

DAVEY

microlene



DAVEY AquaShield™

AQUASHIELD 3-STAGE UV SYSTEMS

Model Number:
MCS, KMCS

WARRANTY
10 YEARS on stainless steel chamber
3 YEARS on electronic controller
14 MONTHS on UV Lamps and UV Sensors
14 MONTHS on Filter Housings

APPLICATIONS

Filtration and disinfection of, Rainwater and Bore or surface water – subject to water quality
Suits small to medium home's potable water supply

FEATURES & BENEFITS

Davey's proven three-stage filtration and ultraviolet disinfection systems can provide continuous clean and safe water from your rainwater tanks.

Note: Davey disinfection systems cannot remove dissolved metals, chemicals or toxins from the water. Additional treatment is required for these contaminants.

In conjunction with pre-filtration, UV is the best practical option for treating drinking water and is widely used in disinfecting the drinking supplies of not just individual homes, but entire towns.

Simplistic in operation, these systems feature a tricolour LED that indicates system status and a 4-digit display to indicate lamp life remaining. Pressing the button will change the display to indicate total running time. When the UV lamp is on and within its operating age, the LED will be green. When the UV lamp is not on or the lamp life has expired, the LED will be illuminated red and an audible buzzer will be sounding. To remedy this condition, the UV lamp must be replaced with a new genuine Microlene UV lamp.

MCS features:

- Special filter design with O-ring groove for fail-safe installation

- High maximum operating pressure 827kPa (120 psi), and single manifold heads (no potential leaks between heads)
- Smart controller with a multitude of screens displaying diagnostics, status, warnings and even QR codes for a link to replacement parts
- Tri Colour LED display that indicates system status and a 4-digit display to indicate lamp life remaining
- 316L stainless steel, axial flow chambers allow for optimum efficiency plus lamp and sleeve service without the need to drain the water
- Coated UV lamps for consistent UV output throughout life
- 10,000 hour LP lamps – longest residential lamplife on the market
- Ready for quick installation and use
- 10 year limited warranty on UV chambers
- Splash-proof controller with constant current electronic ballast designed to IP54 ingress protection rating

Note: Cannot treat water contaminated by metals, chemicals or algal toxins.

UV Water Disinfection



MODEL DESCRIPTIONS	
MCS	Includes filter housings mounted with UV chamber and MCS controller - cartridges purchased separately
KMCS	Includes MCS plus 20 micron poly pleated cartridge and 1 micron polyspun cartridge

SERVICE INTERVALS	
UV lamp	Replace 14 months
UV quartz sleeve	Clean 2 - 6 months

MATERIALS OF CONSTRUCTION	
PART	MATERIAL
Chamber	Polished 316L Stainless Steel A249 pressure rated tubing
Wall mounting bracket	Powder coated steel
Chamber connections	1" Male NPT (AU supplied KMCS has BSP adaptor included)
Filter Housing connections	1" Female NPT (AU supplied KMCS has a 1" NPT to 1" BSP male nipple included for incoming pipework)

SPARE PARTS & OPTIONS	
Part code	Description
KMCS	Complete unit with filter cartridges
20PP20J	Poly pleated 20 microns rated cartridge (housing 1)
1PS20J	Poly spun 1 micron rated cartridge (housing 2)
MC-HOLP	High output UV lamp (O-ring included)
MC-HOSL	Quartz sleeve (O-ring included)
MCS-CONT	MCS controller
MC-CONT-PC	Controller power cord - IEC x AUS/NZ 3 Pin male
DM130033	Temperature Relief Valve - Thermal bleed valve activates when water temperature exceeds 32-35°C
DMMOD-SOL1	Solenoid Module
DMMOD-420	4-20 mA module
DMMOD-RAM	Remote alarm module
DM160018	Replacement Dual Cap and twin housing assembly
DM310177	Filter housing replacement O-Ring
WFH45	Replacement spanner
DM310039	Replacement sleeve spring

OPERATING LIMITS	
Flow Rates (subject to dosage, UVT and demand %UVT)	Recommended 56.8 l/min @ 30mj As a general guide, most households do not exceed 50 lpm demand at the same time. For example, 3 outlets turned on at the same time at an average flow rate of 9.3 lpm creates a demand of 27.9 lpm (this flow rate through the chamber will in fact increase the mj UV dosage rate being applied to and treating the water) at this flow rate the water will in fact be treated at 61mj @ 95% UVT which is over double the industry recommended 30mj rating.
Maximum system pressure	690kPa (100 PSI)
Water temperature range	2 - 40°C
Maximum ambient temperature	50°C
Lamp life	10,000 hrs (14 months)

ELECTRICAL DATA	
Supply Voltage	90-265V ~
Supply frequency	50-60Hz
Power (Total)	57W
Phase	1
Lamp	45W
Max input current	0.24A
Max output current	800mA

WATER QUALITY	
Water quality is extremely important for optimum UV performance. Maximum recommended parameters are as follows:	
Hardness	120 mg/L - if hardness level is 120 mg/l 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 (0.3mg/l)
Manganese (Mn)	<0.5 ppm (0.5mg/l)
Turbidity	<1 NTU
Tannins (organics)	<0.1 ppm (0.1mg/l)
UVT (transmittance)	>85% (Please contact Davey if water has a UVT that is less than 80% for pre-treatment recommendations)

UV DISINFECTION SYSTEMS	
Model	MCS/MCXS
Flow Rate (@ 16 mj/cm ² @ 95% UVT)	114 L/min
Flow Rate (@24.2 mj/cm ² @ 95% UVT)	70 l/min
Flow Rate (@ 30 mj/cm ² @ 95% UVT)	56.8 L/min
Flow Rate (@ 40 mj/cm ² @ 95% UVT)	45.4 L/min
NOTE: Flow rates are based on flow velocity of 8.2 ft/sec (2.5 m/sec), flow rate limited to 84 L/min for 1" port before significant pressure drop is realised.	

Controller Information and Diagnostics - Sample Screens



Screen after new lamp inserted successfully showing 375 days lamp life



Screen showing 30 days lamp life remaining and amber LED - time to prepare for lamp replacement

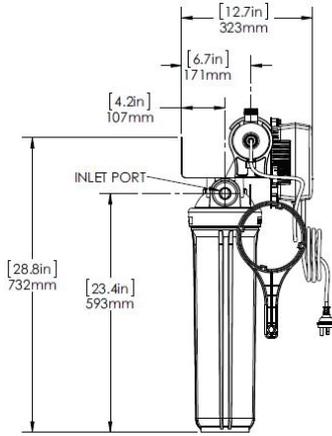


Screen showing lamp life expired one day ago and red LED illuminated. A continuous alarm sound will accompany the red LED.

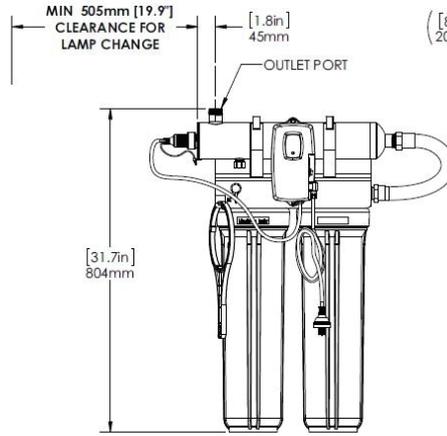
DIMENSIONS (mm)

NOTES:

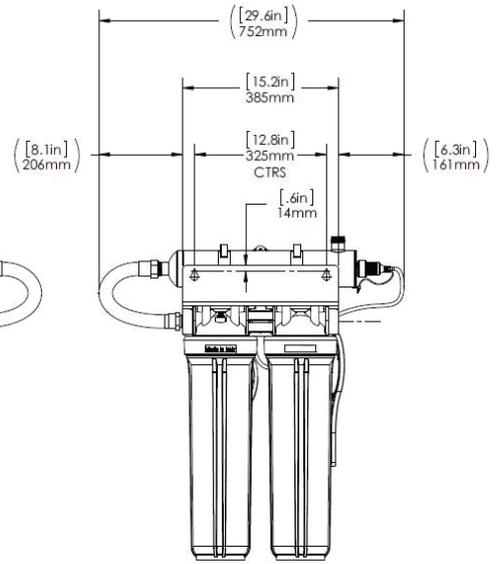
1. INLET PORT: 1" FEMALE-NPT.
2. OUTLET PORT: 1" MALE-NPT.
3. REFERENCE DIMENSIONS IN ROUND () BRACKETS.



Left Side View



Front View



Back View



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