



Sweden's new climate neutral research vessel for the polar regions

General

TYPE

The vessel is a Heavy Polar Research Vessel designed, built and equipped for Research, Icebreaking, Ice Management and Escort operations in a Polar environment.

It is also suitable for open water operations worldwide.

LOW ENVIRONMENTAL IMPACT

The vessel is optimized for low environmental impact operation.

The power plant is to be a redundant dual-fuel methanol/diesel gen-set machinery.

A battery energy storage system is to be installed for emission-free operation, spinning reserve and peak-shaving.

The polar environment is to be specially considered.

WORLDWIDE OPERATIONS

The vessel shall meet all regulatory requirements for worldwide operations.

NOTATIONS

The vessel is to be designed and built under the survey of an IACS Classification society and the following notations or equivalent: Icebreaker, Ice Class PC2, SPS, Towing Vessel, DPS-2, Helideck, De-Ice, etc.

ENDURANCE

Endurance in polar operations is to be at least 100 days.
Basis average propulsion power of 50 per cent.

BERTHS

120 persons onboard in minimal 76 cabins.

ROLLING PERIOD

The rolling period in open water to be at least 12 sec.

SPEED IN OPEN WATER

Speed in open water is 17 knots at 85 % propulsion power.

PERFORMANCE IN ICE

The vessel is to have the following performance in ice conditions with an ice flexural strength of 500 kPa:

- to break 1.8 m level ice at a continuous speed of 5 knots ahead
- to break 1.2 m level ice at a continuous speed of 3 knots astern
- continuous operation in 2.5 m level ice with ice flexural strength 700 kPa

Ship's equipment

CRANES

Electro-hydraulic deck cranes of knuckle boom type are to be provided, one with a capacity of 15/7.5 tonnes at 15/25 m outreach and one with a capacity of 3 tonnes at 10 m outreach. The aft main deck is to be structurally reinforced for later installation of an additional high-capacity deck crane.

BOW THRUSTERS

Two transversal Bow Thrusters are to be installed.

DYNAMIC POSITIONING SYSTEM

DP-2 is to be provided.

IT AND SCIENTIFIC EQUIPMENT

5 climate-controlled server-rooms to be arranged.
Network onboard to be fibre-optic.

MAIN DIMENSIONS

Length overall	140 m
Length in waterline	137 m
Breadth at dwl, midships	28 m
Breadth maximum	32 m
Draught, at design waterline	10,5 m
Draught, scantling	11 m
Depth to the main deck	15 m

AMBIENT CONDITIONS

Design temperature	+40°C to -40°C
Minimum air temperature	-50°C
Sea water temperature	+32°C to -2°C

Dimensions and capacities are not finally decided, only given as guidance.

The Swedish government is exploring options for the future polar research vessel, and no decision has been made yet.

