



Alfa Laval PureBallast 3 Compact

Skid-mounted ballast water treatment system with minimal footprint

Alfa Laval PureBallast 3 Compact is a third-generation PureBallast system designed for simple, plug-and-play installation. Like other PureBallast 3 systems, it is fully automated and uses an enhanced form of UV treatment for the biological disinfection of ballast water. (See the PureBallast 3 Compact Flex or PureBallast 3 Std leaflets for details.)

The system is delivered as a compact module, which comes ready-assembled and mounted on a skid with all necessary equipment and prefabricated pipework. The module is easy to connect and is pre-tested before delivery.

Application

Type approved by IMO and the U.S. Coast Guard (USCG), PureBallast 3 Compact is designed for ballast water treatment in all water salinities: fresh, brackish and marine. Even in low-clarity water, it provides unmatched biological disinfection performance. When operating in IMO-regulated waters, full-flow treatment is possible where the UV transmittance is as low as 42 %.

PureBallast 3 Compact is specifically designed for compact installation and can be configured for flows of 32–300 m³/h.

Type approvals

- **IMO**
PureBallast 3 Compact systems have IMO revised G8 type approval, which means systems purchased today can be installed after the stricter IMO guidelines take effect on 28 October 2020. When operating in IMO-regulated waters, PureBallast 3 systems make maximum use of their power management and other capabilities.
- **USCG**
To address differing needs in United States waters, there are standard and high-power versions of PureBallast 3 Compact under USCG type approval. Standard systems, which utilize flow control in waters with low UV transmittance, are configured as for IMO-regulated waters and provide the option of minimized holding time when operating in USCG-regulated waters. The minimized holding time is just 2.5 hours and is only needed when crossing between Captain of the Port Zones. High-power systems are configured to allow full flow in the vast majority of United States waters.



Benefits*

- Minimal system footprint
- Simple installation as a plug-and-play skid
- Superior performance in all water salinities: fresh, brackish, marine
- Excellent performance in low-clarity waters
- Effective power management

* *Additional benefits and details can be found in the PureBallast 3 Compact Flex or PureBallast 3 product leaflets*

Skid components

The following components are incorporated into the PureBallast 3 Compact skid:

- **Filter**
The filter is used during ballasting operations to block the intake of larger organisms and reduce sediment in the ballast water tanks.
- **Reactor**
Built with long-lasting super-austenitic stainless steel, the reactor comprises the enhanced UV treatment stage responsible for biological disinfection.
- **Compact Cleaning-In-Place (CIP) unit**
UV lamp performance is safeguarded by an automatic CIP cycle that removes UV-impairing fouling and scaling.

Electrical cabinet

In PureBallast 3 Compact, the lamp drive cabinet and control cabinet are integrated into a single electrical cabinet. This cabinet provides power to the UV lamps and features a 7" display with a graphical user interface. The control system can be integrated with onboard automation systems via Modbus, allowing access to all functions through the vessel's Integrated Ship Control System.

Ex placement

PureBallast 3 Compact is configured for installation within the safe zone. For placement in the hazardous zone, a PureBallast 3 Ex system is required (see separate leaflet).

Capacity range (flow in m³/h)

PureBallast 3 Compact is optimized for the smallest possible footprint in relation to the capacity of the ballast water pumps.

PureBallast 3 Compact	(32)*	85	135	170	250	300
PureBallast 3 Compact USCG HP		85	150			

* PureBallast 3 Compact/85 system at reduced flow rate



Electrical cabinet

System for 300 m³/h (footprint 2.2 m²)

Technical data

PureBallast 3 Compact		PureBallast 3 Compact USCG HP
Power consumption, 32–170 m ³ /h	Optimal 11 kW (20 kW at full ramp-up*)	Power consumption, 85 m ³ /h
Power consumption, 250/300 m ³ /h	Optimal 17 kW (32 kW at full ramp-up*)	Power consumption, 150 m ³ /h

* Power consumption can be increased to handle low-clarity water with low UV transmittance.

Power supply: 400–440 VAC, 50/60 Hz

Working pressure: Max 6 bar (up to 10 bar optional)

Component dimensions

	PureBallast 3 Compact		PureBallast 3 Compact USCG HP
	Size (mm) (W × D × H)	Net/dry weight (kg)	
Skid, 32/85 m ³ /h	1312x680x1745	650/740	
Skid, 135/170 m ³ /h	1500x680x1912	785/905	Skid, 85 m ³ /h
Skid, 250/300 m ³ /h	1500 × 1200 × 2050	1320/1421	Skid, 150 m ³ /h
Electrical cabinet, 32–300 m ³ /h	954x520x1466	160	Electrical cabinet, 85/150 m ³ /h

Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com