



Optima DUCT

SMARTER PROPULSION FOR A SUSTAINABLE FUTURE

DAMEN
MARINE COMPONENTS

Damen Marine Components
Nijverheidsstraat 5
3371 XE Hardinxveld-Giessendam

P.O. Box 257
3370 AG Hardinxveld-Giessendam
The Netherlands

+31 (0)184 67 62 62
info-dmc@damen.com
damenmc.com

Damen Shipyards Group owns all intellectual property rights (including amongst other things copyright) as used in this brochure – © Damen Shipyards Group 2026.
No rights can be derived from the information with regard to dimensions, characteristics or performances of any of the products & services shown.
Except with the prior express written permission of Damen Shipyards Group, nothing in this brochure and its content may be distributed and/or commercially exploited.

BRO-4-049 2604

DAMEN
MARINE COMPONENTS



Key Benefits

- Improved propulsion efficiency
- Reduced fuel consumption
- Lower CO₂ emissions
- Increased effective thrust
- Suitable for newbuilds and retrofits

Part of DMC's Energy Saving Devices

The Optima DUCT is part of DMC's ESD portfolio. Solutions aimed at reducing fuel consumption and emissions. Combined with other ESD's, it supports shipowners on their journey towards more sustainable operations.

Optima DUCT

The Optima DUCT is a pre-swirl Energy Saving Device (ESD) developed by Damen Marine Components to improve propeller efficiency and reduce fuel consumption. Installed upstream of the propeller, the Optima DUCT optimises the inflow, enabling the propeller to operate under more uniform and efficient conditions. By improving the wake field before it reaches the propeller blades, the Optima DUCT reduces rotational losses and increases effective thrust. The result: the same vessel speed with less required power.

More thrust. Greater efficiency. Less fuel.

Optimised inflow up to 6%

Every propeller operates in a non-uniform wake field. Variations in inflow velocity and direction lead to uneven blade loading, energy losses and reduced propulsive efficiency.

The Optima DUCT corrects this imbalance by guiding and prerotating the water flow ahead of the propeller. This ensures a smoother inflow over the full propeller disc, allowing each blade to work more efficiently throughout its rotation.

Depending on vessel type and operating profile, savings of up to 6% can be achieved.

Designed for efficiency and sustainability

The Optima DUCT contributes directly to lower fuel consumption and reduced emissions. By decreasing the power demand of the propulsion system, CO₂ emissions are reduced without compromising vessel performance.

This makes the Optima DUCT a practical and effective solution if you want to improve operational efficiency, or if you want to reduce OPEX.

The system also supports compliance with current environmental regulations.

Newbuild and retrofit

The Optima DUCT is suitable for a wide range of vessel types and can be seamlessly integrated in both newbuild and retrofit projects.

For newbuilds, the Optima DUCT is optimised as an integral part of the overall propulsion design, while for existing vessels it can be efficiently installed during a scheduled drydocking.

DMC provides full support throughout the entire process, from hydrodynamic assessment and engineering to manufacturing and installation.

Improved propulsion efficiency

