

# BIO SEA

by BIO UV  
Group

IMO & USCG  
TYPE APPROVED

## BALLAST WATER TREATMENT LOW FLOW **L** RANGE

**From 13 to 120 m<sup>3</sup>/h**

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

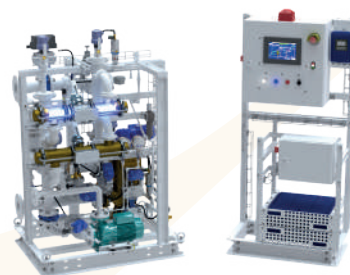
BIO-SEA L «Easy-to-Fit» concept

**The smallest ever ballast water treatment system on the market with all in one equipment.**

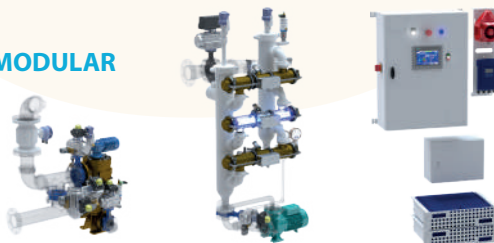
SKID



SPLIT  
SKID



MODULAR



Available in  
containerized version

### BENEFITS

- Most compact system on the market: 1.36m<sup>2</sup> 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
- Automatic operation, easy-to-use interface
- First Class marine components
- Available in flexible and scalable skid design, and loose components versions to fit in all ships environment
- 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.



1<sup>st</sup>  
STEP

## MECHANICAL FILTRATION

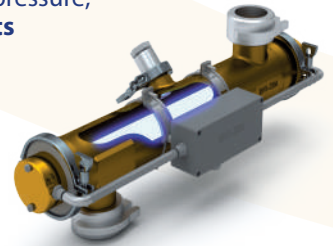
- **20µm screen** to retain suspended solids and zooplankton
- **Sized to scale** depending on the flow rate to treat
- **Automatic backwash** with standard suction pump delivered with the system
- **No disruption of the filtration process** during the backwash cycle and no significant variation of the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



2<sup>nd</sup>  
STEP

## UV DISINFECTION

- **Bronze reactor designed** with a single polychromatic, medium pressure, **high intensity UV lamp 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 speed, **allowing for easier cleaning and maintenance**



## MONITORING AND CONTROL

- **Easy to use thanks** to its touch screen interface
- **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
- **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



*Option for an ultimate experience: remote control panels (7" or 15" auxiliary touch screen), AMS integration (RS 485 communication cabine), BIO-SEA Clean (automatic quartz sleeve cleaning system)*

## SPECIFICATIONS

Treatment Capacity	from 13 to 120 m³/h
Power Supply	400 – 440V; 50-60 Hz; 3-phases
Power Consumption per UV reactor	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

## Other onboard BIO-UV Group environmental UV treatment solutions



Surface  
treatment



Reuse



Drinking  
Water



Grey  
Waters



Legionella



Pools  
& Spas

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