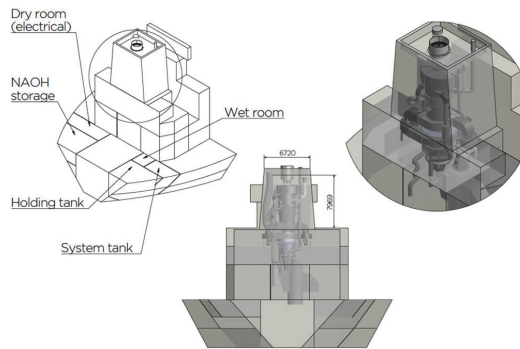


MV BALDER – HANDYMAX BULKER

RETROFIT AT VICTOR LENAC SHIPYARD IN 2013



GENERAL DESCRIPTION

Name	Balder
Type	Handymax bulk carrier
Owner	Torvald Klaveness
Class	DNV
Yard	Oshima Shipbuilding Co., Ltd.
Year built	2002
Imo. No.	9233416
Flag	Marshall Island
Deadweight	48.148 dwt
Length overall	189,99 metres
Breadth Moulded	32,26 metres
Depth Moulded	16,67 metres

SCRUBBER DETAILS

HYBRID (OPEN & CLOSED LOOP)

ONE SINGLE ALLSTREAM EGC UNIT

DIMENSIONS & WEIGHT OF THE EGC UNIT HANDLING 110.000 KG EXHAUST/HOUR

Height (H)	13,7 m
Width (W)	6,9 m
Depth (D)	3,7 m
Weight	17,2 mt
Water flow	400 m ³ /h
El power rqmt.	240 kW

MAJOR SCOPE

2 x Sea water pumps

2 x High pressure pumps

1 x NaOH dosage system

1 x Water Treatment Unit (filter)

1 x PLC, switch board, frequency drives for pumps and fans

1 x Gas (SO₂/CO₂) -, PAH -, Turbidity, pH, flow, temp and pressure monitoring, Internal valves, water inlet filter, flow meters, exhaust dampers (by-pass)

SERVING THE FOLLOWING EXHAUST PRODUCING MACHINERIES

Main Engine	1 x Kawaskai MAN B&W 6S50MC-C, 2 stroke
Auxiliary Engines	3 x Daihatsu Diesel 8 DK-20
Boiler	1 x Alborg Industries GCS - 22ST

