



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	Optimarin AS
Address	Sjøveien 34, Sandnes, 4315, Norway
Type	Ballast Water Treatment Systems And Water Treatment Plants
Description	Optimarin Ballast System (OBS) using filtration and UV treatment on ballast water uptake and UV treatment only on ballast water discharge
Trade Name	Optimarin Ballast System (OBS), Optimarin Ballast System Ex (OBS Ex)
Application	For treatment of ship's ballast water
Specified Standard	Lloyd's Register Rules and Regulation for the Classification of Ships - Part 5 and Part 6, as applicable
Ratings	Optimarin Ballast System (OBS) 167/72BK3 3000/3100BK3 Optimarin Ballast System (OBS) 167/87FX2 3000/3000FX2 For full details refer to the Appendix 18-00075-03 to this Type Approval Certificate
Additional Tests	72 m3/hr to 3000 m3/hr depending on model type

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For full details refer to the Appendix 18-00075-03 to this Type Approval Certificate

UVI at 24% of system TRC = 150 W/m² UVI at 100% of system TRC = 400 W/m²
 Minimum flow rate = dependent on model type. Refer to the Appendix 18-00075-03
 Pressure = dependent on model type. Refer to the Appendix 18-00075-03

No other system design or operational limitations

For full details refer to the Appendix 18-00075-03 to this Type Approval Certificate

Other Conditions

The details of the intended installation location of the Optimarin Ballast System (OBS) onboard ships are to be suitable and in compliance with the requirements for said location.

The integration of the BWMS and its connection to the ship's Ballast Systems, including connection to the piping, mechanical and electrical components and control engineering aspects, are to be shown on the ship's plans and submitted for approval.

The Ex-certified equipment can be installed in a hazardous area provided that the Ex-certified equipment is appropriately rated as being suitable for use in that area. For Ex-certified equipment list refer to Bill of Material (BOM) for Optimarin Ballast System, revision 3 - dated 20 May 2022.

For max short-circuit current allowed, refer to Main fuse SCCR document.

The ballast water treatment system components outside the scope of supply from Optimarin Ballast System (OBS) are to be of type complying with Lloyd's Register Rules and submitted for consideration prior to installation.

Installation is to be carried out strictly in accordance with manufacturer's instruction. Manufacturer to verify the correct installation before commissioning.

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Installation survey and commissioning is to be conducted for each installation onboard ship in accordance IMO Res. MEPC.300(72) and Lloyd's Register specific survey requirements.

A copy of this Type Approval Certificate should be carried on board a vessel fitted with this ballast water management system at all times.

This Type Approval Certificate issued is based on the Type Approval Certificate TAP0000271 issued on behalf of the Norwegian Maritime Authority (NMA). A copy of this Type Approval Certificate should be carried on board a vessel fitted with this ballast water management system at all times.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document 18-00075-03 and its supplementary Type Approval Terms and Conditions form part of this Certificate.