Nuyina is a Polar Class 3 Icebreaker. Capable of breaking 1.65m of ice at 3 knots continuously. The special bow design is key to Nuyina’s ability to efficiently move through ice.

Nuyina’s propulsion system is a hybrid diesel electric design. The key components of the hybrid drive are the advanced electric drives, generators and the 16-cyl diesel main engines. The combined power of Nuyina is 26,600kW.

Nuyina will be able to carry more than 1200 tonnes of dry cargo. This includes contaminated and unusually shaped cargo, Antarctic machinery, spare parts and food.

Nuyina will accommodate 32 crew including the Captain as well as 117 Antarctic expeditioners for more than 90 days at sea.

Nuyina has 2 main cargo cranes, capable of lifting 55 tonnes each. The cranes will move all the cargo in and out of the holds, including containers, Hagglunds and bulldozers.

The primary method to transport cargo from Nuyina to Antarctic research stations is by landing barge. The barges can carry more than 45 tonnes and reach speeds exceeding 8 knots.

As well as dry cargo, Nuyina will deliver liquid fuel as cargo to Antarctic research stations. The liquid cargo fuel tanks will hold more than 1.9 million litres of Special Antarctic Blend - Diesel fuel oil.

Because Nuyina operates so far from Australia, a medical facility has been included in the design. The medical facility includes two ward areas, an operating room, an office and a full range of medical equipment.

Nuyina can stow 4 light helicopters or 2 medium helicopters in its hangar. Helicopters can land on the aft helideck, as well as lift cargo on a cable from the bow.
Nuyina is a resupply and scientific research vessel. As well as scientific laboratories, Nuyina has other scientific equipment including a moon pool, drop-keels, multi-beam bathymetric and scientific echo sounders, fisheries sonar systems, hydrophones and underwater cameras.

Winch and cable systems enable deployment of scientific equipment, including net systems, real time video packages, corers and grabs to sample the Southern Ocean and sea floor.

Meteorological measurements support forecasting and climate services such as those provided by the Bureau of Meteorology.

Nuyina can carry 117 scientists and expeditioners and 32 crew for up to 90 days.

On-board aquariums can be used to hold and study fragile lifeforms such as fish, jellyfish, krill and zooplankton.

Air samples are collected and analysed by instruments that measure gases and particles including aerosols, ozone and greenhouse gases.

Nets are used to catch fish and krill for scientific research.

ROVs fitted with cameras and instruments for taking measurements and samples can be deployed through the moon pool.

Nuyina can carry 96 specially equipped shipping containers. 22 can be serviced laboratories and support containers.

Some science projects will use specially equipped shipping containers to travel with science equipment.
For more information about RSV Nuyina visit antarctica.gov.au/icebreaker

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