

The KDDI Cable *Infinity*



Colombo Dockyard PLC

"... an Odyssey of Excellence"

The KDDI Cable *Infinity*

Presenting the KDDI Cable Infinity, one of the most technologically advanced vessels to sail the seas, purpose designed for the task of undersea cable laying and cable maintenance, this is a new class of super vessels.

Designed for global deployment, this modern, highly sophisticated ship is a testament to the technical skills and expertise of Sri Lanka's Colombo Dockyard. The KDDI Cable Infinity demonstrates Colombo Dockyard's capability to construct and deliver large, complex vessels to the world.

BACKGROUND



The KDDI Cable Infinity was built by Colombo Dockyard PLC for Kokusai Cable Ship Co. Ltd. (KCS) of Japan and is intended for the purpose of subsea cable installation and to perform repair works on 'optical' as well as 'power' cables.

Based on its operational requirements, the KDDI Cable Infinity is designed to be a technology driven, ultra modern vessel, for laying and repairing underwater optical and power cables.

Given its complex technical capabilities, the KDDI Cable Infinity is the first ever ship built 'in its class' by a Sri Lanka shipbuilder for Japan. As at July 2019, this was the largest vessel to be built by the Colombo Dockyard in its illustrious history of shipbuilding excellence.

KEY FEATURES



High technology,
complex Vessel



BUILT COMPLYING TO CLASSNK
AND JAPANESE GOVERNMENT
[JG] REQUIREMENTS



Diesel Electric driven with Azimuth
propellers, two tunnel thrusters and
one retractable azimuth thruster in
the forward



Capable of subsea operations
of cable laying and repair of
Optical and Electric cables

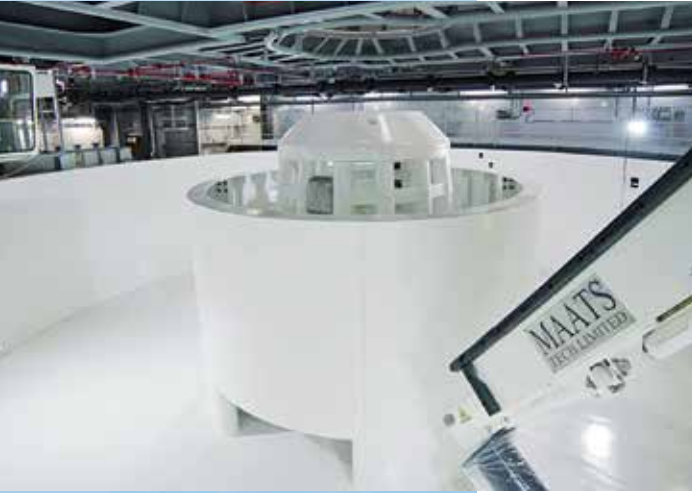


5,757
Deadweight capacity



Includes eco-friendly
features





THE DESIGN AND SPECIFICATIONS

DESIGN AND TECHNOLOGY

The KDDI Cable Infinity is specially designed by VARD DESIGN Norway with emphasis on maintaining good sea keeping ability and excellent station keeping performance.

- Passive 'roll reduction tanks' help minimise the effect of ship rolling.
- Special features include, low resistance hull lines designed for higher speed and low fuel consumption.
- The KDDI Cable Infinity is also extremely eco-friendly. Scrubbers/SCR are installed to reduce harmful emissions from main engines comply with IMO Global Sulphur Cap 2020 requirements. In addition, waste storage solutions, water ballast treatment systems and eco-subsea coating solutions make the vessel environmentally friendly and due to this, The KDDI Cable Infinity can operate in all parts of the world.

SPECIFICATIONS

The KDDI Cable Infinity is arranged with 2 main cable tanks, 2 spare cable tanks and 2 rope tanks. The Vessel has a well laid out cable laying deck equipped with Drum Cable Engines, Draw Off Hold Back Engines, Cable Engine Control Rooms, Cable Control Rooms, Jointing Rooms, Workshops, Overhead Travelling Cranes, Cable Diverters and Stern Sheaves.

The two 'Drum Cable Engines' are electric driven, 4 meters in diameter, self-fleeting and has a haul in capacity of 40 tonnes. Each of the Draw Off Hold Back (DOHB) is electric driven, 4 wheel paired, linear cable engines, with synchronised drive systems. Furthermore, the vessel is equipped with tension slow down features integrated to DP system, so that if laying cable tension is too high, the vessel speed will reduce, as a safety feature.

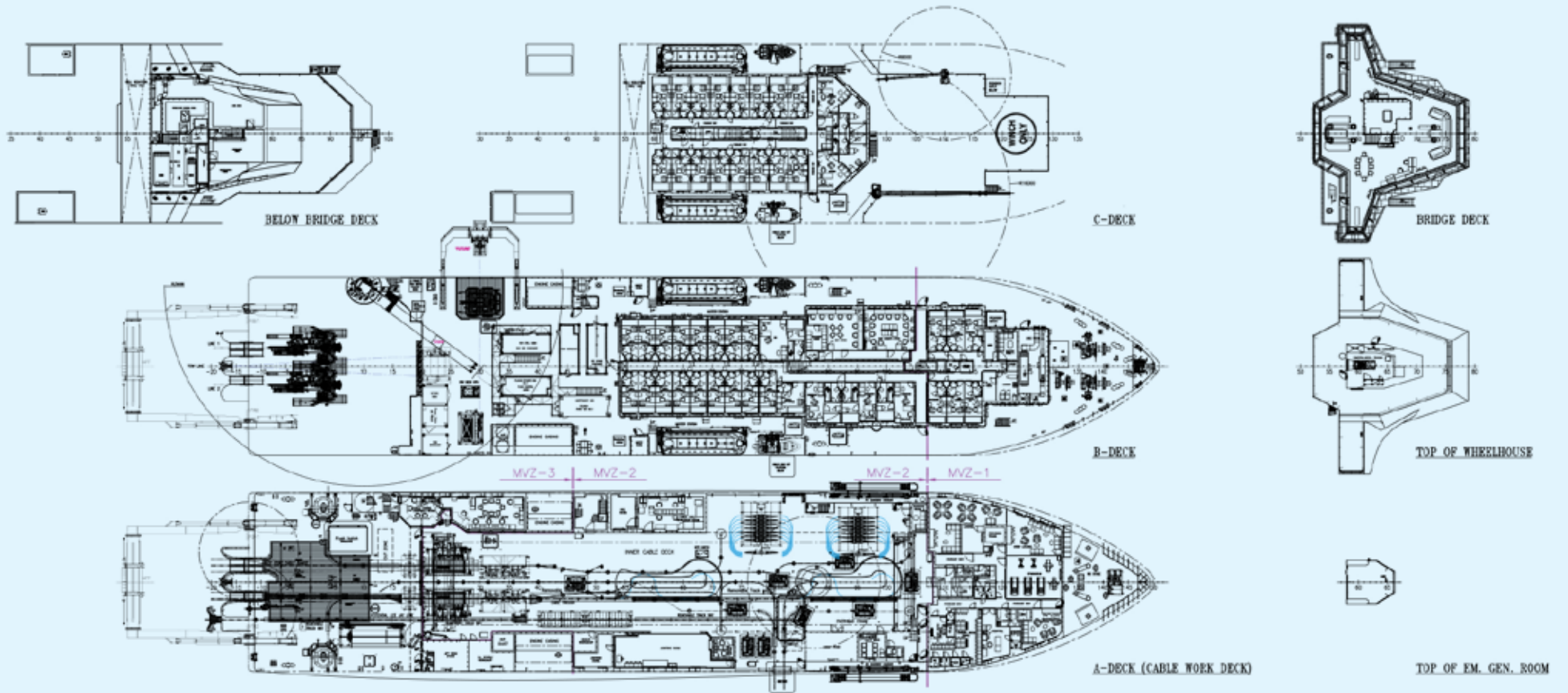
Also available is an 'A-Frame' of 50 tonne capacity for 'plough' deployment and recovery over the stern and 'A Frames' for Buoy Handling and ROV Handling.

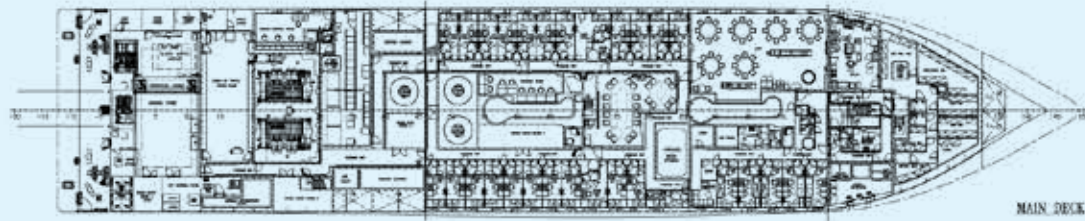
In addition to the cables, the vessel has been designed to carry 1,636 cubic meters of fuel oil, of which, 308 cubic meters is low sulphur fuel oil, 178 cubic meters of potable water, 651 cubic meters of fresh water and 2,814 cubic meters of water ballast.

A special paint coating has been applied to reduce frictional losses, which also contributes towards fuel saving, in addition to long term protection against under water fouling.

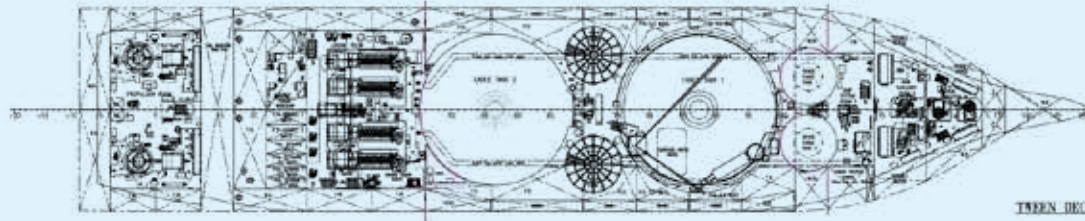
The vessel has a bollard pull of 80 tonnes and has Dynamic Positioning Capability to Class 2 for precision maneuvering and station keeping, which is required to facilitate precision cable laying operations.

GENERAL ARRANGEMENT PLAN

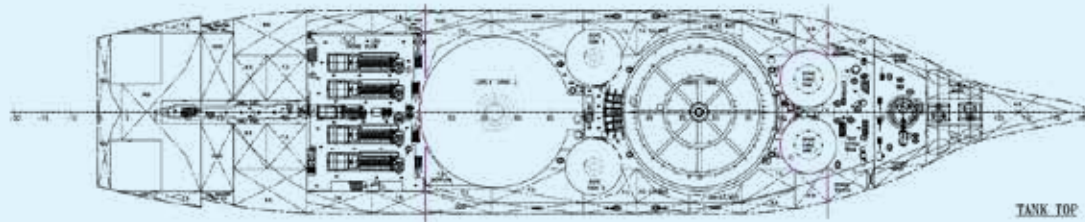




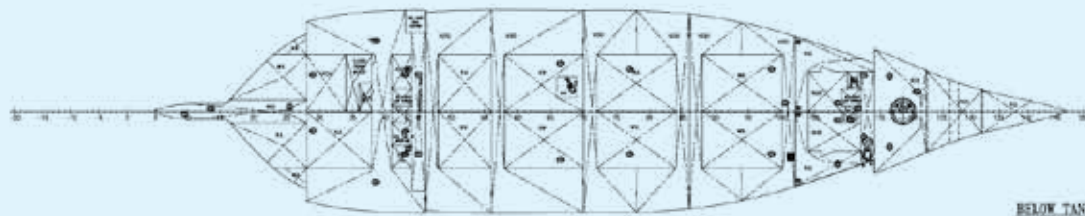
MAIN DECK



TWEEN DECK



TANK TOP



BELOW TANK TOP

VARD 9 01

MAIN DIMENSIONS

L.O.A.	113.1 m
L.P.P.	96.2 m
BREADTH MLD.	21.5 m
DEPTH MAIN DK.	8.8 m
MAX. DRAUGHT	7.1 m

FUEL OIL (TOTAL: MDO+LS MGO)	1400 m ³
FUEL OIL (LS MGO)	300 m ³
FRESH WATER	600 m ³
POTABLE WATER	150 m ³
WATER BALLAST	2500 m ³
CABLE AND ROPE TANKS	5000 t

ACCOMMODATION:	
CAPTAIN CLASS CABINS	6 PERS.
SENIOR OFFICER CABINS	16 PERS.
JUNIOR OFFICER CABINS	24 PERS.
SINGLE CREW CABINS	24 PERS.
DOUBLE PASSENGER CABINS	10 PERS.
TOTAL	80 PERS.



POWER AND PROPULSION

The KDDI Cable Infinity is diesel-electric driven and has optimised power, which is another key feature. Power is provided by four generator sets, each developing 2,300 kW.

Three generators out of the four available are sufficient to cope with the highest propulsion power demands, ensuring high reliability. Transit at economic speed with two generator engines efficiently running, will optimise fuel consumption.

Propulsion is by two Azimuth propellers in the aft and two 'Tunnel Thrusters' and one retractable Azimuth thruster, in the forward. All Five thrusters on board are controllable pitch propelled, with variable RPM as well. This enables the pitch and RPM to be optimised for the best fuel economy.

EQUIPMENT AND SYSTEMS

The Wheel House, which has a 360 degree panoramic view, is fitted with the latest navigational and communicational equipment. The navigation console features radar systems, GPS and DGPS Satellite Navigators, Dual Electronic Chart Display and Information Systems, Gyro Compasses, Gyro Repeaters, an Autopilot System, Navigational Echo Sounders, Magnetic Compasses, Automatic Identification Systems, Voyage Data Recorders, a Central Alarm System for Bridge alarms and warnings, Conning system and DP command station.

The external communication equipment is aligned with GMDSS Sea Area A3. Bridge equipment includes SSB Radio Telephone Stations, Satellite Communication Systems, VHF/ UHF Telephone Systems and a modern Internal Communication System. The Bridge conforms to “BRS1” notation and is equipped with ‘Accident Prevention Systems.’

For greater security, The KDDI Cable Infinity has in-built anti-piracy solutions, therefore the Wheel House and other key areas are protected with bullet proof glass and steel doors with key card access controls.

All life-saving and personal protective appliances to comply with latest rule requirement, have been installed. Safety equipment includes a MOB boat with launching appliances, life boats, inflatable life rafts, lifebuoys and life jackets.

INTERIOR DESIGN

The interior design of The KDDI Cable Infinity has been accomplished to be aesthetically appealing, coupled with flexible operational capabilities to provide a comfortable platform for operational personnel. The Vessel’s material, equipment, construction, quality and performance, conforms to the highest internationally accepted marine industrial norms and standards.

CREW AND PASSENGER FACILITIES

Special attention has been paid to contain noise and vibration levels in accommodation and working spaces in accordance with IMO requirements. The main emphasis of this vessel has been to provide ample working space for all crew while increasing cargo capacity.

The Mess is designed as a self-serving area for 50 persons, with dining tables and chairs. The Galley has been outfitted with equipment sourced from world renowned Galley equipment suppliers and the Galley surfaces are laid out in stainless steel.

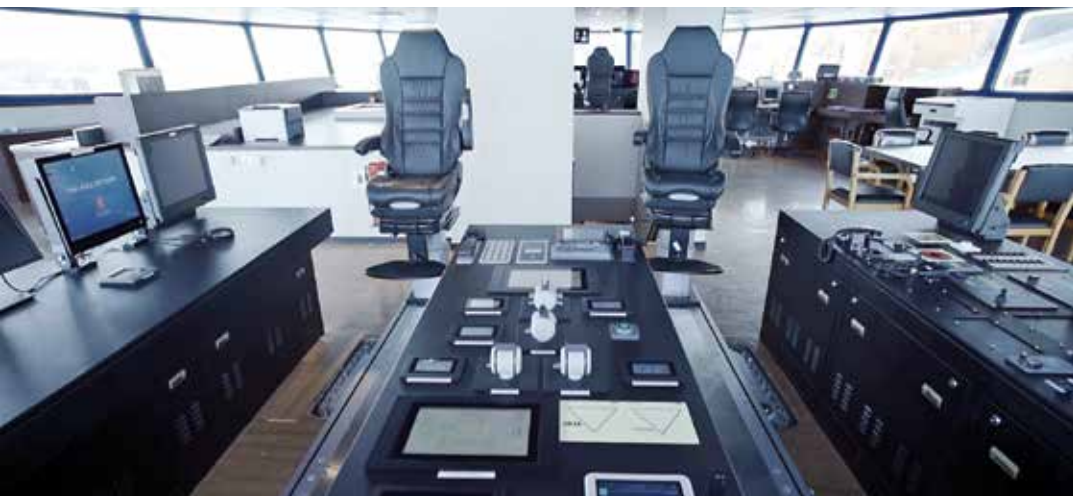
All passenger accommodation spaces are fully air-conditioned, including the stairways. Cabins and public spaces have been outfitted using panels, furniture and toilet modules supplied by reputed Japanese brands, maintaining very high aesthetic standards.

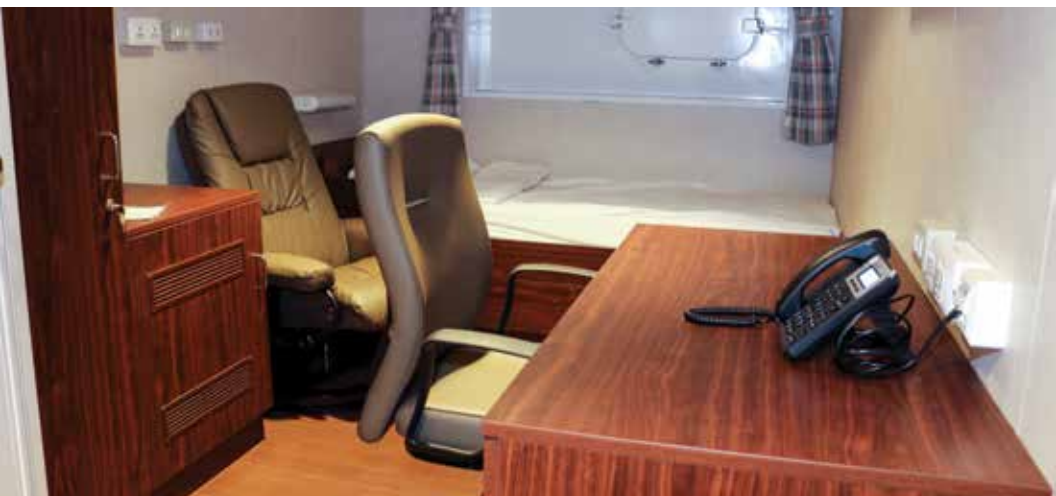
The KDDI Cable Infinity is also arranged and equipped with a hospital fitted with a treatment bench, medical lockers with shelves and a dispensary.

WASTE TREATMENT

Waste is treated by an onboard garbage disposal plant and stored for disposal at shore.







COLOMBO DOCKYARD PLC

Established in 1974, Colombo Dockyard is Sri Lanka’s leading ship repair, shipbuilding, heavy engineering and offshore engineering facility.

The Colombo Dockyard operates from the port of Colombo, which is a central shipping hub for all major shipping lanes connecting the West, the Middle East, the Far East, as well as Africa and Australia. This central location of the Colombo Dockyard lends a natural strategic advantage for both dry dock and afloat operations.

CONFORMANCE WITH CLASSIFICATION SOCIETIES

Colombo Dockyard complies with multiple international classification societies to ensure the highest technical standards for the construction and operation of ships manufactured by the company.

- 🚢 AMERICAN BUREAU OF SHIPPING
- 🚢 BUREAU VERITAS
- 🚢 DNV GL
- 🚢 INDIAN REGISTER OF SHIPPING
- 🚢 LLOYDS REGISTER OF SHIPPING
- 🚢 NIPPON KAIJI KYOKAI (CLASS NK)
- 🚢 INTERNATIONAL REGISTER OF SHIPPING

DOCKYARD FACILITIES

Colombo Dockyard, is a state of the art engineering entity operating 4 graving dry docks with a maximum capacity of 125,000 DWT and has extensive repair berth facilities.

We operate as a ‘one-stop-repair-yard,’ where we attend to;

- 🚢 Routine dry docking repairs
- 🚢 Major layup repairs
- 🚢 Collision damage repairs
- 🚢 Conversions and retrofits
- 🚢 Installation of ballast water treatment systems, scrubbers

Dock No	Length [m]	Breadth [m]	Depth [m]	Capacity [Dwt]	Cranage [t]
Drydock No. 1A	148	26	9.7	30,000	160
Drydock No. 1B [Shipbuilding]	62	26	9.7		160
Drydock No. 2 [Shipbuilding]	107	24	6.7	9,000	160
Drydock No. 3	122	16	5.5	8,000	20
Drydock No. 4	263	44	8.9	125,000	50

QUALITY SYSTEMS

Maintaining stringent quality standards in all our processes is an integral part of Colombo Dockyard's corporate philosophy. We ensure that documentation systems, in compliance with international quality standards, are maintained at all levels within the Company. A Quality Manual, Quality Procedure Manual and Work Instructions are enforced across all activities and processes.

Colombo Dockyard quality management system certified to:

- ISO 9001:2015
- ISO 14001:2015
- OHSAS 18001:2007





www.cdl.lk

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