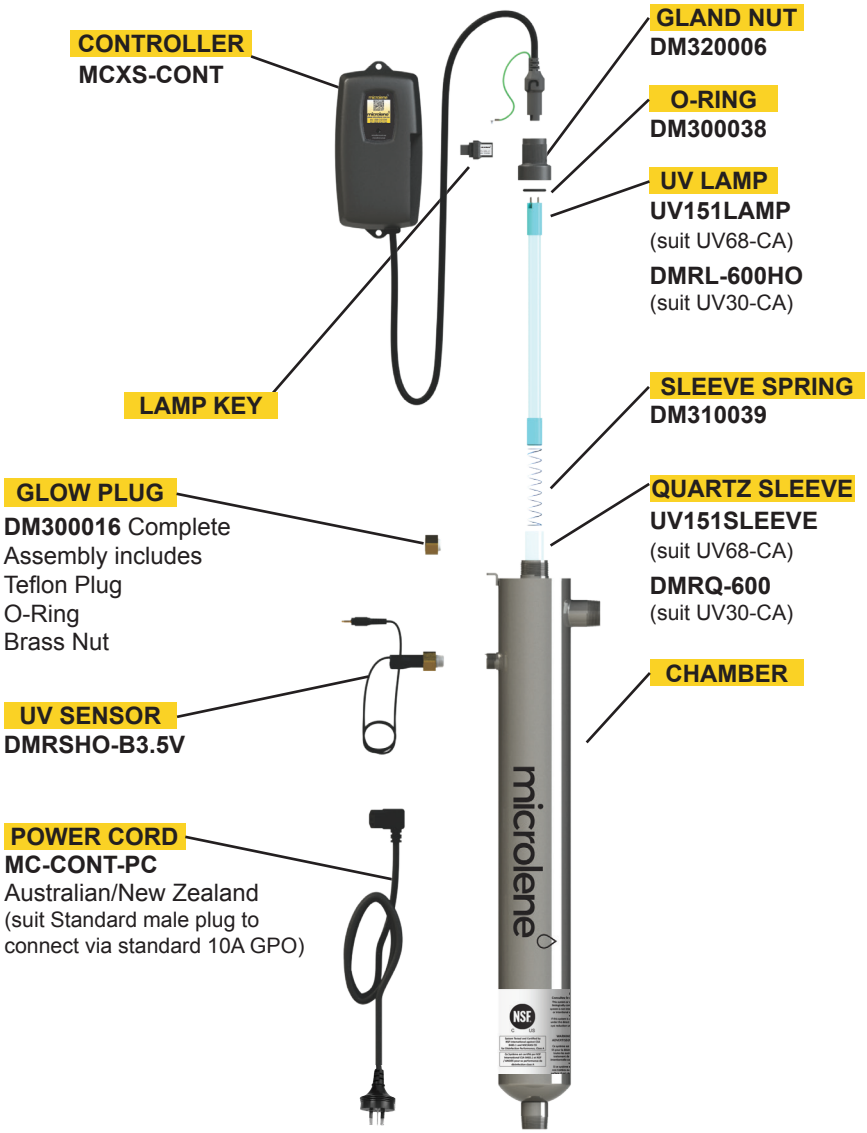
UV disinfection is extremely effective against microorganisms but only if the UV light can pass through the water it needs to treat. This means that the quality of your water is very important in order to ensure complete disinfection.

Treated water should be tested for at the least the parameters listed below. If the water exceeds the listed parameters Microlene strongly recommends that appropriate pretreatment equipment be installed (equipment required will depend on parameters being treated):

Hardness:	<120ppm (120 mg/L) – if hardness level is 120ppm, or slightly below the quartz sleeve must be cleaned periodically in order to ensure efficient UV penetration; if above the water must be softened.
Iron (Fe):	<0.3 ppm (0.3 mg/L)
Manganese (Mn):	<0.05 ppm (0.05 mg/L)
Turbidity:	< 1 NTU
Tannins (organics):	<0.1 ppm (0.1 mg/L)
UVT (transmittance):	>85% (Please contact Microlene if water has a UVT that is less than 80% for pre-treatment recommendations)

You can have your water tested at a private analytical laboratory or by your local dealer. It is always recommended to install pre-filtration of at least 1 micron prior to a Microlene UV disinfection system.

High Output (HO) Lamp System UV30-CA / UV68-CA



System Sizing

All DAVEY NSF UV systems are rated for a specific flow rate in water that meets the quality parameters on page 5. The NSF systems have a built in flow restrictor to ensure flow does not exceed the specification design.

Location

For Point of Entry (POE) systems, choose a location where the main cold water line is accessible. The system must be installed after other water treatment equipment (softener or filters), but before any branches (See Figure 1). Microlene recommends that a 1 micron filter be installed **before** the UV system for a final polishing step before the water is disinfected.

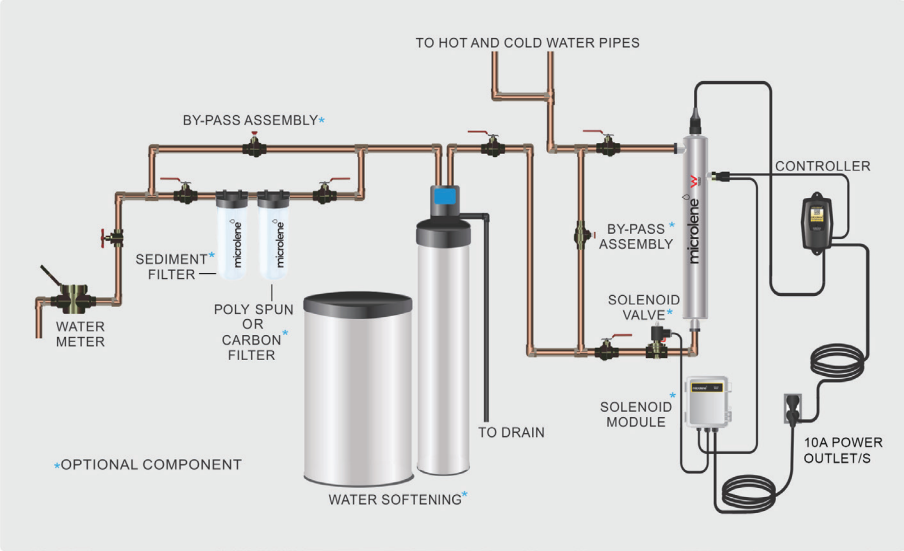


Figure 1. Recommended POE Installation Location

To facilitate lamp removal, ensure there is enough space at the lamp connector end to safely remove the UV lamp and/or quartz sleeve (See Figure 2). The controller will require a ground fault circuit interrupter (GFCI or GFI) outlet and should be mounted beside or above the chamber.

IMPORTANT:
All Microlene UV Disinfection Systems are intended to be installed under a weather proof cover and should not be exposed to the open elements.

Installation

Step 1: The chamber can be installed either horizontally, or vertically using the clamps provided. Vertical installation is the preferred method with the inlet at the bottom (lamp connection at the top) as it allows any air that may be in the lines to be easily purged from the system.

If the chamber is being mounted horizontally, it should be mounted so that water flows out of the threaded outlet upwards. This ensures the chamber is completely full of water before existing the chamber, allowing the water maximum exposure time to the UV light.

Step 2: The use of a by-pass assembly is recommended as it will allow you to isolate the UV chamber. This will allow for easier access in case maintenance is required (See Figure 4).

Step 3: Fasten chamber clamps to wall with screws provided. The screws must anchor securely into solid wood, concrete, or steel structure for adequate strength. Do not attempt to secure screws into drywall (Figure 3a). Install Chamber into clamps (Figure 3b).

Step 5: It is recommended to have a licensed plumber connect the UV chamber to the water supply and may be a requirement depending on where you are located.

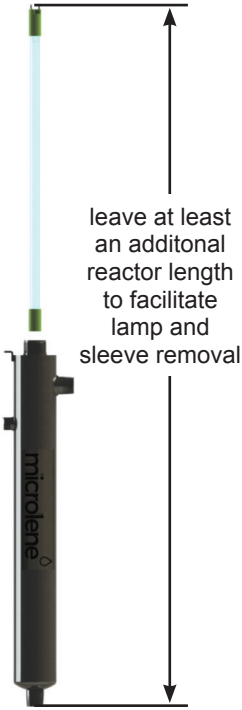


Figure 2.Lamp Removal Spacing



Figure 3a. Fasten clamps to wall

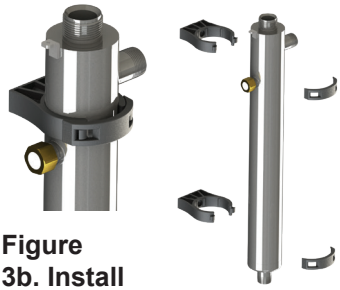


Figure 3b. Install chamber into champs

Note: Installation of your Microlene UV Disinfection System shall comply with applicable provincial/state & local regulations.

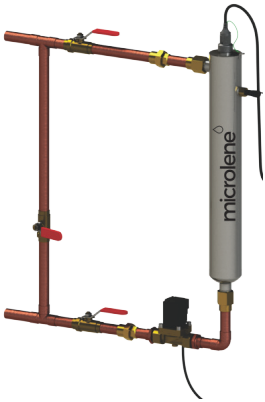


Figure 4. By-pass assembly

Step 6: Once the system has been plumbed in, gently remove the quartz sleeve from its packaging being careful not to touch the length with your hands. The use of cotton gloves is recommended for this procedure as oils from the hands can leave residue on the sleeve and lamp which can ultimately block the UV light from getting to the water.

Carefully slide the sleeve into the chamber until you can feel it hit the opposite end of the chamber. Align the sleeve so it centered along the length of the chamber, then gently push it in to lock it into the internal centering springs in the far side of the chamber. CAUTION: Pushing too hard when the sleeve is not aligned can damage the centering springs. Slide the o-ring onto the sleeve until it is butted up against the chamber.

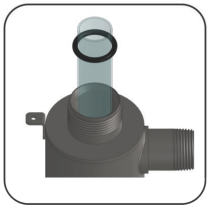


Figure 5. Quartz Sleeve Installation

Step 7: Hand tighten the provided gland nut over the quartz sleeve onto the threaded end of the chamber. It has a positive stop to prevent over-tightening. A firm force may be required to fully tighten the gland nut, but DO NOT USE TOOLS for this step. Insert the provided stainless steel compression spring into the quartz sleeve. The spring works with the lamp and lamp connector to create the proper lamp alignment. **PLEASE NOTE:** DO NOT install a UV lamp inside the quartz sleeve without the sleeve spring in place.

Step 8: Install the UV sensor. Align the flat portion so it faces the gland nut end and matches up with the half metal lip on the sensor port (see Figure 6). Insert the sensor so it is fully seated and hand tighten the sensor nut.

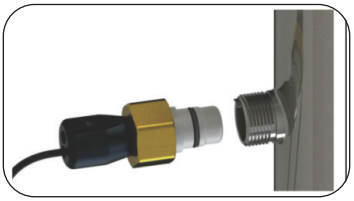


Figure 6. UV Sensor Installation



Figure 7. Fasten Controller



Figure 8. IEP Connection

Step 9: The chamber is now ready for water flow. When all plumbing connections have been completed, slowly turn on the water supply and check for leaks. Make sure the bypass valves are functioning properly and that the water is flowing through the chamber. The most common leak is from the o-ring not making a proper seal on the chamber. For new installations, review steps 5 and 6. For older systems drain the chamber, remove the o-ring, dry it and reapply silicon grease. Reinstall the o-ring ensuring that it is properly sealed against the chamber and check again for leaks.

Step 10: Fasten controller securely to wall with screws provided. Drywall anchors may be used. Note that the controller must be mounted vertically for adequate airflow across the aluminum heat sink on back (see Figure 7). Insert the sensor connector into the IEP located on the right side of the controller (Figure 8). For the sensor to be recognized by the controller, the controller power must be plugged in last. **Do not plug the controller power cord in before the last step.**

Step 11: Always hold UV lamps by their ceramic ends, not by the lamp quartz. Remove the lamp from its packaging. Again, the use of cotton gloves is recommended. Remove the lamp key from the lamp's connector. The lamp key will only be used if the Extra Smart Controller has been purchased to swap out with the standard controller supplied on initial purchase. Standard controller does not use the lamp key therefore lamp key can be discarded. Be careful to not touch the key's exposed contacts. Insert the UV lamp into the chamber, being careful not to drop it.

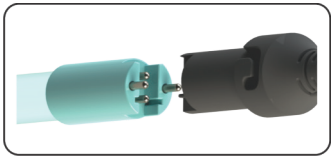


Figure 9. High Output UV Lamp Connection

Step 12: Install the lamp key into the controller. The key always comes packaged with the lamp and sits on the connector. With the key removed from the lamp, orient it so the label is upright and facing you. The key will plug into the lamp key port on the right side of the controller (Figure 10).

Step 13: Plug the lamp connector into the lamp. Note the keying for proper alignment (see Figure 9). Insert the lamp connector into the gland nut and turn the connector approximately ¼ turn to lock the connector to the gland nut as in Figure 11.



Figure 10. Lamp Key Installation



Figure 11. Lamp Connector

Step 14: Tighten the captive ground screw to the ground lug on the UV chamber to ensure proper grounding.

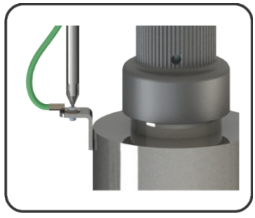


Figure 12. Ground Screw Connection

Step 15: Your system is now ready to be plugged into the appropriate GFCI 10A GPO (230V 1phase) protected outlet. Refer to the following section before any water is allowed to flow through the system.

System Disinfection

With a new installation, or any time the UV system is shut down for service, without power, or is inoperative for any other reason, the lines in the home or facility could be contaminated. Use the following steps to fully disinfect the lines throughout the entire home or facility.

Step 1: Check for and remove any “dead ends” in the lines throughout the home as these can harbour bacteria. Plug in the UV system and wait until it is ready for operation.

Step 2: Remove the filter cartridge from the last sump and fill it with 1-2 cups of household bleach (most are 5.25% chlorine). Replace the sump and slowly turn on the water supply.

Step 3: At a water outlet, run the water until bleach can be smelled. Repeat this for all faucets, toilets, shower heads, refrigerators, outdoor taps, the washing machine, dishwasher, etc. at the home or facility. Once finished, wait a minumum of 30 minutes before continuing.

Step 4: Reinstall the filter cartridge into the sump and flush the chlorine solution by opening all faucets until chlorine can no longer be detected. Your home has now been completely disinfected with your Microlene UV Disinfection System ready to inactivate any microorganisms that enter the home.

Cleaning the Quartz Sleeve

Depending on the water quality, the quartz sleeve may require periodic cleaning. At a minimum, the quartz sleeve should be cleaned on an annual basis. The following steps outline a basic cleaning procedure.

Step 1: If a by-pass assembly is installed, shut the inlet valve off to prevent water flow through the system. Otherwise, turn off main water inlet valve (and/or turn off the water pump).

Step 2: Disconnect power cord of UV system from electrical outlet.

Step 3: Release water pressure by opening a downstream faucet and then close the outlet shut-off valve (if any). If there is no outlet shut-off valve, expect water to drain from the system as the head pressure in the system will cause the water to flow back down.

Step 4: Remove the captive ground screw from the ground lug on the UV chamber.

Step 5: Remove the lamp connector from the chamber (gland nut) by pushing the lamp connector in and turning it ¼ turn counter-clockwise. Disconnect the lamp connector from the lamp. CAUTION: the lamp may be hot!

Step 6: Being careful to touch only the ceramic ends, remove the lamp out of the chamber.

Step 7: Unscrew the gland nut from the chamber exposing the end of the quartz sleeve.

Step 8: Remove the quartz sleeve and o-ring by **gently twisting and pulling** the quartz sleeve.

Step 9: Using a soft, lint-free cloth or towel wipe the sleeve down using a commercial scale cleaner (i.e. CLR® or LIME-A-WAY®). This removes scaling or iron deposits that may be on the outside of the quartz sleeve. Be careful not to get any moisture or liquids inside of the sleeve.

Step 10: Dry the sleeve with separate cloth.

Step 11: Replace the o-ring and slide the sleeve back into the chamber following steps 7 and 8 from the installation section of the manual.

Cleaning the UV Sensor

Depending on the water quality, the UV sensor may require periodic cleaning. At a minimum, the UV sensor should be cleaned on an annual basis. The following steps outline a basic cleaning procedure.

Step 1: If a by-pass assembly is installed, shut the inlet valve off to prevent water flow through the system. Otherwise, turn off main water inlet valve (and/or turn off the water pump).

Step 2: Disconnect power cord of UV system from electrical outlet.

Step 3: Release water pressure by opening a downstream faucet and then close the outlet shut-off valve (if any). If there is no outlet shut-off valve, expect water to drain from the system as the head pressure in the system will cause the water to flow back down.

Step 4: Place something under the chamber to catch any water that may come out of the chamber during the removal of the UV sensor.

Step 5: Unscrew (counterclockwise) sensor nut from the chamber and pull the sensor slowly out of the sensor port.

Step 6: Holding the sensor in your hand wipe the flat portion (sensor face) of the sensor with isopropyl alcohol using a clean lint-free cloth.

Step 7: Replace sensor following step 9 from the installation section of the manual.

Operation

Microlene UV Disinfection Systems come with a feature laden controller that incorporates both the lamp driver (ballast) and control features in one water-tight case. All models feature a power factor corrected, constant current lamp driver with a universal power input.

Please Note: While the LCD or display screen is red and the buzzer is sounding the water from the system should NOT be consumed. If any water does pass through the system during this period, please follow the disinfection procedure as outlined in this manual before the water is consumed. Please have your water checked for microbiological contaminants on a regular basis.

IMPORTANT: Installation of a backflow valve should be in compliance with all local water authority regulations and in accordance with AS/NZS 3500.1.2 and complying with AS/NZS 2845.1.

MCXS Controllers



MCXS Series

A full colour LCD screen provides the user with a detailed description of the system's performance in addition to providing any applicable fault messages and system diagnostics. All controllers include an "infinite expandability port" located on the right side of the controller. Simply plug in a UV sensor module into the expandability port of a controller for the system to monitor the UV intensity of the system.

MCXS Power-up Sequence

On start up, the controller will run through a diagnostic start-up and the sequence will be displayed as follows on the colour LCD:



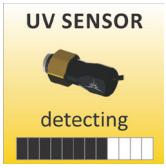


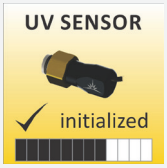


Next, the controller checks for and initialises any optional modules that may be attached to the system.

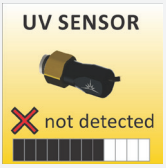
Optional Modules Check

- **UV Sensor***
- **Solenoid**
- **4-20 mA**
- **Remote Alarm**
- **Flow Meter**



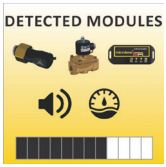


OR



A final module screen is displayed showing which specific modules that were initialised.

The controller then displays the lamp optimisation screen for 60 seconds to allow the lamp to reach its optimum output. Finally, a final "start-up complete" screen is displayed. The system will now be ready to disinfect water flow.



all detected modules



lamp reaching max output



successful start-up

* Included with UV30-CA / UV68-CA systems.

Operational Screens

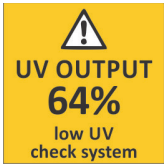
On systems without the UV monitor, the default screen shows the **Microlene Home Screen**. At any point during operation the user is able to scroll through the **Microlene Home Screen, Lamp life remaining**, **QR Code, Contact Info and Maintenance Parts** screens by pressing the button located on the front of the controller.

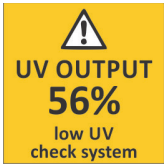


On systems with the UV monitor, the system will display the same screens except the UV Intensity replaces the home screen. The UV Intensity screen displays the level of UV light detected by the sensor. UV intensity can be affected by poor water quality, scaling on the quartz sleeve and/or sensor, lamp failure or lamp expiring. The following screens show the UV Intensity dropping.

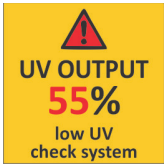




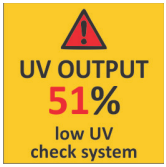




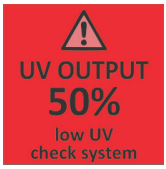
Below 56%, the numbers and warning sign turn red and an audible chirp is given by the ballast every 15 seconds. Below 51%, the screen is solid red and a constant audible alarm is given. This alternates with a screen indicating “water may be unsafe for consumption”. If you have a solenoid module the controller de-activates the solenoid valve, shutting off all water flow.



audible chirp every 15 seconds



audible chirp every 15 seconds



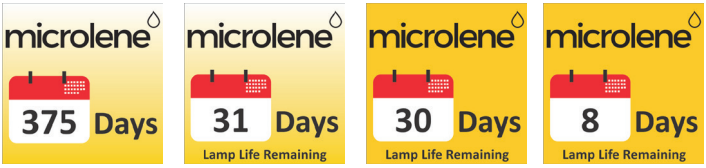
constant audible alarm



cycles with red low uv screen

Lamp Countdown Sequence

The system counts down the number of days until a lamp change is required.



At thirty days remaining, the display screen will change to a yellow caution indicator. At seven days remaining, the sytem will additionaly repeat an audible chirp. Past the zero day threshold, the display screen changes to solid red with a continuous buzzer.



At any point during this sequence, the audible chirp or alarm can be deferred for seven days by holding the controller button down for a period of five seconds. The number of deferrals used will be displayed as below. Once the deferral expires, the alarm will sound once again. The deferral can be repeated up to three times. **PLEASE NOTE:** At any point after lamp expiration, the water may be unsafe for consumption and should not be consumed without another form of disinfection.



System Service Suggested

Controllers will display the System Service Suggested Screen every 6 months to remind consumers to maintain both their UV and other prefiltration. This will serve as a prompt only and will not put the system into alarm. To clear this condition simply press the button located below the screen.



Lamp Replacement

After the lamp is expired, it must be replaced with the same part number as indicated on the Maintenance Parts screen or on the label on the chamber. With the system powered down, remove and discard the lamp key from the controller. The replacement lamp is packaged with a lamp key on the connector at the end of the lamp. Remove the key from the lamp and place it in the controller. Refer to **Installation**, starting with step 11 (page 11) for instructions on installing the new lamp.

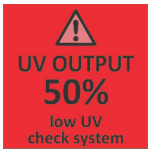
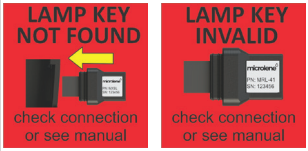
QR Codes

Microlene uses the QR code to store a link to our website. Users with a camera phone equipped with the correct reader application can scan the image of the QR code and over a wireless network connect to our web page in the phone's browser.

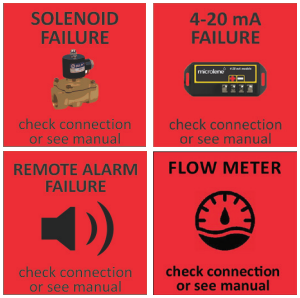


System Troubleshooting

Hard Alarms: The following give a constant audible alarm. If present, the solenoid valve is closed, and the remote alarm transmits the alarm.

System Display	Problem	Resolution
	The system has detected a problem with the lamp.	Reset lamp protection circuit -unplug unit for 10 seconds. Replace the lamp with the part as indicated on the silver label on the chamber or on the Maintenance parts screen.
	Although the lamp is powered and visibly illuminated, due to the lamp's age its UV output is no longer sufficient for proper disinfection.	Replace the lamp with the part as indicated on the silver label on the chamber or on the Maintenance parts screen.
	Low UV Intensity.	Remove and clean the quartz sleeve and sensor.Check water quality meets requirements on page 5 and add filtration as required. Replace lamp.
	Wrong lamp or sensor installed.	Replace component with proper model as indicated.
	The UV sensor is no longer communicating with the system.	Ensure all modules are connected properly to the system and to each other. Modules can be tested individually by plugging in one at a time and cycling power to the system. Replace any module that is not detected when plugged directly into the controller.
	A bad connection has been detected in the IEP port.	
	Missing or incorrect lamp key.	Ensure the lamp key (packed with the lamp, on the connector) is installed. Unplug and reinstall the key. Ensure the key part number matches Lamp on Maintenance Parts screen.

Soft Alarms: The following remaining errors give a 15 second audible chirp only

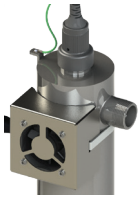
System Display	Problem	Resolution
	The module indicated is no longer communicating with the system.	Ensure all modules are connected properly to the system and to each other. Modules can be tested individually by plugging in one at a time and cycling power to the system. Replace any module that is not detected when plugged directly into the controller.
	1. Turbulent flow is present. 2. Air bubbles or solid particles in the Flowmeter body/pipe. 3. Internal damage caused by plugging an AC/DC wall adapter. that is rated more than +5VDC or dropping the device.	1. Make sure there is proper length of straight piping on the inlet side of the Flowmeter. As well the direction of flow is in the correct direction. 2. Verify installation is correct, remove any air bubbles from water supply, add filtering to reduce solid particles from entering Flowmeter. 3. Replace Flowmeter.

Warning: After any hard alarm, the home or facility should be disinfected. Follow the steps under the “System Disinfection” heading.

ATTENTION: If any failure occurs on a Microlene UV Disinfection System, the water must not be used for human consumption until the system is returned to a safe operational mode. If the water is used for human consumption during this period, the water must be boiled (minimum 20 minutes at a full boil) prior to consumption. Alternatively, use Davey Acquasafe to disinfect the water.

Temperature Management Devices

Your Microlene UV Disinfection System is designed to run continuously to ensure optimal disinfection. However, during periods when no water is drawn through the system, the energy from the disinfection process can cause the temperature of the water inside the chamber to rise. In extreme situations elevated water temperature or the fluctuation in temperature can lower the output of the UV lamp. In these cases, or if the elevated water temperature is a nuisance, Microlene recommends one of the following forms of temperature management devices.



Cooling Fan
The fan runs continuously to cool the water by forced convection. The long-life fan is powered independently using a compact modular power adapter that operates from 90-265V (47-63Hz). Order PN **DM130014.**



Temperature Relief Valve (TRV)
On reaching a higher temperature, the TRV is designed to drain a small amount of water to allow fresh, cooler water to enter the system. The TRV works without power and comes complete with 10' of drain line. Order PN **DM130033** for 1" ports and PN **DM130034** for 1 1/2" ports.

Expansion Modules

Controllers incorporate an "**Infinite Expandability Port**" (**IEP**) which allows for expansion to the UV sensor and all other modules. Each module (including the sensor) comes with both a male and female connection. Connect any device to the controller and all subsequent devices are then connected into the female end of last device added in a "daisy chain" configuration. The UV sensor must only be supplied at SELV.





REMOTE ALARM CONNECTION MODULE: Allows for a connection to a remote device such as a buzzer, light, alarm system, PLC, etc., via a pair of contacts. In normal operation the OK and COM contacts will be connected, and in a fault condition (Low UV, Lamp fail, Power Fail), the Fault and COM contacts will be connected. Maximum Contact Rating is 30V / 1A (use 16-22 AWG). Order PN **DMMOD-RAM**.



SOLENOID CONNECTION MODULE: Connects a NORMALLY CLOSED line voltage solenoid valve to the controller. On a non-monitored system, the solenoid will only close on a lamp failure error. On a monitored system, the solenoid is closed when the UV level drops below 50%. Also note that in cases where emergency use of untreated water is required, the controller can be placed into a manual override mode allowing for the flow of water in an alarm condition. Maximum contact rating is 240VAC (50-60Hz) / 30VDC / 2A. Order PN **DMMOD-SOL1**.



4-20 mA MODULE: Outputs a 4-20mA signal of the UV output to a remote device such as a data logger or computer. Order PN **DMMOD-420.**

Microlene NSF High Output System Specifications

microlene	EQUIPMENT SPECIFICATIONS Multi-Use / Residential systems (high output lamps)	
MODEL	**UV30-CA**	**UV68-CA**
NSF Class A Flow Rate 40mJ/cm2 @ 70% UVT	29.9 lpm	68.1 lpm
	7.9 gpm	18 gpm
	1.8 m^3/hr	4.08 m^3/hr
Port Size	1"MNPT	1 ½"MNPT
Electrical Input	90-265V/50-60Hz. 1 phase 1A Max.	
Plug Type	Australian/New Zealand, Standard male plug to suit standard 10A GPO in compliance with AS/NZS 3112, 3-wire for all 230V (MC-CONT-PC)	
Lamp Power (Watts)	67	101
Power (Watts)	72	108
Replacement Lamp	DMRL-600HO	UV151LAMP
Replacement Sleeve	DMRQ-600	UV151SLEEVE
Reactor Dimensions	8.9 x 68.3 cm	8.9 x 103.4 cm
Chamber Material	316L Stainless Steel, A249 Pressure Rated Tubing	
Controller Dimensions	17.2 x 9.2 x 10.2 cm	21.7 x 10.8 x 10.2 cm
Operating Pressure	69 - 1034 kPa (10 - 150 psi)	
Operating Water Temperature	2-40° C (36-104° F)	
UV Sensor	YES - **DMRSHO-B3.5V** (included)	
Solenoid Output	Optional upgrade **DMMOD-SOL1**	
Dry Contacts	Optional upgrade **DMMOD-RAM**	
4-20mA Output	Optional upgrade **DMMOD-420**	
Temperature Mgmt. Valve	OPTIONAL **DM130033** 1" (suit UV30-CA) sold separately	OPTIONAL **DM130034** 1 ½" (suit UV68-CA) sold separately
Transmitter and Remote Display	Optional upgrade **DMMOD-SHERPA4**	
Cooling Fan	OPTIONAL (**DM130014** sold separately)	
Lamp Change Reminder	YES	
Lamp Out Indicator	YES	
Shipping Weight	7.3 kg	9.8 kg

Performance Data Sheet (on all NSF/ANSI Standard 55, Class A Systems)

US

System Tested and Certified by NSF International against NSF/ANSI 55 for Disinfection Performance, Class A

Model	UV30-CA	UV68-CA
NSF Class A Flow Rate (40mJ/cm² @ 70% UVT)	29.9 lpm 7.9 gpm 1.8 m³/hr	68.1 lpm 18 gpm 4.08 m³/hr
Port Size	1" MNPT	1½"MNPT
Electrical	90-265V/50-60Hz. 1 phase 1A Max.	
Operating Pressure	69 - 1034 kPa	
Operating Water Temperature	2-40° C (36-104° F)	

Lamp Life: UV lamps are rated for 10,000 hours of continuous use (approximately 14 months of operation)

General Operation and Maintenance: UV lamps are to be replaced on an annual basis. Quartz sleeves and UV sensors are to be cleaned every 6-12 months and replaced every 5 years.

This Class A system conforms to NSF/ANSI 55 for the disinfection of microbiologically contaminated water that meets all other public health standards. The system is not intended to convert wastewater or raw sewage to drinking water. The system is intended to be installed on visually clear water.

NSF/ANSI 55 defines wastewater to include human and/or animal body waste, toilet paper, and any other material intended to be deposited in a receptacle designed to receive urine and/or feces (blackwaste), and other waste materials deposited in plumbing fixtures (greywaste).

If this system is used for the treatment of untreated surface waters or ground water under the direct influence of surface water, a device found to be in conformance for cyst reduction under the appropriate NSF/ANSI standard shall be installed upstream of the system.

While testing was performed under standard laboratory conditions, actual performance may vary.

The systems and installation shall comply with applicable provincial/state and local regulations.

Microlene Systems Limited Warranty Statement

Products manufactured by Davey Water Products Pty. Ltd. are warranted to the original user only to be free of defects in material and workmanship for a period as specified below. This warranty only applies to the original purchaser and is not transferable.

UV SYSTEMS

Ten (10) year Limited Warranty on the stainless steel chamber, from the date of original purchase, or installation (proper documentation required for verification).

ELECTRONICS

Three (3) year Limited Warranty on the ballasts and controllers, from the date of original purchase, or installation (proper documentation required for verification).

UV LAMPS, UV SENSORS & QUARTZ SLEEVES

One (1) year Limited Warranty on all Microlene ultraviolet lamps, UV sensors and quartz sleeves from the date of original purchase, or installation (proper documentation required for verification).

This Microlene Ultraviolet Disinfection System will be repaired or replaced, at our sole option, providing that the ultraviolet system or any component is defective in materials or workmanship for the periods outlined above and subject to the “Limitations of Warranty” as outlined below. Microlene’s liability under this warranty shall be limited to repairing or replacing the product, without charge, F.O.B. Microlene’s closest Distribution Facility or authorised service depot. Microlene will not be liable for any costs of removal, installation, transportation, or any other charges which may arise in connection with a warranty claim. Microlene will not be liable for damage or wear to products caused by abnormal operating conditions, accident, abuse, misuse, unauthorised alteration or repair, or if the product was not installed in accordance with the Manufacturers printed installation and operating instructions.

LIMITATIONS OF WARRANTY

This warranty does not apply to any of the following:

- Water Quality Parameters lie outside of the following ranges
  - Hardness > 120 mg/L (7 gpg)
  - Iron > 0.3 mg/L (ppm)
  - Manganese > 0.05 mg/L (ppm)
  - Tannins > 0.1 mg/L (ppm)
  - Turbidity > 1 NTU
  - Transmittance (UVT) < 75%
- A product that has been incorrectly installed according to the technical installation manual.
- A product that has been modified in any manner, unless approved by the manufacturer.
- A product where the serial number has been altered defaced or removed.
- Damage caused by the use of parts that are not compatible, suitable and/or authorised by Microlene for use with the product (e.g. non-original lamps or sleeves).
- Damage caused during shipment of the product.
- Water damage is found inside ballast housing or controllers.
- Product is installed outdoors in direct contact with the environment (rain).
- Product is installed in freezing temperatures.
- Product is used in conditions that exceed Microlene’s specifications.

Davey Warranty

Davey Water Products Pty Ltd (Davey) warrants all products sold will be (under normal use and service) free of defects in material and workmanship for a minimum period of one (1) year from the date of original purchase by the customer as marked on the invoice, for specific warranty periods for all Davey products visit daveywater.com.

This warranty does not cover normal wear and tear or apply to a product that has:

- been subject to misuse, neglect, negligence, damage or accident
- been used, operated or maintained other than in accordance with Davey's instructions
- not been installed in accordance with the Installation Instructions or by suitably qualified personnel
- been modified or altered from original specifications or in any way not approved by Davey
- had repairs attempted or made by other than Davey or its authorised dealers
- been subject to abnormal conditions such as incorrect voltage supply, lightning or high voltage spikes, or damages from electrolytic action, cavitation, sand, corrosive, saline or abrasive liquids,

The Davey warranty does not cover replacement of any product consumables or defects in products and components that have been supplied to Davey by third parties (however Davey will provide reasonable assistance to obtain the benefit of any third-party warranty).

To make a warranty claim:

- If the product is suspected of being defective, stop using it and contact the original place of purchase. Alternatively, phone Davey Customer Service or send a letter to Davey as per the contact details below
- Provide evidence or proof of date of original purchase
- If requested, return the product and/or provide further information with respect to the claim. Returning the product to the place of purchase is at your cost and is your responsibility.
- The warranty claim will be assessed by Davey on the basis of their product knowledge and reasonable judgement and will be accepted if:
  - a relevant defect is found
  - the warranty claim is made during the relevant warranty period; and
  - none of the excluded conditions listed above apply
- The customer will be notified of the warranty decision in writing and if found to be invalid the customer must organise collection of the product at their expense or authorise its disposal.

If the claim is found to be valid Davey will, at its option, repair or replace the product free of charge.

The Davey warranty is in addition to rights provided by local consumer law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

For any internet connected products the consumer is responsible for ensuring a stable internet connection. In the event of a network failure the consumer will need to address the concern with the service provider. Use of an App is not a substitute for the User's own vigilance in ensuring the product is working to expectation. Use of a Smart Product App is at the User's own risk. To the fullest extent permitted by law Davey disclaims any warranties regarding the accuracy, completeness or reliability of App data. Davey is not responsible for any direct or indirect loss, damage or costs to the User arising from its reliance on internet connectivity. The User indemnifies Davey against any claims or legal actions from them or others relying on internet connectivity or App data may bring in this regard.

Products presented for repair may be replaced by refurbished products of the same type rather than being repaired. Refurbished parts may be used to repair the products. The repair of your products may result in the loss of any user-generated data. Please ensure that you have made a copy of any data saved on your products.

To the fullest extent permitted by law or statute, Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Davey products. This limitation does not apply to any liability of Davey for failure to comply with a consumer guarantee applicable to your Davey product under local laws and does not affect any rights or remedies that may be available to you under local laws.

For a complete list of Davey Dealers visit our website (daveywater.com) or call:

DAVEY

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*** Installation and operating instructions are included with the product when purchased new. They may also be found on our website.**