

## 105,000 CBM FULLY REFRIGERATED VLAC

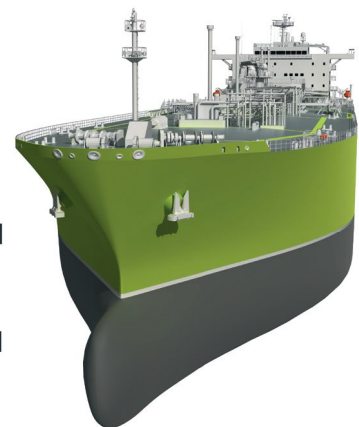
ICE's 105,000 CBM Very Large Ammonia Carrier (VLAC) is a purpose-made design developed from first principles to meet the operational, structural and safety requirements of transporting anhydrous ammonia at scale. Unlike existing ammonia carrier designs adapted from LPG vessel designs, ICE's VLAC fully accounts for the distinct physical and chemical properties of ammonia—such as higher density, corrosivity, toxicity and vapour behaviour—which affect hull structure, cargo containment, safety systems and machinery layout. By addressing these factors at the core of the design, rather than through retrofitting or rebranding, ICE delivers a vessel optimised for long-haul ammonia transport. The platform also offers design flexibility and can be scaled to larger capacities to support future trade routes.

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### Key features of the design include:

- **Optimised hull form and structure:** to accommodate ammonia's higher density, and to avoid deeper operational draughts. The ICE VLAC's draught is equivalent to existing large LPG carriers, enabling access to current terminal infrastructure while offering 25% more capacity than existing designs, suited to future expansions.
- **Four independent Type B prismatic cargo tanks:** providing partial secondary containment while being more economic to build. The design incorporates a segregated cargo / fuel ammonia tank. The cargo tanks undergo advanced structural stress analysis and crack propagation modelling to enhance integrity and minimise the risk of failure.
- **Stress corrosion control:** through material selection, post-weld heat treatment, and exclusion of copper-based alloys, in compliance with IGC Code requirements.
- **Ammonia-specific cargo handling systems:** including adapted purging, reliquefaction and gas-freeing operations, with deepwell pumps used instead of submerged electrical pumps.
- **Dual-fuel ammonia propulsion:** The VLAC design makes provision for a low-speed dual-fuel ammonia engine for propulsion. Combined with an optimised hull form and high propulsion efficiency, the design enables low fuel consumption and reduced carbon dioxide emissions.
- **Crew safety features:** incorporated at design stage, including space for protective equipment, ventilation control and gas detection, in line with IGC Code.



## Principal Dimensions

Length o.a. ....	250.00 m
Length b.p. ....	238.00 m
Breadth mld. ....	42.80 m
Depth mld. ....	24.50 m
Draught, design ....	12.40 m
Draught, summer ....	12.40 m
Deadweight, summer draught .....	abt. 76,000 t

## Capacities

Cargo (4 x IMO Type B tanks)* .....	abt. 105,000 CBM
Very Low Sulphur Fuel Oil .....	4,500 CBM
Marine Gas Oil .....	850 CBM
Lubricating Oil .....	240 CBM
Ballast water .....	abt. 43,500 CBM
Fresh water .....	510 CBM

\* Type A tanks optional

## Accommodation

Accommodation .....	31 persons + 6 Suez crew
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## Power & Propulsion

Electrical network: 690V/50 Hz	*60 Hz optional
Main engine: MAN B&W 7G60ME-C10.5-LGIA Tier III	
18,153 kW x 94 RPM @ MCR	
Generator sets: MAN 5L27/38 Tier III	3 x 1,536 kWe, 750 RPM, 50 Hz
Shaft generator: one set of 4 (four) shaft generators,	4 x 500kWe
Emergency generator: .....	1 x 1,000 kWe
Shore Power Capability	
Composite boiler capacity: exhaust side 4 t/h; oil-fired side 2.5 t/h	
Propeller: 1FPP, dia. 7.8 m, four blades	
Energy-efficient design for future proof EEDI rating	

## Safety

Combined cargo compressor and motor room  
Emergency shutdown system with SIGTTO ship-shore link  
Fire-fighting systems plus full PPE and breathing apparatus  
Toxic gas detection for NH<sub>3</sub>.  
Lifesaving appliances for 37 persons on board (31 crew + 6 Suez crew):  
- 1 enclosed lifeboat with capacity for 40 persons (PS)  
- 1 enclosed life/rescue boat with capacity for 40 persons (SB)  
- 2 x 20 persons liferafts (PS - AFT)  
- 2 x 20 persons liferafts (SB - AFT)  
- 1 x 6 persons liferafts (PS - FWD)

## Cargo System

Cargo handling system designed and supplied by specialist supplier.

Cargo Pumps: ..... 8 x 600 CBM/h

## Ballast System

Ballast Pumps ..... 3 x 1,050 CBM/h  
BWT Unit compliant with the latest MARPOL V

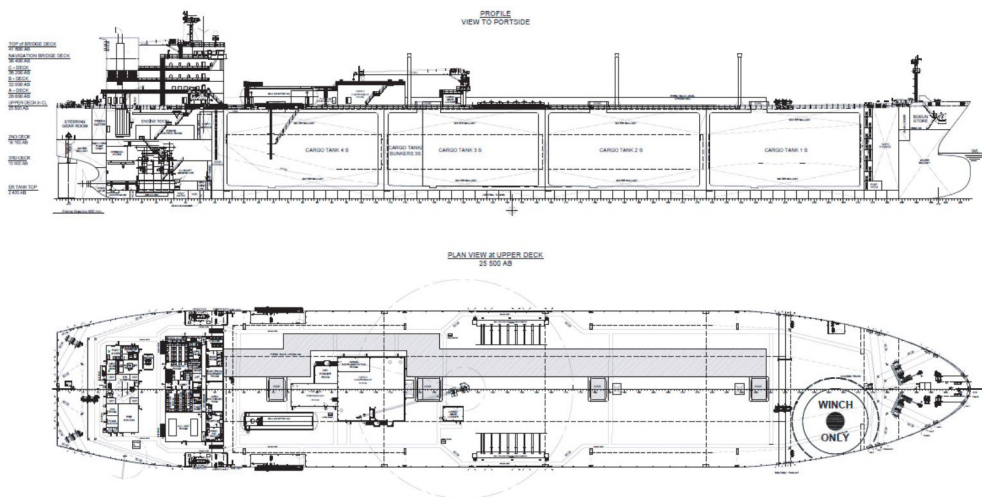
## Speed

Service Speed ..... 16.5 knots  
Range ..... 20,000 Nm

## Class - ABS\*\*

✱A1, Liquefied Gas Carrier, LFFS (DFD - Ammonia) RELIQ,  
①, ✱AMS, ✱ACCU, CPS-B, BWT, CRC-SC, ENVIRO, IHM,  
RW, RRDA

\*\*Another IACS Class is optional.



## ENGINEERING CERTAINTY

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