

MP-UVC-2LB / 4LB / 10LB / 24LB

MASSPHOTON

UVC LED Integrated Water Disinfection Module



SGS



CE



MASSPHOTON LIMITED

Semiconductor Ultraviolet Technology and Applications Expert

PRODUCT OVERVIEW

An embedded core disinfection unit for terminal water purification equipment. Featuring UVC-LED technology for instant flow-through disinfection, powered by safe low-voltage DC with no complex external controls.



Powerful Disinfection



Easy Installation & Maintenance



Safe Physical Disinfection



Mercury-Free Zero Pollution



15,000-Hour Long-term Service



Instant On-Demand

CORE FEATURES

Highly-integrated compact structure

All-in-one disinfection chamber, LED, heat sink and seals, no external controls. Compact size, fits narrow installation spaces and enables fast assembly.

Low-voltage operation

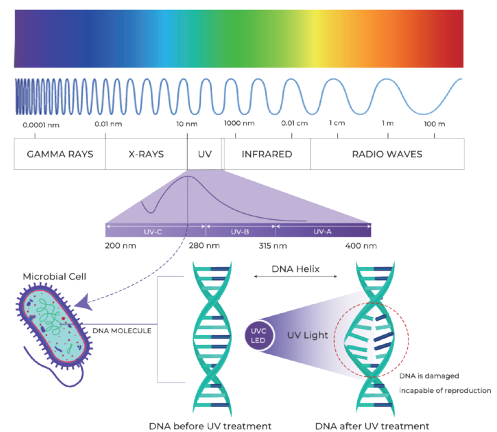
Safe low-voltage DC power. Matches household and small-commercial intermittent water-use cycles; start-stop controlled by main unit.

Standardized, production-friendly interfaces

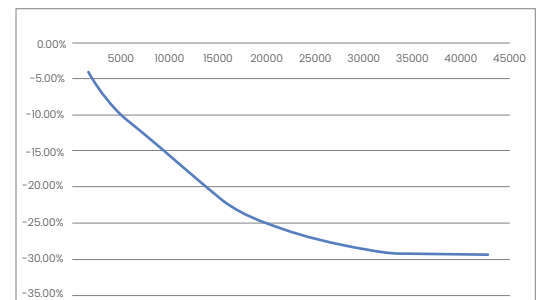
Universal quick-connect / threaded ports for various pipe sizes. No equipment modification, lowering R&D and mass-production costs.

Reliable disinfection

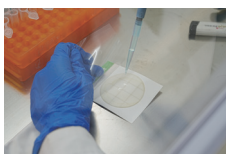
Without independent monitoring or protection. Controlled by host for targeted instant water disinfection, excellent cost-efficiency.



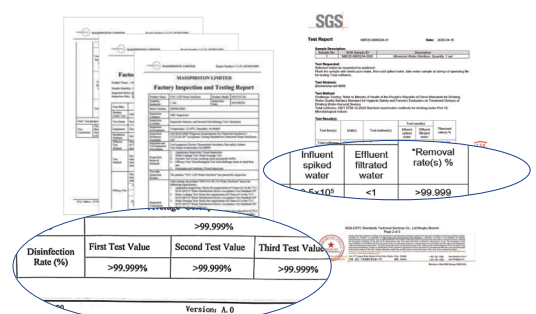
UVC-LED Output Degradation Trend Under Standard Operating Conditions



100% FACTORY-TESTED FOR DISINFECTION EFFICACY



	Control	4.1x10 ⁶ CFU/mL	2.2x10 ⁶ CFU/mL	2.5x10 ⁶ CFU/mL
Control Group Image (10,000 dilution)		41CFU	22CFU	25CFU
Test Group Image (Non dilution)		0CFU	0CFU	0CFU
Test Summary	No E. coli was detected in the experimental group samples	No E. coli was detected in the experimental group samples	No E. coli was detected in the experimental group samples	No E. coli was detected in the experimental group samples



PRODUCT PORTFOLIO

MP-UVC-2LB

Designed for low-flow applications at 2 L/min. Compact food-grade plastic housing for point-of-use water purification and drinking water disinfection in low-pressure systems.



MP-UVC-10LB

Standard cost-effective design with a flow rate of 10 L/min. Features G 1/2" threaded connections for residential and light commercial water purification systems.



MP-UVC-4LB

Compact push-fit design with a flow rate of 4 L/min. Features 3/8" push-fit connections for water purifiers and ice makers.



MP-UVC-24LB

High-flow, low-power design with a flow rate of 24 L/min. Supports wide-temperature operation for commercial recirculation lines and energy-efficient water purification equipment.



APPLICATION SCENARIOS

Widely compatible with small-to-medium civil and commercial water terminals, including household RO water purifiers, whole-house compact water-purification units, commercial pipeline dispensers, smart water fountains, ice makers, beverage machines and mini water disinfection devices. It fulfills point-to-point terminal water disinfection and antibacterial purification requirements.



Household Water Purifiers



Commercial Water Systems



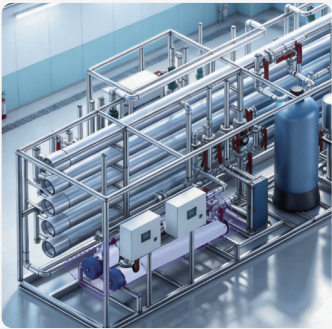
Aquaculture & Irrigation Water



Food & Beverage Process Water



Medical Pure Water Units



Lab Ultrapure Water Systems



Dental Chair Unit Water Supply



Medical Diagnostic Systems

● KEY PRODUCT PARAMETERS

Model	MP-UVC-2LB	MP-UVC-4LB	MP-UVC-10LB	MP-UVC-24LB
MASSPHOTON STANDARD CONFIGURATION (30 mJ/cm ² at 95% UVT)	2 LPM (0.5 gpm) (0.1 m ³ /hr)	4 LPM (1.1 gpm) (0.2 m ³ /hr)	10 LPM (2.6 gpm) (0.6 m ³ /hr)	24 LPM (6.3 gpm) (1.4 m ³ /hr)
ALTERNATE CONFIGURATION (16 mJ/cm ² at 95% UVT)	3.8 LPM (0.9 gpm) (0.2 m ³ /hr)	7.5 LPM (2.1 gpm) (0.4 m ³ /hr)	18.8 LPM (4.9 gpm) (1.1 m ³ /hr)	45 LPM (11.8 gpm) (2.6 m ³ /hr)
ALTERNATE CONFIGURATION (40 mJ/cm ² at 95% UVT)	1.5 LPM (0.4 gpm) (0.1 m ³ /hr)	3 LPM (0.8 gpm) (0.2 m ³ /hr)	7.5 LPM (2 gpm) (0.5 m ³ /hr)	18 LPM (4.7 gpm) (1.1 m ³ /hr)
Operating Pressure	0.2 MPa (30 psi)	0.4 MPa (60 psi)	0.4 MPa (60 psi)	0.4 MPa (60 psi)
Connection Size	OD 8.5mm Barb connector	3/8" Quick Connect	G 1/2"	G 1/2"
UVC LED Wavelength	270 nm-280 nm	270 nm-280 nm	270 nm-280 nm	270 nm-280 nm
Electrical	DC 24V	DC 24V	DC 24 V	DC 24 V
UVC LED Lifetime	L70 > 15,000 hours			
Power	3 W	9 W	10 W	29 W
Disinfection Efficiency	≥99.999% or 5.0 Log Reduction (*)			
Exterior Material	Food-Grade Plastic	Anodized Aluminum	Anodized Aluminum	Anodized Aluminum
Operating Water Temperature	4°C to 60°C (39.2°F to 140°F)			
Product Dimensions	0.7*1.7*4.8 in (18*43*121 mm)	Φ1*5.1 in (Φ25.4*130 mm)	Φ1.4*7.3 in (Φ35*185 mm)	Φ1.4*11 in (Φ35*279 mm)

(*) The actual disinfection efficiency subjects to the water quality.

The above test results are based on the following test conditions with test strain of Escherichia coli (8099), with 5×10^4 to 5×10^5 CFU/mL dechlorinated sterile test water.

pH	UV transmittance	Turbidity	Temperature	TDS
7.5+/-0.5	98+/-2%	< 1.0 NTU	20±2.5°C (68+/-5 °F)	200 to 500 mg / L

● OPTIONAL EQUIPMENT MODULES

Smart Control Box



- **Real-time parameter monitoring:** UV output intensity, runtime, water temperature, flow rate, etc.
- **Multi-level alarms:** insufficient UV dosage, abnormal flow/humidity, overdue operation and other faults.

Water Flow Sensor



- UVC-LED disinfection activates automatically when flow reaches preset value.
- Instant start, energy saving and extended service life.

4-20 mA Module



- The device converts UV output into a 4-20mA signal for transmission to the control unit, enabling UV intensity evaluation and real-time monitoring.

UV Module App (Tuya™)



- Integrated WiFi monitoring solution compatible with WEB, Android and iOS platforms.
- Supports remote data management for single or multiple devices with simple configuration.