

ULTRAAQUA · GENERAL WATER UV DISINFECTION

MONORAY™ Series

Stainless-steel UV systems for general disinfection of industrial and municipal water, from single-lamp units to 20-lamp reactors.



Overview

The MONORAY™ series is the general-purpose range of closed-vessel UV systems, designed for industrial and municipal water wherever chemical-free disinfection is required. Reactors and control cabinets come in several configurations, so a system can be matched to the flow, the water quality and the space available.

The electropolished stainless-steel reactor reflects UV light back into the water, which improves efficiency by up to 30% in water of high UV transmittance.

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

Key features

- Electropolished SS316L reactor [Super Duplex], design pressure 10 bar
- ULTRATHERM low-pressure high-output amalgam lamps: 75 W with a rated life of 9,000 hours, or 220 W and 350 W with a rated life of 16,000 hours
- Sizes from 1 to 20 lamps with 1½" BSP or flanged DN80 to DN300 connections
- UV intensity monitoring and 50–100% variable lamp power on all models except single-lamp STD units
- Optional automatic ULTRAWIPER™ quartz sleeve cleaning on 220 W and 350 W models
- PLC with ULTRATOUCH touchscreen and Modbus TCP/IP or PROFINET on models with three or more lamps

Design and operation

Reactor and hydraulics

The SS316L chamber is electropolished inside and glass-blasted outside, with Super Duplex as an option. Design pressure is 10 bar, with 16 bar available on 220 W and 350 W models. Reactors install horizontally or vertically and are offered with several flange sizes.

Lamps and dose

ULTRATHERM amalgam lamps are built for energy efficiency and robustness. On PLC models, ULTRADOSE automatic dose pacing lowers lamp power whenever conditions allow while holding a stable dose, which avoids overdosing and excess temperature.

Controls

Single-lamp STD units have status LEDs and an hour counter. ADV units add a microprocessor with LCD, UV intensity monitoring, variable power and Modbus RTU. From three lamps upward a PLC with ULTRATOUCH touchscreen adds dose pacing, full data logging and SCADA integration.

Maintenance

Single-ended lamp and wiper access and interlocking electrical and mechanical lamp connectors allow quick and safe servicing without special tools.



Typical applications

- Drinking water and general municipal disinfection
- Food and beverage, and pharmaceutical process water
- Recirculating aquaculture systems (RAS), aquariums and zoos
- Stormwater overflow (CSO) treatment

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 dose required for the target pathogens. Send us these figures and we will confirm the model and configuration.

75 W lamp model

Model	UV lamps	Connection	Power	Reactor dry weight	Reactor volume	Controller
MR1-75SS STD	1	1½" BSP	0.08 kW	7 kg	6 L	STD – status LEDs
MR1-75SS ADV	1	1½" BSP	0.08 kW	7 kg	6 L	ADV – microprocessor, LCD

220 W lamp models

Model	UV lamps	Connection	Power	Reactor dry weight	Reactor volume	Controller
MR1-220SS STD	1	DN80 (ANSI 3)	0.2 kW	23 kg	22 L	STD – status LEDs
MR1-220SS ADV	1	DN80 (ANSI 3)	0.2 kW	23 kg	22 L	ADV – microprocessor, LCD
MR3-220SS	3	DN150 (ANSI 6)	0.7 kW	38 kg	42 L	PLC – ULTRATOUCH
MR4-220SS	4	DN150 (ANSI 6)	1.0 kW	45 kg	64 L	PLC – ULTRATOUCH
MR6-220SS	6	DN200 (ANSI 8)	1.4 kW	61 kg	93 L	PLC – ULTRATOUCH
MR8-220SS	8	DN200 (ANSI 8)	1.9 kW	78 kg	163 L	PLC – ULTRATOUCH

350 W lamp models

Model	UV lamps	Connection	Power	Reactor dry weight	Reactor volume	Controller
MR1-350SS STD	1	DN100 (ANSI 4)	0.4 kW	28 kg	32 L	STD – status LEDs
MR1-350SS ADV	1	DN100 (ANSI 4)	0.4 kW	28 kg	32 L	ADV – microprocessor, LCD
MR3-350SS	3	DN150 (ANSI 6)	1.1 kW	45 kg	58 L	PLC – ULTRATOUCH
MR4-350SS	4	DN150 (ANSI 6)	1.5 kW	53 kg	89 L	PLC – ULTRATOUCH
MR6-350SS	6	DN200 (ANSI 8)	2.3 kW	70 kg	128 L	PLC – ULTRATOUCH
MR8-350SS	8	DN250 (ANSI 10)	3.0 kW	112 kg	230 L	PLC – ULTRATOUCH
MR12-350SS	12	DN250 (ANSI 10)	4.5 kW	143 kg	296 L	PLC – ULTRATOUCH
MR16-350SS	16	DN300 (ANSI 12)	6.0 kW	179 kg	356 L	PLC – ULTRATOUCH
MR18-350SS	18	DN300 (ANSI 12)	6.8 kW	181 kg	356 L	PLC – ULTRATOUCH
MR20-350SS	20	DN300 (ANSI 12)	7.5 kW	183 kg	356 L	PLC – ULTRATOUCH

STD / ADV: single-lamp models with standard or advanced controller; PLC: models with three or more lamps (see common specifications). Options are shown in [square brackets].

Common specifications

UV LAMPS & MONITORING	
Lamp type	ULTRATHERM low-pressure high-output (LPHO) amalgam, 75 W, 220 W or 350 W
Rated lamp life	9,000 hours (75 W) · 16,000 hours (220 W and 350 W)
UV monitoring	UV intensity sensor, SS316L (all models except single-lamp STD); ÖNORM M5873 certified on 220 W and 350 W models
Power control	ADV: variable power 50–100% · PLC models: ULTRADOSE automatic dose pacing 50–100%
Approvals	CE [UL / cUL]
UV CHAMBER	
Chamber material	SS316L / 1.4404 [Super Duplex], electropolished inside, glass-blasted outside
Connections	75 W: 1½" BSP, PN10 (ANSI Class 150) · 220 W and 350 W: EN 1092 Type 01A PN10 (ANSI Class 150) [PN16 (ANSI Class 300)]
Design pressure	10 bar · 220 W and 350 W models [16 bar]
Quartz sleeves	High-purity fused quartz, transmittance > 95%
Cleaning	[ULTRAWIPER™ automatic mechanical wiper with PTFE/fibre rings (electric drive)] on 220 W and 350 W models, except single-lamp STD units; not available on 75 W models
Access / installation	Single-ended lamp and wiper access · horizontal or vertical installation · free-standing [horizontal stand: Duplex for 220 W, SS316 for 350 W models]
Vent & drain ports	None on 75 W models · ½" (220 W models and 350 W models up to MR8) · 1" (MR12-350SS and above)
Other	PT100 temperature probe · IP65 · minor wetted parts FDA-approved PTFE, PVDF, Viton
CONTROL CABINET	
Control logic / HMI	STD: status LED indicators and hour counter · ADV: microprocessor with 4-line LCD · PLC models: PLC with 4" or 7" ULTRATOUCH touchscreen
Communication	ADV: Modbus RTU · PLC models: Modbus TCP/IP, PROFINET [I-Device]
Analogue I/O (4–20 mA)	ADV: flow input, UV irradiance output · PLC models: flow input, UV dose output, UV intensity output [UVT input]
Logging and alarms	ADV: alarm log, UV intensity pre-alarm and alarm · PLC models: alarm, event and data log (UV dose, UV intensity, flow), actual and target UV dose on HMI, UV dose pre-alarm and alarm
External wiring	PLC models: remote ON/OFF, safety ON/OFF, system status, alarm
Cabinet	GFRP [SS304 / SS316] · wall-mounted, ambient 0–40 °C · single-lamp models: IP65, passive cooling [fan / AC / heat exchanger] · PLC models: IP54 [IP65], fan with filter [AC / heat exchanger]
Power supply	1 × 230 VAC ±10% +N+PE 50/60 Hz · MR8-350SS and above: 3 × 400 VAC ±10% +N+PE 50/60 Hz
Cable length	4 m standard [up to 30 m]

Request sizing or a quote

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

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Specifications subject to change without notice.