

# Outline description Exmar 2,3 MM bbl FSO



## General

### Main Dimensions

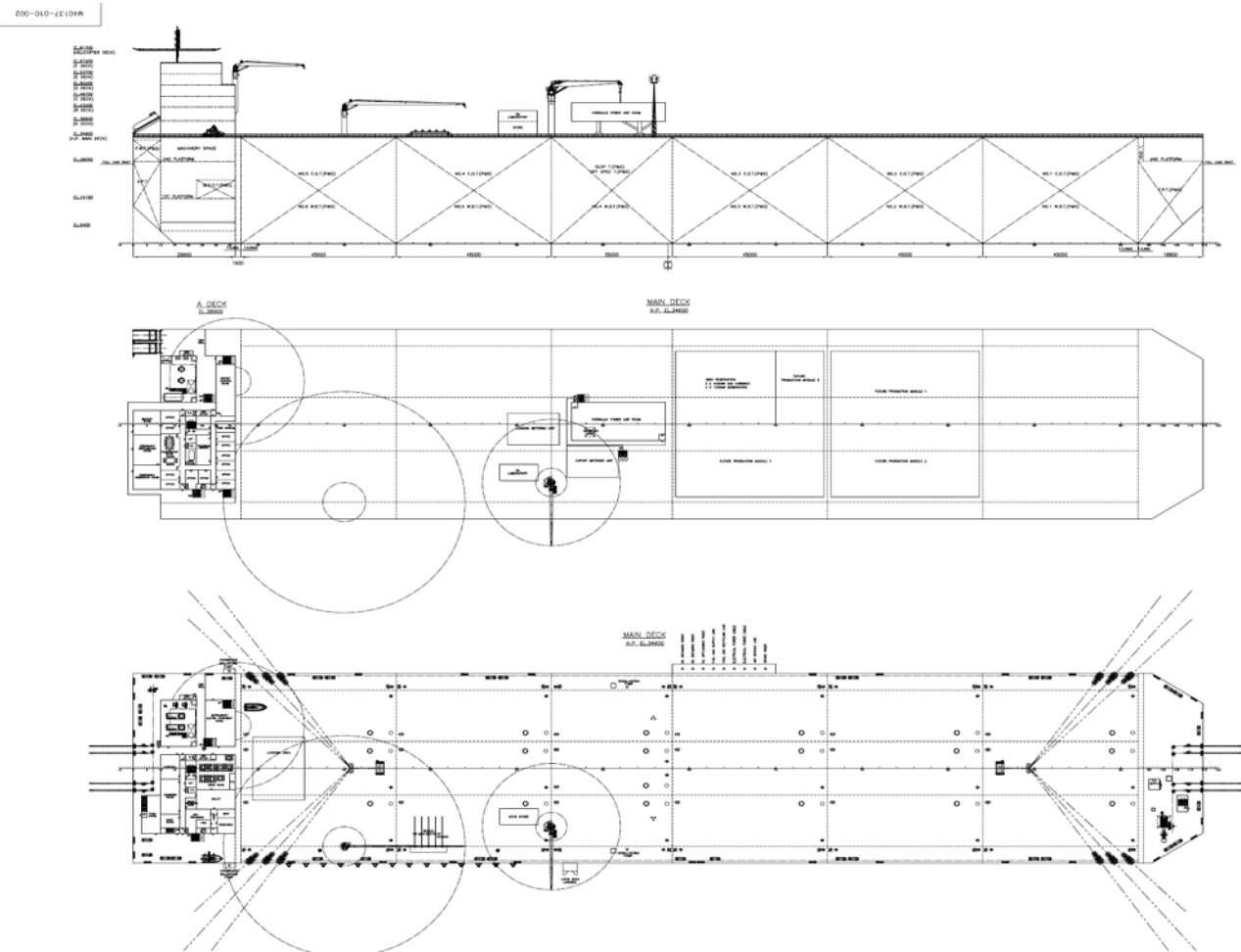
LOA	310 m
LPP	310 m
Beam	60 m
Depth	33.6 m
Laden draft	23.7 m
DWT	369000 tons

### Classification

BV I ✕ HULL, Offshore Service Barge, Oil Storage, VeriSTAR-HULL, POSA, HEL ✕ MACH, IG, AUTO  
 Tropical notation on site  
 Unrestricted navigation for towing

### Tank Capacities

Cargo tanks (100%)		
Five (5) transverse rows	Each row having a Port, Center and Stbd tank	378000 m <sup>3</sup>
One (1) transverse row	Amidship	
Off spec tanks (1 pair)		38200 m <sup>3</sup>
Slop tanks (1 pair)		20200 m <sup>3</sup>
Ballast tanks (6 pairs+AP/FP)		115000 m <sup>3</sup>
MDO tanks		1900 m <sup>3</sup>
FW tanks		1000 m <sup>3</sup>



## Hull

Double side, single bottom barge FSO, without propulsion  
Spread mooring system with 12 mooring lines  
Segregated cargo and ballast tanks  
Hull structure designed for 30 years fatigue life, 20 years without dry-dock, according Class requirements for TROPICAL notation  
Any tank can be emptied and maintained irrespective the filling level of adjacent tanks  
Provision is made to allow installation of tandem offloading equipment, booster pump units, skid mounted gas burning power generation and topside modules amounting to 10,000 tonnes

## Accommodation

Complement and cabins

90 persons + 16 temporary refuge  
14 single person cabins with private shower/toilet  
16 single person cabins with private shower/toilet and space for additional bed  
30 double person cabins with private shower/toilet

## Cargo Handling System

Loading system

The FSO can receive two grades of cargo simultaneously via segregated risers, loading metering units and headers to the cargo tanks. Each cargo tank can be assigned to each grade of cargo.  
Oil can be directed to the storage tanks or alternatively to the off-spec tanks

Cargo pumps

Hydraulic distributed pump system with submerged pumps arranged in sump

Cargo storage tank:	1200m <sup>3</sup> x 150 mlc	(15 sets)
Offspec tank	1200m <sup>3</sup> x 150 mlc	(2 sets)
Slop tank	500m <sup>3</sup> x 150 mlc	(2 sets)
em'cy portable pump	300m <sup>3</sup> x 50 mlc	(1 set)

A transfer header branched to each cargo pump is provided on deck for:

- i) transfer oil between cargo tanks
- ii) pump settled water from cargo tanks to dirty slop tank
- iii) transfer oil from offspec tanks to cargo tanks

Offloading

The FSO shall have an offloading capacity of 7000 m<sup>3</sup>/h via submerged hydraulic pumps through a single offloading header, fiscal metering unit and riser to the PLEM. Different grades of cargo shall be exported consecutively.  
The cargo pumps are used for offloading and cargo tank stripping.  
The em'cy portable pump serves as back-up in case of main cargo pump failure.

Inert gas system

Two (2) sets (fan, burner, scrubber) - 2 x 100% capacity  
Capacity (each) 8750 m<sup>3</sup>/h  
One (1) deck water seal unit supplied by two (2) seawater pumps (one standby)  
One (1) P/V breaker on IG main line on deck  
Each cargo tank is manifolded to a vent header with single pressure/vacuum breaking valve on the vent mast located at the hull's bow

Nitrogen system

provided for: cargo pumps stripping  
cargo systems inerting  
metering outlet flushing

Capacity: 300 Nm<sup>3</sup>/h

Thermal oil heating system

Two (2) sets of MDO burning thermal oil heaters  
Heat capacity sufficient for slop tank operations (oil/water separation) and tank cleaning operations  
Heating coils arranged in all cargo tanks

## Power Generation

### Power generating plant

Three (3) sets (3 x 50%) four-stroke engines burning MDO  
Engine rating (EA): abt. 4600 kW  
Engine speed: 900 rpm  
Alternator Brushless, FW cooled  
Output 5500 kVA (4400kW)  
Voltage 6300V  
Frequency 60 Hz

### Emergency generator

One (1) set four-stroke diesel engine burning MDO  
Engine rating: 1300 kW  
Engine speed: 1800 rpm  
Voltage 450V  
Frequency 60 Hz