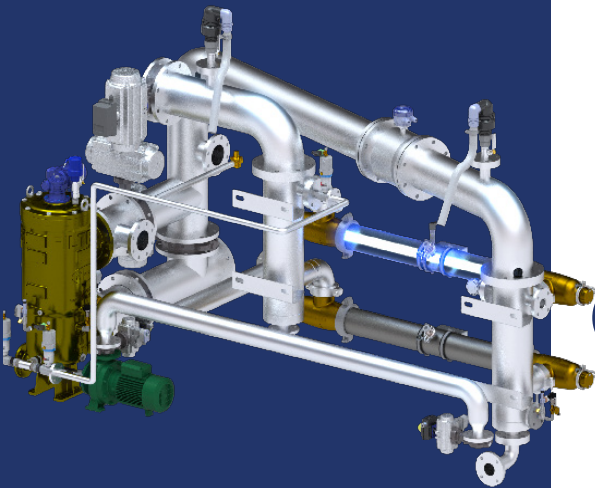


Ballast Water Treatment

B Range

BIO-SEA® B
From 135 to 450 m³/h



Other environmentally friendly solutions for water treatment onboard vessels:

- Drinking water
- Grey waters
- Legionella
- Pools & spas

BIO-UV Group, has a 20+ years experience in designing and manufacturing water desinfection systems using chemical-free technologies (UV, Ozone, Salt Electrolysis) for various applications including BIO-SEA® ballast water treatment system.



Benefits

- UV dose automatic regulation depending on water quality
- Tested in low UV water transmittance conditions with best results
- Chemical free, zero by-product, zero active substances
- Not impacted by water temperature, neither by salinity
- Automatic operation, easy-to-use interface
- First Class marine components
- Safe and easy to install, operate and maintain
- Cost-efficient solution, low OPEX

Certified sales & service partners for turnkey solutions

From a simple onboard visit, or a 3D laser scanning survey, to a global turnkey package, BIO-SEA cooperates closely with a worldwide service network of certified partners and suppliers for services ranging from designing, to onboard installation and commissioning or annual check.

Specifications	
Treatment capacity	From 50 to 2000 m ³ /h
Power supply	400-440 V ; 50-60 Hz ; 3-phases
Power consumption per UV reactor	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



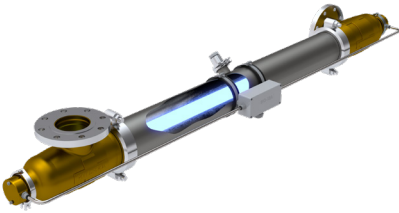
BIO-SEA® B



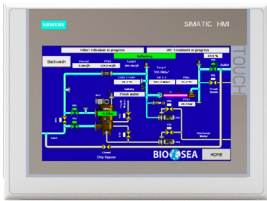
Mechanical filtration

- 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
- Two types of filters (Hydac or Filtrex models) to fit all ships requirements

UV disinfection



- Titanium reactor designed with a single polychromatic, medium pressure, high intensity UV lamp for optimum cost and treatment results
- UV lamp protected by high-quality quartz sleeve
- Design optimized by CFD (Computational Fluid Dynamic) taking into account water quality (UV transmittance) and fluid speeds, allowing for easier cleaning and maintenance
- Lamp driven by electronic ballast and UV sensor under monitoring allowing precise management of the UV lamp power to optimize its intensity, reduce the power consumption and extend its life



Monitoring & control

- Touchscreen interface
- Fully automated operating modes for ballasting, de-ballasting, cleaning and stripping
- Sensors and PLC monitoring: UV and temperature sensors, flow meter, pressure transmitters, automatic valves
- 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 (7" or 15" auxiliary touch screen), AMS integration (RS 485 communication cable), BIO-SEA Clean (automatic quartz sleeve cleaning system)



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