

DATASHEET

FastBallast

D-2 Compliance Monitoring Device (CMD)

Independently Certified - Rapid on-board testing of treated ballast water to ensure compliance with the IMO D-2 Regulations



FastBallast is an independently certified portable Compliance Monitoring Device (CMD) that conforms to the requirements of the **BWM/2/Circ.78** and **ISO 3725:2023** standards. The instrument delivers rapid and accurate counting of living phytoplankton cells in the 10-50 µm size range to ensure compliance with the IMO D-2 Discharge Standard.

Using Chelsea Technologies' unique Single Turnover Active Fluorometry (STAF) technology, FastBallast provides results in under 10 minutes and requires minimal sample preparation and no chemicals, streamlining operations and significantly reducing vessel downtime.

Key Features

- Compliance-level test in under 10 minutes
- Over 10,000 compliance tests completed
- No chemicals or laboratory testing required
- Lightweight and durable

Applications

- Port State Control compliance testing
- On-board ship compliance testing
- Verification of Ballast Water Management Systems
- Commission testing

Customer Testimonial

"At GSA, we partnered with Chelsea Technologies for their industry-leading innovation and cutting-edge technology. FastBallast, their ballast water sampling device, demonstrated exceptional efficiency and reliability, perfectly aligning with our commitment to operational excellence. Since 2017, FastBallast has supported our operations by delivering accurate, near-instantaneous data without substantial issues. This partnership has allowed us to maintain our rigorous schedules, ensuring smooth and efficient operations while reinforcing our competitive edge in the market."

- Adnan Bahamdein (Chief Executive Officer at GSA)

How does FastBallast differ from other CMDs?

Most compliance monitors that utilise active fluorometry estimate living cell count by assuming a fixed variable fluorescence per cell (F_v/cell). However, the F_v/cell can vary by more than 2 orders of magnitude over the 10 μm to 50 μm D2 size range, causing large errors. FastBallast solves this with a patented multi-step method.

First, a quick 2-minute Level 1 test assumes a value for F_v/cell . If the result clearly shows compliance or non-compliance, the process ends there. If not, a more precise 6-minute Level 2 test calculates actual cell count based on the distribution of F_v . Cell size is then calculated from F_v and cell count. Finally, a Level 3 test ensures a few large cells aren't masking a higher number of small ones, avoiding the need for filtration and a repeat test.

Faster than conventional systems, FastBallast reduces vessel downtime by delivering reliable, accurate and size-independent cell counts in under 8-minutes, matching the precision of shore-based laboratory analysis.

Specifications

Performance

Sensitivity	<1 cell/ml
Dynamic range	0 to 4,000 cells/ml
Cell counting size range	10 to 50 μm
Time to result	<2 minutes for Level 1 (clear pass or fail) <10 minutes for Level 2
Sample volume	20 ml
Interrogated volume	0.5 ml
Service interval	2 years

Mechanical

Dimensions	273 x 246 x 122 mm
Weight	4.5 kg
IP Rating with Lid Closed	IP67

Electrical

User Interface	Tablet with FastBallast software installed
Power	Internal rechargeable battery pack provides 8h continuous operation
Instrument to tablet connection	Bluetooth or USB