

BIO-SEA by BIO-UV Group designed the **smallest ever ballast water treatment system on the market with all in one equipment.**

BIO-SEA L «Easy-to-Fit» Concept Dismountable skid platform for an easier integration



SKID



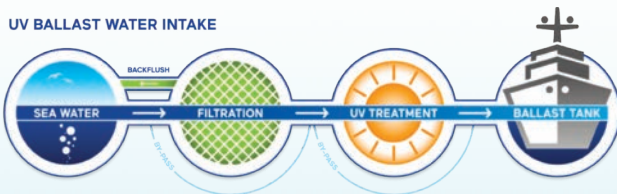
SPLIT SKID



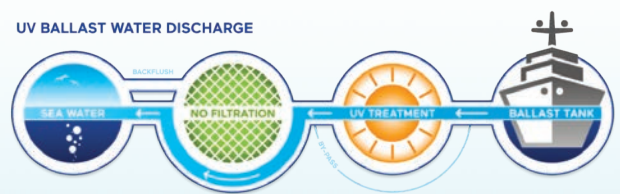
MODULAR

Ballasting / De-ballasting process

UV BALLAST WATER INTAKE



UV BALLAST WATER DISCHARGE



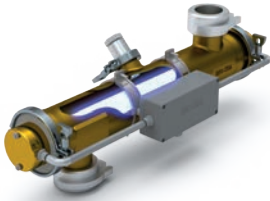
BENEFITS

- Most compact system on the market: 1.36m² footprint, no additional cabinet needed
- High UV dose
- Tested in low UV water transmittance conditions with best results
- Safe: chemical free, zero by-product, zero active substances
- Not impacted by water temperature, neither by salinity
- Easy to install, operate and maintain
- Automatic operation, easy-to-use interface
- First Class marine components from reliable European suppliers
- Cost efficient solution, low OPEX
- Available in flexible and scalable skid design, and loose components versions to fit in all ships environment



1ST STEP : MECHANICAL FILTRATION

- **20µm screen** to retain suspended solids and zooplankton
- **Sized to scale** depending on the flow rate to treat
- **Automatic backwash included**
- **Additional suction pump** as standard to allow a complete and performing backwash
- **No disruption of the filtration process** during the backwash cycle and no significant variation of the treated flow rate



2ND STEP : UV DISINFECTION

- **Bronze reactor** equipped with a single polychromatic, medium pressure, **high intensity UV lamp for optimum treatment results**
- High-quality quartz sleeve protecting the UV lamp
- Reactor designed with **only one lamp per reactor** minimizing the total number of lamps per system, resulting in lower operational costs
- Optimized design by CFD (Computational Fluid Dynamic) taking into account water quality (UV transmittance) and fluid speed, **allowing for easier cleaning and maintenance**



MONITORING AND CONTROL

- **Standard fully automated operating modes** for ballasting, de-ballasting, cleaning and stripping
- Monitoring through sensors and PLC: UV and temperature sensors, flow meter, differential pressure switch, automatic valves
- **Touch screen interface** for easy friendly use, control and visualization
- **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

Options for an ultimate experience: remote control panels (7" or 15" auxiliary touch screen), RS 485 communication cabinet, BIO SEA Clean (quartz sleeve cleaning system)

SPECIFICATIONS	
Treatment Capacity	from 13 to 120 m ³ /h
Power Supply	400 – 440V; 50-60 Hz; 3-phases
Power Consumption	6 kW per reactor
UV lamp lifetime	5000 hours
Environmental Operating Conditions	IP54; T°= 0°C - 55°C; H% ≤ 95
Global Head Loss	< 0,55 bars
Operating Pressure	1,5 - 10 bars

Turnkey worldwide certified sales and services partners

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

Other onboard BIO-UV Group environmental UV treatment solutions



Ballast Water



Reuse



Drinking Water



Grey Waters



Legionella



Pools & Spas

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