

ULTRAAQUA · UV DISINFECTION FOR CORROSIVE AND SALINE WATER

NON-CORROSIVE PP Series

Closed-vessel UV systems with non-metallic reactors for seawater, warm salt water and other corrosive fluids. Polypropylene (PP) reactors as standard, high-density polyethylene (PEHD) as a material option.



Overview

The NON-CORROSIVE PP series uses a reactor made from UV-stabilised polypropylene in place of a stainless-steel chamber. The material withstands warm salt water and other corrosive media and copes well with temperature and pressure, which makes the series a good fit for marine aquaculture, aquariums and industrial water where a steel reactor would corrode. The reactors are compact and light enough for wall or floor mounting.

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

Key features

- UV-stabilised polypropylene reactor for corrosive and saline water, with a PEHD reactor available as an option
- ULTRATHERM low-pressure high-output amalgam lamps, 220 W or 350 W, with a rated life of 16,000 hours
- Sizes from 1 to 20 lamps with flanged connections from DN80 to DN300
- Non-corrosive PTFE UV intensity sensor and 50–100% variable lamp power on all models except single-lamp STD units
- Optional automatic ULTRAWIPER™ cleaning of the quartz sleeves and UV sensor
- PLC control with ULTRATOUCH touchscreen and Modbus TCP/IP or PROFINET on models with three or more lamps

Design and operation

Reactor and hydraulics

Lamp positions are optimised by CFD modelling. Reactors install horizontally or vertically, free-standing or on an optional horizontal SS316 stand, with a choice of flange sizes. Design pressure is 6 bar on the single-lamp models and falls to 2 bar on the largest sizes; higher ratings are available on request.

Lamps and cleaning

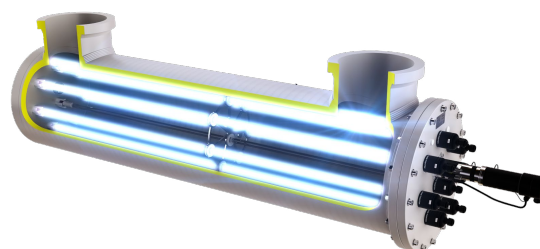
ULTRATHERM amalgam lamps are built for energy efficiency and robustness and have a rated life of 16,000 hours. The optional ULTRAWIPER™ keeps the quartz sleeves and UV sensor clean automatically, using PTFE/steel fibre rings with an electric drive.

Controls

Single-lamp STD units have a basic controller with status LEDs. Single-lamp ADV units add a microprocessor with LCD, UV intensity monitoring, variable power and Modbus RTU. From three lamps upward a PLC with 4" or 7" ULTRATOUCH touchscreen adds automatic ULTRADOSE dose pacing, alarm, event and data logging and SCADA integration.

Maintenance

Single-ended service and interlocking electrical and mechanical lamp connectors make lamp and sleeve changes quick and safe, with no special tools.



PEHD reactor variant

PEHD reactor variant

The same range can be supplied with a reactor made from high-density polyethylene (PEHD). PEHD tolerates temperature swings and resists pressure, salts, acids and oils, which makes it the material of choice for highly corrosive industrial and aquaculture duties. It is also suited to breaking down residual ozone in seawater that has been treated with ozone. PEHD reactors can be fitted with a non-corrosive PTFE or a corrosion-resistant ÖNORM M 5873-1 certified UV sensor, together with the ULTRAWIPER™, which allows routine maintenance checks to be limited to once a year.

Typical applications

- Recirculating aquaculture systems (RAS), shrimp and prawn farming
- Public aquariums and zoo life-support systems
- Food and beverage, and oil and gas applications
- Removal of residual ozone from ozonated seawater (PEHD reactors)

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, reactor material and configuration.

220 W lamp models

Model	UV lamps	Connection	Design pressure	Power	Reactor dry weight	Reactor volume	Controller
MR1-220PP STD	1	DN80 (ANSI 3)	6 bar	0.2 kW	8 kg	20 L	STD – status LEDs
MR1-220PP ADV	1	DN80 (ANSI 3)	6 bar	0.2 kW	8 kg	20 L	ADV – microprocessor, LCD
MR3-220PP	3	DN150 (ANSI 6)	5 bar	0.7 kW	22 kg	55 L	PLC – ULTRATOUCH
MR4-220PP	4	DN150 (ANSI 6)	3 bar	1.0 kW	31 kg	77 L	PLC – ULTRATOUCH
MR6-220PP	6	DN150 (ANSI 6)	2 bar	1.4 kW	39 kg	97 L	PLC – ULTRATOUCH
MR8-220PP	8	DN200 (ANSI 8)	2 bar	1.9 kW	47 kg	167 L	PLC – ULTRATOUCH

350 W lamp models

Model	UV lamps	Connection	Design pressure	Power	Reactor dry weight	Reactor volume	Controller
MR1-350PP STD	1	DN100 (ANSI 4)	6 bar	0.4 kW	12 kg	30 L	STD – status LEDs
MR1-350PP ADV	1	DN100 (ANSI 4)	6 bar	0.4 kW	12 kg	30 L	ADV – microprocessor, LCD
MR3-350PP	3	DN150 (ANSI 6)	5 bar	1.1 kW	30 kg	73 L	PLC – ULTRATOUCH
MR4-350PP	4	DN150 (ANSI 6)	3 bar	1.5 kW	43 kg	106 L	PLC – ULTRATOUCH
MR6-350PP	6	DN200 (ANSI 8)	2 bar	2.3 kW	60 kg	139 L	PLC – ULTRATOUCH
MR8-350PP	8	DN250 (ANSI 10)	2 bar	3.0 kW	80 kg	226 L	PLC – ULTRATOUCH
MR12-350PP	12	DN250 (ANSI 10)	2 bar	4.5 kW	110 kg	274 L	PLC – ULTRATOUCH
MR16-350PP	16	DN300 (ANSI 12)	2 bar	6.0 kW	126 kg	291 L	PLC – ULTRATOUCH
MR18-350PP	18	DN300 (ANSI 12)	2 bar	6.8 kW	130 kg	287 L	PLC – ULTRATOUCH
MR20-350PP	20	DN300 (ANSI 12)	2 bar	7.5 kW	134 kg	283 L	PLC – ULTRATOUCH

STD / ADV: single-lamp models with standard or advanced controller; PLC: models with three or more lamps (see common specifications). Design pressure: higher ratings on request. Weights and volumes refer to PP reactors; for PEHD reactors they are confirmed with the quotation. Options are shown in [square brackets].

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, non-corrosive PTFE (all models except single-lamp STD)
Power control	ADV: variable power 50–100% · PLC models: ULTRADOSE automatic dose pacing 50–100%
Approvals	CE [UL / cUL]
UV CHAMBER	
Chamber material	Non-corrosive UV-stabilised polypropylene (PP) [PEHD], machined finish
Connection type	Flanged, PN10 (ANSI Class 150)
Quartz sleeves	High-purity fused quartz, transmittance > 92%
Cleaning	[ULTRAWIPER™ automatic mechanical wiper with PTFE/steel fibre rings (electric drive)] – not available on single-lamp STD models
Access / installation	Single-ended service · horizontal or vertical installation · free-standing [horizontal SS316 stand] · IP65 / NEMA 4X
Temperature probe	PTC sensor (single-lamp models) · PT100 (three lamps and above)
Vent & drain ports	½" (up to 4 lamps) · 1" (6 lamps and above)
CONTROL CABINET	
Control logic / HMI	STD: status LED indicators · ADV: microprocessor with 4-line LCD · PLC models: PLC with 4" ULTRATOUCH touchscreen [7" ULTRATOUCH]
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	Polycarbonate (smaller models) or non-corrosive GFRP (larger models) [SS304 / SS316] · wall-mounted · IP65 with passive cooling [fan / AC / heat exchanger]; MR8-350PP and above: IP54 with heat exchanger
Power supply	1 × 200–240 VAC ±10% +N+PE 50/60 Hz · MR8-350PP 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, water source (fresh, brackish or seawater), water temperature, UV transmittance if known, and the target pathogens or required dose. We will recommend the model, reactor material and configuration and quote supply, installation and ongoing service.

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Specifications subject to change without notice.