



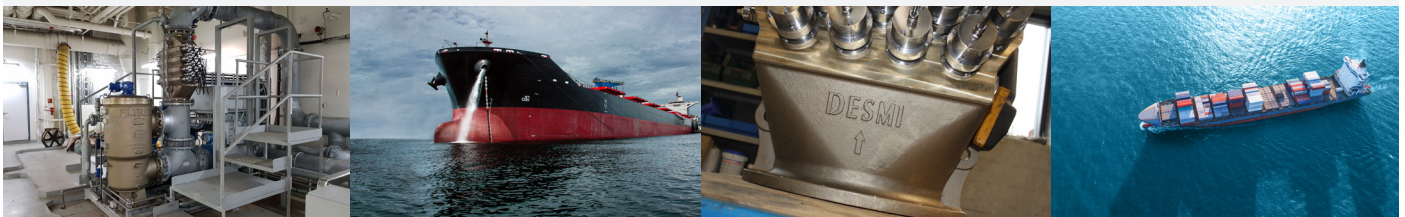
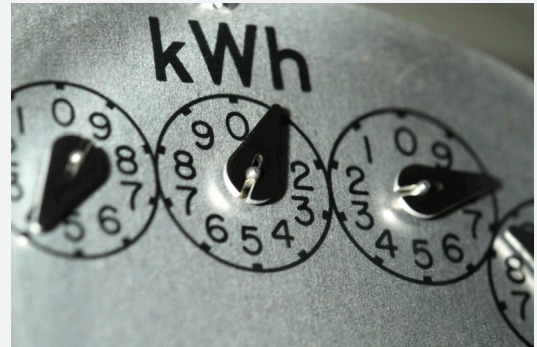
# OptiClean

## - Energy Saving Ballast Water Management System

The combination of DESMI's proven ballast water Management system and energy optimization system provides annual energy savings in addition to IMO and USCG compliant treatment of ballast water

DESMI's innovative OptiClean concept provides net energy savings in combination with compliant ballast water treatment. This is the first time any type of Ballast Water Management system has been able to provide a net energy saving to ship owners and operators.

With DESMI's type approved and energy efficient Ballast Water Management System CompactClean, a ship owner can obtain an annual net energy saving although he treats all ballast water being discharged from the ship.



The OptiClean system automatically adjusts the speed of the vessels cooling system pumps to the actual cooling need, which can lead to significant annual energy savings. This is well documented by around 500 CompactClean systems sold by DESMI to date.

The CompactClean system has been designed to be a highly energy efficient Ballast Water Management System without any use of chemicals. The system has been designed with highly efficient low pressure UV lamps which means the max power consumption of the system is just 7 kWh for every 100 tonnes ballast water treated.

From July 2017 to mid December 2017 the following savings was accomplished at an onboard installation: 1 seawater pump with an average use of 8 kW used 23 MWh in the test period. If DESMI OptiClean had not been installed the normal MWh would have been 53 MWh. This means that a **total saving of 31 MWh was made**. The Ballast Water Management System had 16 ballast operations with a duration of 37 hours in total. The consumption of kWh was in total 723.

*This means:*

The OptiClean concept in this case provided a **net energy saving of 91,980 kWh yearly**, while at the same time treating all discharged ballast water in compliance with the IMO ballast water management convention.

**Can you afford to wait on your OptiClean installation?**



**Yearly Saving of 91,980 kWh  
= 11,830 USD Saving  
= ROI in just 15 months**

For more information on Marine & Offshore solutions, please visit [www.desmi.com](http://www.desmi.com)



# OptiClean - Net Energy Saving System

When the required cooling is lower than the design criteria, OptiClean automatically reduces the power consumption of the seawater cooling pumps. This situation occurs when the seawater temperature is lower than 32°C and/or the main engine is operated at reduced load.

It is a fact that only in limited areas in the seas around the world and within certain seasons does the sea temperature ever get this high. This means that sea going vessels are frequently designed with significant over-capacity built into the cooling systems.

Given the over-capacity with the limited ability to regulate the pumps via on/off control and static orifices, DESMI decided to develop an energy optimization system for the marine industry. The DESMI OptiClean solution was conceived.

The many benefits of DESMI OptiClean are:

- ✓ Energy savings up to 80%
- ✓ Short return on investment
- ✓ Prolonged lifetime of pumps due to less wear and tear
- ✓ Proven technology
- ✓ Proven savings
- ✓ Reduced OPEX



Are you looking for a ballast water management system that can be installed easily and without relocating other equipment? CompactClean is the answer! Almost as easy as plug and play!

It is the first ballast water management systems on the market that combines very low space with large flow rates. Only 3.0 m<sup>2</sup> / 30 sqft is necessary for a 1000 m<sup>3</sup>/h / 4403 gpm system + 0.84 m<sup>2</sup> / 9 sqft for the electrical panel, which can however be placed up to 100 m / 328 ft away from the system itself.

The operation of the system is based purely on mechanical treatment and therefore it does not involve any use of chemicals or active substances. This eliminates risks of hazards to crew, vessel or the environment.

First treatment step is filtration, second step is UV treatment. During de-ballasting, UV treatment is repeated, but the filtration step is skipped.



- ✓ The smallest footprint in industry
- ✓ Only system in the world with integrated stripping solution
- ✓ Filter and UV unit in seawater resistant Nickel-Alu-Bronze
- ✓ Automatic flow control and lamp dimming
- ✓ Fully automated operation
- ✓ 2 hours' holding time on USCG TA Certificate
- ✓ IMO type approval
- ✓ Graphic HMI touchscreen interface
- ✓ Short delivery time
- ✓ Easy maintenance
- ✓ No salinity or temperature limitations
- ✓ Down to UV transmission of just 42% - Also in US Territory!
- ✓ 100% chemical free treatment