



October 2019

VSL Marine Technology finds engineering easier and smarter with the new 1500 m³/h PureBallast 3 reactor

VSL Marine Technology, a 3D scanning and engineering company specialized in ballast water treatment, has had great success with Alfa Laval PureBallast 3. Having been first to work with the new 1500 m³/h UV reactor, the company finds that the PureBallast 3 offering is now even stronger.

Based in Mumbai, India, VSL Marine Technology has handled the engineering in around 25 PureBallast 3 projects so far. Since the majority of these projects are repeated on sister vessels, the company is responsible for a large number of installations on container ships, bulk carriers, supply ships, tankers, VLCCs and more. The company has retrofitted PureBallast 3 systems for flows from 170 up to 1500 m³/h – the latest based on the new 1500 m³/h reactor.

Saving space is an engineering priority

Vikas Laul, Technical Director at VSL Marine Technology, says there are ample reasons for customers to choose UV treatment with PureBallast 3. From VSL Marine Technology's own perspective, the key parameter is size. "Especially when it comes to retrofit, where the ship was not designed to have a treatment system, having a compact system is extremely beneficial when finding the space on board," Laul says. "With UV systems and PureBallast 3 in particular, we end up with a very good and compact system."

In this respect, the 1500 m³/h reactor has been a welcome addition to the existing 170, 300, 600 and 1000 m³/h PureBallast 3 reactor sizes. Recently, VSL Marine Technology became the first engineering company to use the new reactor in practice.

New reactor size solves multiple challenges

VSL Marine Technology was engaged to engineer a PureBallast 3 system for a tanker with a single 1500 m³/h ballast water pump. Based on what was available at the time, the company first designed a system using two separate 1000 m³/h reactors.

“We were able to fit the system on board, but there was little space available for maintenance,” says Laul. “It was also an old ship and its diesel generators were only performing up to 80% capacity. So space was a difficulty, but power consumption was a big issue as well.”

Hearing of the challenges, Alfa Laval approached VSL Marine Technology with the option of using the 1500 m³/h reactor, which had not yet been launched. “It was really nice that Alfa Laval came to us and the ship owner,” says Laul. “We started the engineering and found that a single reactor would allow for sufficient maintenance space and avoid overdimensioning the required power.”

Tangible reduction in footprint and power requirements

When the engineering was complete, the difference made by the 1500 m³/h reactor was substantial. Laul estimates space savings of 20–30%, based on the footprint itself and the space made available for maintenance. “Having space for maintenance and repair is crucial,” Laul emphasizes. “Even the option of removing the whole reactor is a possibility that needs to be planned for. It was quite valuable to achieve that.”

Similarly, the new configuration reduced power requirements from 200 kW to 150 kW. “The ship wasn’t actually going to use 200 kW with that size of pump,” says Laul, noting that the system’s power is now perfectly dimensioned for the flow it will serve.

“The system based on the 1500 m³/h reactor was definitely simpler, and there’s less piping as well,” Laul says in summary. “You have the savings in the system itself, plus OPEX savings, and you have savings in installation, piping and associated electrical components. I have to say that the 1500 m³/h reactor is a brilliant offering by Alfa Laval.”

To learn more about Alfa Laval PureBallast 3 and Alfa Laval’s approach to ballast water treatment, visit www.alfalaval.com/pureballast

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Editor's notes

About Alfa Laval PureBallast

PureBallast, which was the first commercially available ballast water treatment solution, is a chemical-free technology sold and serviced by Alfa Laval. A vital component of PureBallast is the enhanced UV reactor, which was developed jointly by Alfa Laval and Wallenius Water based on Wallenius Water technology. All PureBallast systems are available with both IMO and U.S. Coast Guard type approvals.

About Alfa Laval

Alfa Laval is a leading global provider of specialized products and engineering solutions based on its key technologies of heat transfer, separation and fluid handling.

The company's equipment, systems and services are dedicated to assisting customers in optimizing the performance of their processes. The solutions help them to heat, cool, separate and transport products in industries that produce food and beverages, chemicals and petrochemicals, pharmaceuticals, starch, sugar and ethanol.

Alfa Laval's products are also used in power plants, aboard ships, in oil and gas exploration, in the mechanical engineering industry, in the mining industry and for wastewater treatment, as well as for comfort climate and refrigeration applications.

Alfa Laval's worldwide organization works closely with customers in nearly 100 countries to help them stay ahead in the global arena. Alfa Laval is listed on Nasdaq OMX, and, in 2018, posted annual sales of about SEK 40.7 billion (approx. 4.0 billion Euros). The company has about 17 200 employees.

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