

ULTRAAQUA · DRINKING WATER UV DISINFECTION

SSV Drinking Water Series

Validated UV disinfection for drinking water, with electropolished stainless-steel reactors and SWIRLFLOW hydraulics.



Overview

The SSV series is designed for municipal and other drinking water supplies, where a UV system has to prove its performance. The series has been validated by biodosimetry testing to the Austrian standard ÖNORM M 5873-1 and is designed for a microbial reduction of more than 4-log.

Its patented SWIRLFLOW design guides the water through the reactor so that pathogens receive an even UV exposure, giving a hydraulic efficiency of 90% at all water qualities.

Ozone UV Solutions supplies SSV systems as an authorised ULTRAAQUA reseller and supports them locally: from sizing and installation through commissioning, servicing, lamps and spare parts.

Key features

- Validated by biodosimetry to ÖNORM M 5873-1 for drinking water disinfection
- Designed for more than 4-log microbial reduction
- Patented SWIRLFLOW hydraulics with 90% hydraulic efficiency
- Electropolished SS316L reactor, design pressure 10 bar [16 bar]
- ULTRATHERM 220 W or 350 W amalgam lamps with a rated life of 16,000 hours and ULTRADOSE dose pacing (50–100%)
- Automatic ULTRAWIPER™ cleaning and Siemens PLC with 7" ULTRATOUCH touchscreen on MR3-220 SSV and larger

Design and operation

Hydraulics and dose

SWIRLFLOW hydraulics and CFD-optimised lamp positions give an even dose across the chamber. The electropolished inner surface reflects UV light back into the water, improving efficiency by up to 30% in water of high UV transmittance. ULTRADOSE pacing adjusts lamp power between 50% and 100% to hold the target dose.

Lamps and cleaning

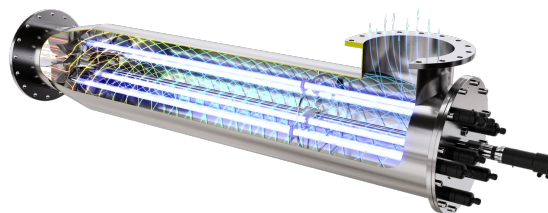
ULTRATHERM amalgam lamps have a rated life of 16,000 hours. The automatic ULTRAWIPER™ keeps both the quartz sleeves and the UV sensor clean and prevents heavy fouling, so disinfection stays stable.

Controls

Siemens PLC (Allen-Bradley optional) with 7" ULTRATOUCH HMI, alarm, event and data logs (UV dose, UV intensity, flow), Modbus TCP/IP or PROFINET and 4–20 mA signals for flow, dose and intensity, with optional UVT input. The single-lamp MR1-220 SSV uses a microprocessor controller with 4-line LCD and Modbus RTU.

Maintenance

Single-ended lamp and wiper access and interlocking lamp connectors allow servicing without special tools. Reactors install horizontally or vertically and have sampling ports for water quality checks.



Typical applications

- Municipal drinking water treatment
- Other drinking water supplies that require a UV system validated to ÖNORM M 5873-1

Supplied and supported by Ozone UV Solutions

System selection and UV dose sizing · Installation and commissioning · PLC/SCADA integration · Planned servicing and lamp changes · Spare parts and consumables · 24/7 technical support line **+61 422 081 913**

Model selection

The right model depends on flow rate, UV transmittance (UVT) of the water and the required dose or log reduction. Send us these figures and we will confirm the model and configuration.

SSV models

Model	UV lamps	Lamp power	Connection	Power	Reactor dry weight	Reactor volume	Controller
MR1-220 SSV	1	220 W	DN100 (ANSI 4)	0.2 kW	31 kg	40 L	Microprocessor, LCD
MR3-220 SSV	3	220 W	DN100 (ANSI 4)	0.7 kW	50 kg	77 L	Siemens PLC, 7" HMI
MR4-220 SSV	4	220 W	DN150 (ANSI 6)	1.0 kW	69 kg	114 L	Siemens PLC, 7" HMI
MR6-220 SSV	6	220 W	DN250 (ANSI 10)	1.4 kW	102 kg	165 L	Siemens PLC, 7" HMI
MR6-350 SSV	6	350 W	DN300 (ANSI 12)	2.3 kW	160 kg	290 L	Siemens PLC, 7" HMI
MR8-350 SSV	8	350 W	DN350 (ANSI 14)	3.0 kW	200 kg	368 L	Siemens PLC, 7" HMI
MR12-350 SSV	12	350 W	DN400 (ANSI 16)	4.5 kW	259 kg	460 L	Siemens PLC, 7" HMI

Control cabinet by model

Model	Cabinet size (H×W×D)	Cabinet weight	Cabinet material	Power supply
MR1-220 SSV	600×400×210 mm	10 kg	GFRP [SS304 / SS316]	1 × 230 VAC
MR3-220 SSV	800×800×300 mm	46 kg	SS304 [SS316, painted steel, GFRP]	1 × 230 VAC
MR4-220 SSV	800×800×300 mm	46 kg	SS304 [SS316, painted steel, GFRP]	1 × 230 VAC
MR6-220 SSV	800×800×300 mm	49 kg	SS304 [SS316, painted steel, GFRP]	1 × 230 VAC
MR6-350 SSV	800×800×300 mm	52 kg	SS304 [SS316, painted steel, GFRP]	1 × 230 VAC
MR8-350 SSV	1000×800×300 mm	70 kg	SS304 [SS316, painted steel, GFRP]	3 × 400 VAC
MR12-350 SSV	1000×800×300 mm	76 kg	SS304 [SS316, painted steel, GFRP]	3 × 400 VAC

Options are shown in [square brackets]. Connections: EN 1092 Type 01A PN10 (ANSI Class 150), optional PN16 (ANSI Class 300).

Common specifications

UV LAMPS & MONITORING	
Lamp type	ULTRATHERM low-pressure high-output (LPHO) amalgam, 220 W or 350 W
Rated lamp life	16,000 hours
UV monitoring	UV intensity sensor, ÖNORM M5873 certified, SS316L
Power control	ULTRADOSE dose pacing, 50–100%
Approvals	ÖNORM M 5873-1, CE [UL]
UV CHAMBER	
Chamber material	SS316L / 1.4404 [Super Duplex], electropolished inside, glass-blasted outside
Design pressure	10 bar [16 bar]
Quartz sleeves	High-purity fused quartz, transmittance > 95%
Cleaning	ULTRAWIPER™ automatic mechanical wiper with PTFE/fibre rings (electric drive) – not fitted on MR1-220 SSV
Access / installation	Single-ended lamp and wiper access · horizontal or vertical installation · free-standing [horizontal SS316 stand]
Other	PT100 temperature probe · 1" vent and drain ports, ¼" sampling ports · IP65 · minor wetted parts FDA-approved PTFE, PVDF, Viton
CONTROL CABINET	
Control logic / HMI	MR1-220 SSV: microprocessor with 4-line LCD · other models: Siemens PLC [Allen-Bradley] with 7" ULTRATOUCH touchscreen
Communication	MR1-220 SSV: Modbus RTU · other models: Modbus TCP/IP, PROFINET
Analogue I/O (4–20 mA)	MR1-220 SSV: flow input, UV irradiance output · other models: flow input, UV dose output, UV intensity output [UVT input]
Logging	MR1-220 SSV: alarms · other models: alarms, events and data (UV dose, UV intensity, flow)
Installation & cooling	Wall-mounted, ambient 0–40 °C, non-condensing · MR1-220 SSV: IP65, passive cooling [AC / heat exchanger] · other models: IP54 [IP65], fan with filter [AC / heat exchanger]
Power supply	1 × 230 VAC ±10% +N+PE 50/60 Hz (up to MR6-350 SSV) · 3 × 400 VAC ±10% +N+PE 50/60 Hz (MR8-350 and MR12-350 SSV)
Cable length	4 m standard [up to 30 m]

Request sizing or a quote

Send us your flow rate, UV transmittance if known, and the required dose or log reduction. We will recommend the model and configuration and quote supply, installation and ongoing service.

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Specifications subject to change without notice.