

BIO SEA

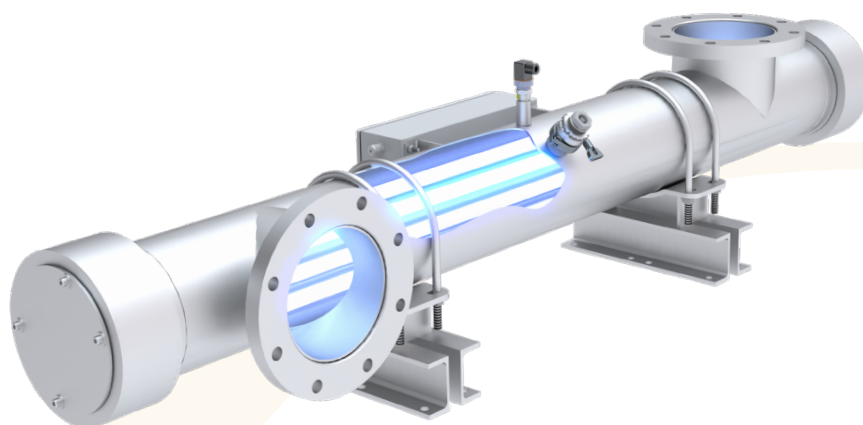
by BIO UV
Group



BALLAST WATER TREATMENT **M** RANGE

From 190 to 2100 m³/h

BIO-UV Group, created 20 years ago, is a leading European supplier of UV water treatment solutions. The Group designs, manufactures and markets UV-C ballast water treatment systems, BIO-SEA®.



BIO-SEA M UV REACTOR

BENEFITS

- Automatic UV dosage controls depending on water quality
- Tested in low UV water transmittance conditions with best results
- Safe: chemical free, zero by-products, zero active substances
- Not impacted by water temperature or salinity
- Autonomous operation, user friendly interface
- First Class marine components
- Compact unit with a small space foot print
- Easy to install, operate and maintain
- Cost efficient solution, low OPEX

CERTIFIED SALES AND SERVICE PARTNERS FOR TURNKEY SOLUTIONS

From a simple onboard visit, or a 3D laser scanning survey, to a high-level global turnkey package, BIO-SEA works with a **worldwide service network** of certified partners and suppliers for the whole range of BIO-SEA BWTS.



1st
STEP

MECHANICAL FILTRATION

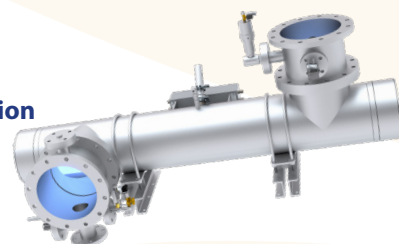
- **20µm screen** to retain suspended solids and zooplankton
- **Scaled to size** depending on the flow rate to treat
- **Automatic backwash** with standard suction pump delivered with the system
- **No disruption of the filtration process** during the backwash cycle and no significant variation of the treated water flow rate



2nd
STEP

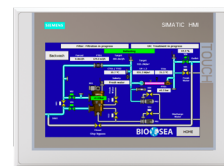
UV DISINFECTION

- **254 SMO reactor designed** with a reduced number of polychromatic, medium pressure, **high intensity UV lamps for optimum cost and treatment results**
- High-quality quartz sleeve protecting the UV lamp
- Optimized design by CFD (Computational Fluid Dynamic) taking into account water quality (UV transmittance) and fluid speeds, **allowing for easier cleaning and maintenance**
- Lamps driven by electronic ballast and UV sensor under monitoring allowing for precise management of the UV lamp power to **optimize its intensity, reduce the power consumption** and prolong its life



MONITORING AND CONTROL

- **Large touch screen interface** for easy friendly use, control and visualization
- **Standard fully automated operating modes** for ballasting, de-ballasting, cleaning and stripping
- Monitoring through sensors and PLC: UV and temperature sensors, flow meter, pressure transmitters, automatic valves
- **Recording of operations** and alarms covering 24 months, automatic generation of PDF reports
- Bus communication for remote control, integration to vessel automation system and control command, GPS connection



Available options: remote control panels (9" or 15" auxiliary touch screen), by-pass valves, BIO-SEA Clean (automatic quartz sleeve cleaning system)

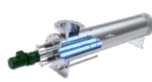
SPECIFICATIONS

Treatment Capacity	from 190 to 2100 m ³ /h
Power Supply	400 – 440V; 50-60 Hz; 3-phases
Power Consumption per UV lamp	12 kW - 22 kW
UV lamp lifetime	5000 hours
Environmental Operating Conditions	T°= 0°C - 55°C; H% ≤ 95
Global Head Loss	< 0,55 bars
Operating Pressure	1,5 - 10 bars

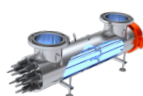
Other onboard BIO-UV Group environmental UV treatment solutions



Reuse



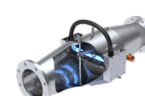
Drinking Water



Grey Waters



Legionella



Pools & Spas

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