Aker ARC 220

Aker Arctic

Arctic Container Vessel

AkAker Arctic Technology developed a concept design of new 8000 TEU Arctic Container Carrier (Aker ARC 220) intended for year-round operations in the Russian Arctic Seas.

The new 8000 TEU Arctic Container Carrier is designed with improved open water performance and reduced fuel consumption to ensure year-round navigations in heavy ice conditions and to comply with the latest EEDI requirements. The beam of the vessel is about 46 m which allows safe navigation in channels created by YamalMax LNG carriers and modern icebreakers.

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The vessels may be equipped with two types of propulsion system:

A. two shaftlines with total power of 44MW (2x22 MW); and
B. hybrid propulsion system consisted of one shaftline and two PODs with total power of 56 MW (1x22 MW, 2x17MW).

These solutions allow independent navigation in level ice of 1.9 m and 2.3 m thick for two-shaftlines propulsion system and for hybrid propulsion system respectively. The hybrid solution complies with Double-Acting ship (DASTM) principle. The icebreaking performance could be estimated as for Arc7+ ice class vessel based on Russian Register classification scale. The diesel-electric concept of machinery gives an opportunity to split engine room and accommodations without loosing any space for containers and to ensure comfort level for the crew. The special icebreaking hull form of the bow results in high icebreaking performances and extra space for containers in the foreship area. The visibility issues, which is common for all container vessels, is particularly sensitive for astern operation in ice. The better visibility is achieved by arranging an aft wheelhouse at aft mooring deck.

New Arctic Container Carrier concept is based on the best knowledge and experience of Aker Arctic in design of smaller container vessels of “Norilskiy Nickel” type (648 TEU), as well as new researches and developments used in design of large the state-of-art YamalMax LNG carriers. The vessels may be equipped with two types of propulsion system:

Aker Arctic consider the opportunity to equip the new Container Carrier with an independent LNG fuel tank which may be replaced with independent nuclear reactor unit with minimal design changes, if necessary.

Main dimensions

Container capacity	8000 TEU
Length over all	300 m
Length at design wl	290 m
Breadth	46 m
Draught at design wl	12 m
Installed propulsion power	
A version	56 MW (1x22 MW shaftline, 2x17 MW thrusters)
B version	44 MW (2 x 22 MW shaftlines)
Icebreaking capability	Level ice performances ahead (3 knots)
A version	2,3 m
B version	1,9 m
Ice class	RMRS Arc7

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