
50m Factory Trawler sets the standard in efficiency and fish processing capacity

The Danish Naval Design and Marine Consultancy **Knud E. Hansen A/S** has developed a highly efficient 50 m factory trawler with a focus on operating efficiency and maximised catch processing facilities.



The design delivers excellent fuel economy, reduced environmental impact, and the flexibility to be operated as a single or pair trawler.

Fishery

Fishing is well known to be an environmentally sustainable method of food production. Greenhouse gas emissions are far lower than the equivalent land-based meat production.

Trawling

Even though trawling has been regarded as destructive and high oil consuming, it is a fact that pelagic trawling together with purse seine is the most sustainable way of catching fish measured by energy consumption and emission of greenhouse gasses per unit catch. Through the use of new technology pelagic trawls can also operate close to the bottom catching “ground-fish” without damaging the sea bed. In addition, pelagic trawling has a low rate of unwanted by-catch compared to other fishing methods. Trawling does therefore have a future as a sustainable way of producing food.

Size of trawler

Standards of safety, working- and living conditions together with the desire to allow reasonable space for processing catch on board have led to an optimal ship length of at least 50 metres. Examining the current trends in the size of vessels in fishing fleets around the world ship lengths of 55 to 60 metres are prevalent; in line with this new energy-efficient design from Knud E. Hansen A/S.

Vessel layout

The trawler is designed with 2 continuous decks for a fluid workflow plus one partly open boat deck and a forecastle deck. The superstructure is three decks high and is positioned forward of amidships.

The fish hold and engine room together with bunker tanks are placed below the first deck.

The entire first deck, apart from engine casings aft, is dedicated for fish processing and quick freezing - some 300 square metres of customizable space.

The second deck is the trawl deck and has double trawl lanes running the entire ship length with casings at each side forward containing accommodation and trawl-shops.

On the boat deck behind the superstructure is ample space for winches, cranes and lifesaving equipment.



Energy efficiency

The hull is designed with a bow shape optimised for efficient operation in all sea states and at all draughts while trawling. The propulsion system has been designed with a focus on energy efficiency and consists of two low-speed large-diameter propellers in nozzles optimized for trawling speed. An efficient single propeller solution can also be achieved if desired by the operator.

The ship is constructed to meet the DNV-SILANT-F requirements and as low noise radiation into the sea generally results in better catch it thereby lowers the fuel consumption and greenhouse gas emission per unit catch.

Configuration

The trawler can be configured to operate both as a single trawler and as a pair trawler. If intended for pair trawling only, a lower installed power and a reduction in the number of winches and trawling equipment will be possible.

Particulars and capacities

Main dimensions:

Length, overall	50,00 m
Breadth	11,25 m
Depth to first deck	4,50 m
Depth to second deck	7,00 m
Draught, max to baseline	4,50 m

Crew:

Single cabins	6
Double cabins	8
Hospital with two beds	1

Capacities (customizable):

Hold	700 m ³
Fish processing area	300 m ²
Fuel oil	250 m ³
Fresh Water	50 m ³
Silage, etc.	80 m ³

Engine Power:

As single trawler, abt.	2000 kW
As pair trawler, abt.	1500 kW

Class designation

DNV *1A1 Stern Trawler ICE-C EO SILANT-F, or similar

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Knud E. Hansen A/S (www.knudehansen.com) is one of the world's leading marine consultancies with more than 74 years of experience in ship design, with a proven track record in providing unique and cutting-edge solutions to the maritime industry. Knud E. Hansen A/S employs more than 55 naval architects and marine engineers in Denmark, UK, USA, Greece, Australia and the Faroe Islands.

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