



Offshore Patrol Vessels

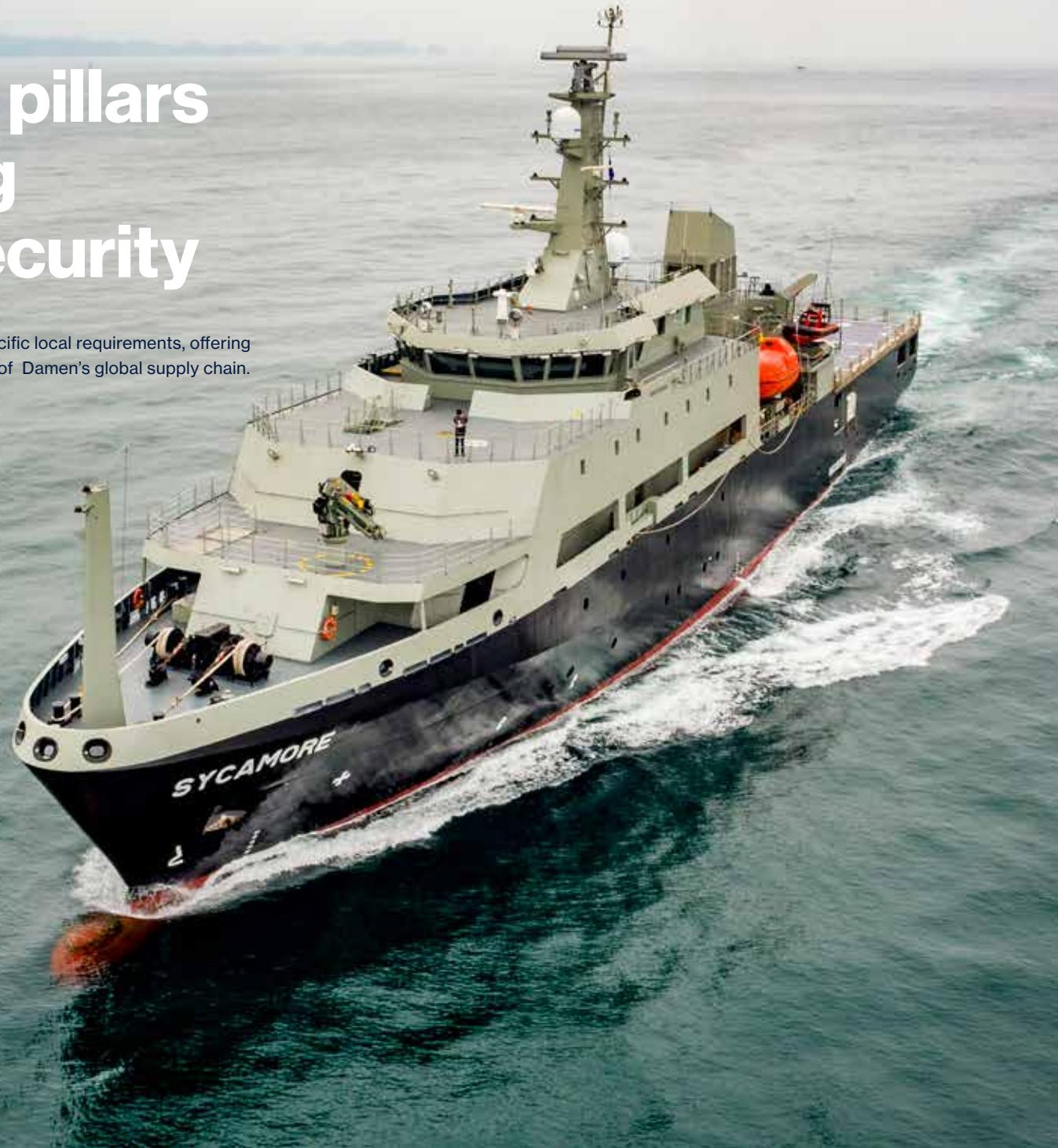
THE ESSENCE OF VERSATILITY

DAMEN

OFFSHORE PATROL VESSELS

One of your pillars in delivering maritime security

» The OPV range can be adapted to meet specific local requirements, offering proven solutions and high availability as a result of Damen's global supply chain.





Built at your desired location

» Not only can they operate all over the world, they can be built all over the world too. Building locally results in valuable transfers of technology and increased local content.

OFFSHORE PATROL VESSELS

The choice of many Coast Guards and Law Enforcement Agencies



“

A range of
design
possibilities ”



- » With more than 30 ships delivered and many under construction, Damen OPVs are continuously improved and have proved to be highly flexible in meeting customers' demands.
- » From 50 to 125 metres long, Damen Defence and Security delivers turnkey design, engineering and construction in addition to product lifecycle support.



» The Damen range of patrol vessels provides customers with bespoke solutions that match their available budgets. All Damen patrol vessels are designed to enable National Law Enforcement capabilities to operate at sea. They provide the basis for maintaining presence, detecting violations, gathering evidence and the successful prosecution of criminals. They can even contribute to national security by using their onboard sensors to improve maritime situational awareness.



Inshore Patrol Vessels

Patrol	5009	5509	6211
Length (m)	50.1	57.4	62.2
Beam (m)	9.4	9.5	11.5
Draught (m)	3.5	3.3	4.0
Displacement (t)	485	515	1000
Speed (kn)	up to 29.5	up to 29	up to 30
Range (nm)	2900	3300	5000
RHIBs	1x 7.5 m 2x 11.0 m	1x 7.5 m 2x 11.0 m	1x 7.5 m 2x 11.0 m
HELO	VERTREP area	VERTREP area	VERTREP area
Accommodation	Up to 28	Up to 30	Up to 64
Mission types	SAR Law Enforcement Surveillance Presence		



Offshore Patrol Vessels Coast Guard

Patrol	1400	1800	2400
Length (m)	72.0	83.0	90.5
Beam (m)	12.7	13.7	14.0
Draught (m)	3.7	3.9	4.0
Displacement (t)	1440	1900	2500
Speed (kn)	18-21	20-22	20-22
Range (nm)	4600	5000	5000
RHIBs	2x 9.0 m	2x 8.5 m	2x 6.5 m
HELO	1x med. weight	1x med. weight	1x med. weight
Accommodation	Up to 60	Up to 70	Up to 80
Mission types	SAR Disaster management Law Enforcement Surveillance Presence Counter Piracy		



Offshore Patrol Vessels Military

Patrol	1800	2200	2600
Length (m)	83.0	91.2	98.0
Beam (m)	13.7	14.0	14.6
Draught (m)	3.9	4.0	4
Displacement (t)	1900	2200	2600
Speed (kn)	20-22	22-25	22-25
Range (nm)	4000	4000	5000
RHIBs	2x 8.5 m	1x 11.25 1x 6.5	1x 11.25 1x 6.5
HELO	1x med. weight + hangar	1x med. weight + hangar	1x med. weight + hangar
Accommodation	Up to 80	Up to 100	Up to 120
Mission types	SAR Disaster management Law Enforcement Surveillance Presence Counter Piracy HADR ASuW		

MISSION READY

Multi-mission deployment

One of the essential capabilities required by Law Enforcement agencies is that they can stop and board a vessel. Damen is able to integrate sensors, mission systems and weapons from a variety of suppliers or accept them as Government Furnished Equipment. You choose your preferred solutions. For boarding, a RHIB mounted on a slipway has become the preferred option and is a standard fit on OPVs and IPVs.

Improved situational awareness

» **Multi Mission Bridge**

The Bridge adjoins the Command & Control Centre (C&C Centre), ensuring easy and fast communication. This combination is known as our Multi Mission Bridge. The two spaces are separated by a sliding wall. During a mission the wall can be lowered, improving situational awareness in the C&C Centre.

Mission modules easily added

» **Multi Mission Bay**

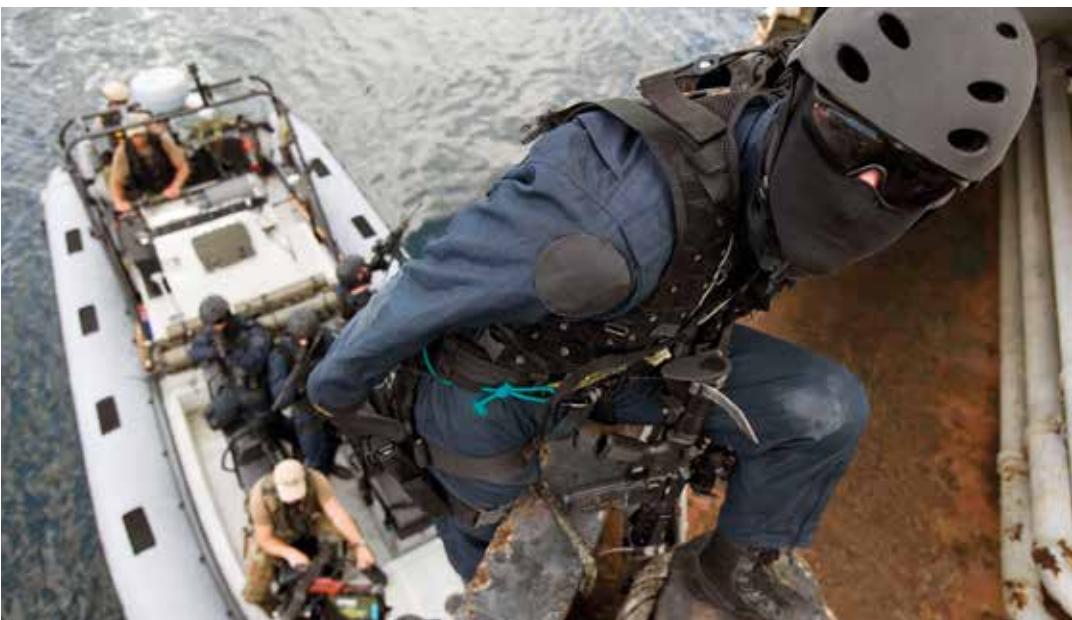
“Take what you need and leave the unnecessary.” This approach makes the OPV versatile and mission

focused. Mission modules (dedicated containers) containing specialist equipment can be lifted into the Multi Mission Bay, to meet the needs of the next mission.

From UAVs to 11-tonne helicopters

» **Multi Mission Hangar**

Surveillance from the sky is essential for optimising situational awareness. The Multi Mission Hangar can house aircraft from an Unmanned Aerial Vehicle (UAV) such as the Boeing ScanEagle up to 11-tonne helicopters like the NH-90. Inside, the Multi Mission Hangar also has sufficient space to carry out maintenance activities.





INSHORE PATROL VESSELS

When speed is the key to success



Inshore Patrol Vessels are a cost effective solution for patrolling territorial waters and contiguous zones. Damen Inshore Patrol vessels are based on proven offshore platforms with excellent reliability and high speeds.



» **Sensor options are:**

- › (Air) surveillance radar
- › Navigation radar / WAIS
- › Fire control / CMS
- › Electronic surveillance

» **Communications options are:**

- › HF, VHF, UHF and SATCOM (data)

» **Effectors options are:**

- › Forward gun (20-76 mm)
- › Side gun (12.7-30 mm)
- › Remote Weapon station
- › Heavy Machine Guns
- › Missile launcher
- › Decoy launcher

» **Flexible payloads (mission containers) can provide:**

- › Diving gear
- › First aid
- › Laboratory
- › Mine countermeasures

Highlights

- Unrivalled seakeeping properties
- High top speed with several engine configurations
- Fit for wide range of (multi) mission operations
- Suitable for a wide range of military equipment
- ANEP regulation can be added
- High value for money



Inshore Patrol Vessels

Length o.a.	50 - 70 m
Beam mld.	9 - 11 m
Draught	3.3 - 4.0 m
Displacement	500 - 1300 t
Speed	up to 30+ kn
Accommodation	30 - 65 persons

The ideal maritime security tool

Offshore Patrol Vessels are perfectly adapted to operate continuously at sea well outside the exclusive Economic Zone. They represent the perfect solution for situational awareness and law enforcement.



The design allows for flexible payloads, enabling decision makers to react quickly to new scenarios (e.g. human assistance and disaster relief). The OPV Coast Guard is designed to be an adaptable and affordable addition to any fleet and they are commercially constructed according to civilian standards, outfitted with commercial off-the-shelf equipment (COTS).



Highlights

- Four engine configuration
- Two engine rooms (redundancy)
- High level of damage stability
- Provided with interrogation and detention area
- Multi-mission bay for mission containers
- Dedicated space for survivors
- Two fast RHIBs
- Helicopter deck for up to medium size helicopter
- Ready for operations in heavy seas
- Long range for extensive SAR operations
- Optional external fire-fighting system
- Choose from a range of communications and navigation systems



» Sensor options are:

- 2D Radar
- Electro-Optical (EO)
- Surveillance (360°)
- Navigation Radar Intercept Sensor (R-ESM)
- Electronic communications
- Support Measures

» Communications options are:

- HF, VHF, UHF and SATCOM (data)

» Effectors options are:

- Gun (20-58mm)
- Remote Weapon Stations
- Heavy Machine Guns

» Flexible payloads (mission containers) can provide:

- Diving gear
- First aid
- Pollution control

Offshore Patrol Vessels Coast Guard

Length o.a.	72 - 93 m
Beam mld.	12 - 14 m
Draught	3.7 - 4.0 m
Displacement	1440 - 2500 t
Speed	up to 20+ kn
Accommodation	60 - 80 persons

OFFSHORE PATROL VESSELS MILITARY

Flexible deployment



Offshore Patrol Vessels Military are modified Offshore Patrol Vessels for supporting navies in the task of homeland defense. The platform's signature has been further optimized. The sensor, communications and weapons fit has been upgraded and the damage repair capability has also been strengthened.



» **Sensor options are:**

- › 2/3D Radar
- › Electro-Optical (EO)
- › Surveillance (360°)
- › Navigation Radar Intercept Sensor (R-ESM)
- › Electronic communications
- › Support Measures

» **Communications options are:**

- › HF, VHF, UHF and SATCOM (data)

» **Effectors options are:**

- › Gun (20-76mm)
- › Remote Weapon Stations
- › Heavy Machine Guns
- › Surface to Surface Missiles

» **Flexible payloads (mission containers) can provide:**

- › Diving gear
- › First aid
- › Mine countermeasures

Highlights

- Four engine configuration
- Two engine rooms (redundancy)
- High level of damage stability
- Helicopter deck for up to medium size helicopter
- Helicopter hangar with ample space for UAVs
- Multi-mission bay for mission containers
- Dedicated space for embarked forces
- Two fast boarding RHIBs
- Ready for operations in heavy seas
- Long range for extensive surveillance operations
- Optional external fire-fighting system
- Prepared for the installation of surveillance and weapon systems



Offshore Patrol Vessels Military

Length o.a.	80 - 100 m
Beam mld.	13.7 - 14.6 m
Draught	3.75 - 4 m
Displacement	1900 - 2600 t
Speed	up to 25+ kn
Accommodation	80 - 120 persons

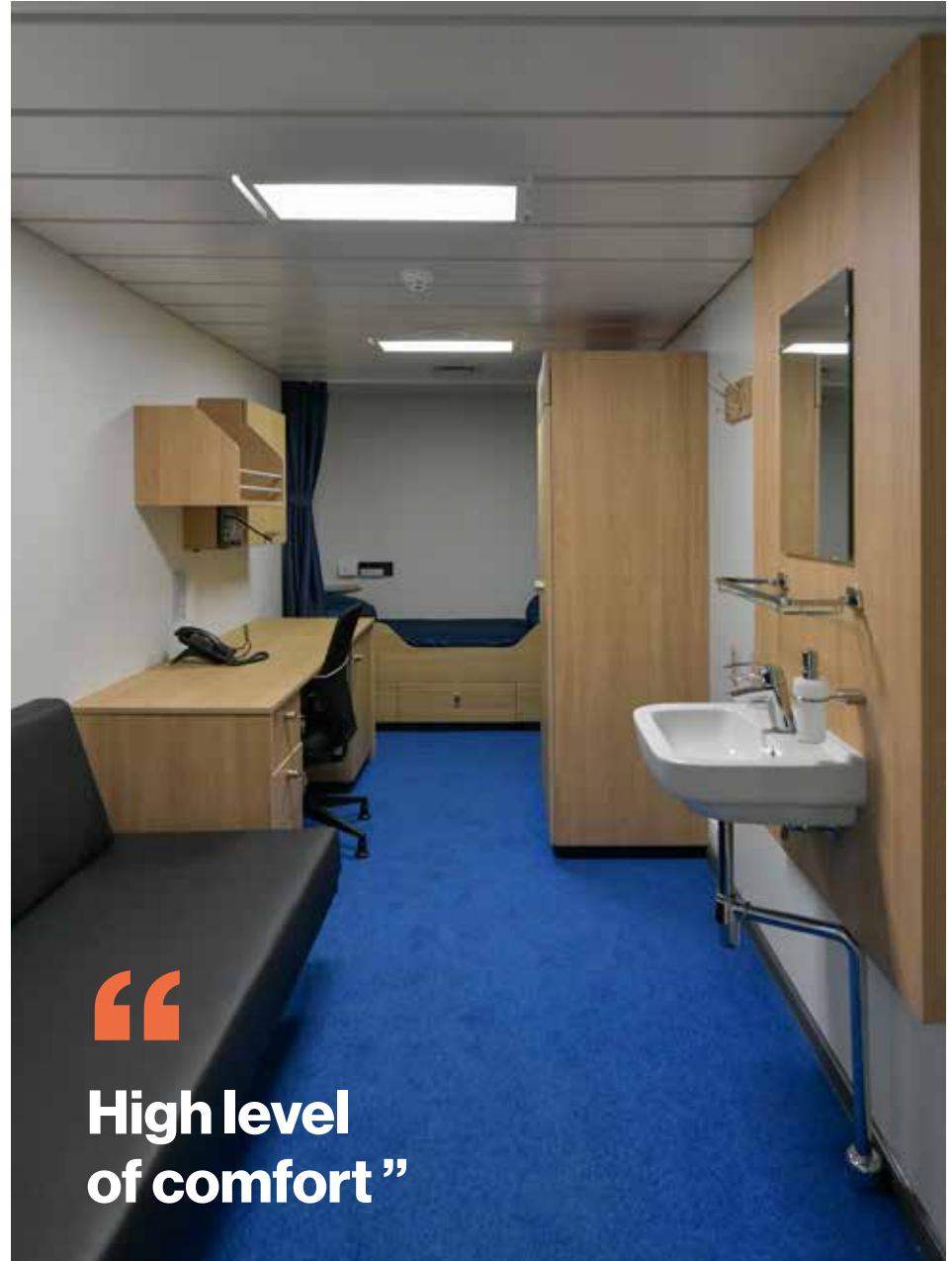
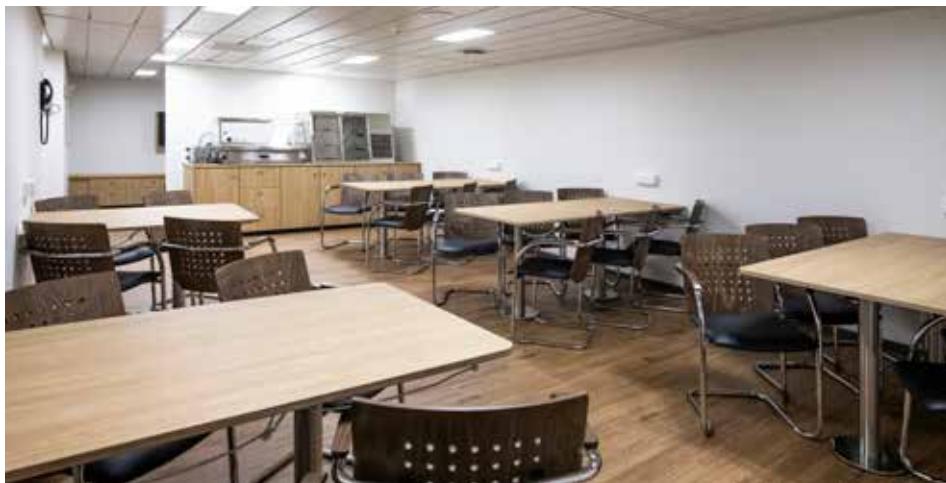


MODERN STANDARDS

Based on proven technology

For prolonged stays at sea the wellbeing of the crew is vital. Modern facilities (galley, recreational areas), as well as comfortable crew cabins, make the stay on board as pleasant as possible. Additionally the OPVs have superior seakeeping, even in rough seas.





**“High level
of comfort”**



Building on site

Damen Technical Cooperation enables you to build your Damen vessel locally, anywhere in the world. We provide you with a prefabricated shipbuilding kit and can, on request, combine this with expert assistance, training and backup.

By using standardised components it is possible to make a custom-built design while fulfilling specific local requirements. This cost-efficient concept can be applied to the full range of Damen vessels for a wide variety of marine operations.

One in five Damen vessels is built on-site through the Damen Technical Cooperation programme. In addition, clients can take the design-only option and have their vessel built by a shipyard of their choice.







Your mission is our goal

Keeping your assets operational, available and relevant throughout the lifecycle with predictable lifecycle costs is our goal. We achieve this by delivering a comprehensive package of digital and smart solutions.

Damen's service portfolio contains both local one-stop-shop support and transfer of technology programmes that enable our customers to establish their strategic autonomy. We use the latest technologies to support our customers in the modernisation of their assets. With innovative software solutions such as computerised maintenance management systems, interactive electronic publications, and the use of extended reality simulated environments, we digitalise asset management.

» Key features

- » Improved fleet readiness
- » Controlled lifecycle costs
- » Operational relevance of your assets
- » Strategic autonomy
- » Digital support environment
- » Local technical support
- » Global spares availability



Towards a sustainable future

Damen works proactively to decrease the environmental footprint of its vessels in several ways.

» Operational performance

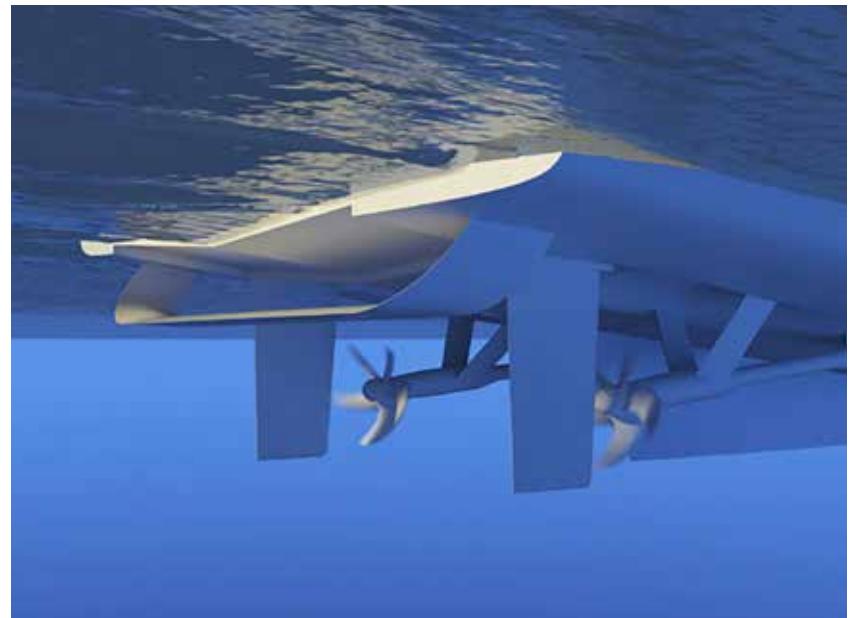
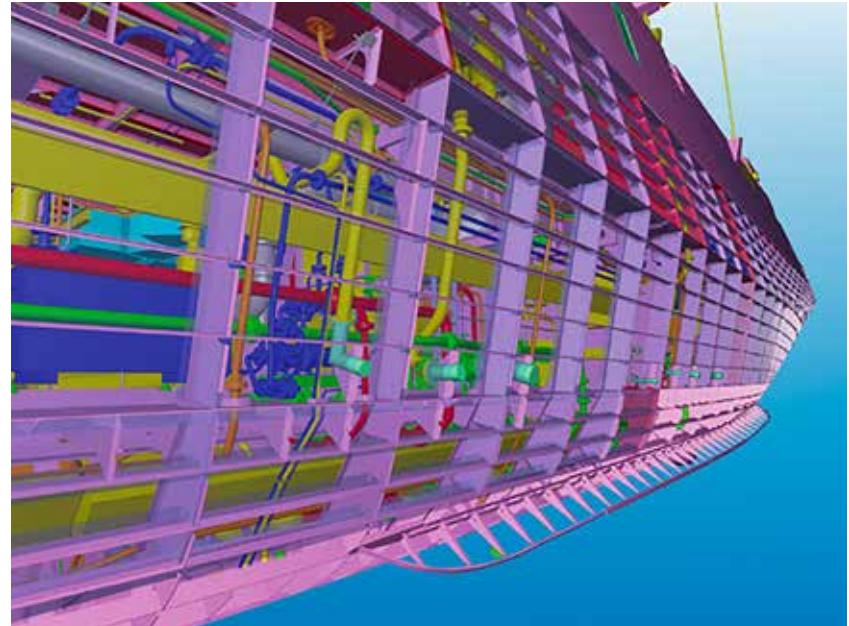
In order to reduce the fuel consumption of our vessels, the following upgrades will be implemented on the next generation of products:

- » Multi-objective optimisation energy management strategy
- » Prototype of the Hull Vane design
- » Adaptive pitch control
- » Hull optimisation based on actual operational weather conditions and sea states
- » Several efficiency improvements to the HVAC and E&A systems through component selection and system design

» R&D

In cooperation with strategic partners in the maritime production chain and research institutes, we participate in numerous research programmes aiming to lower CO₂ emissions and reduce dependence on fossil fuels. These have the following themes:

- » Alternative fuels
- » Alternative (hybrid) power and energy storage
- » System optimisation and energy management
- » Exhaust gas treatment systems





REFERENCES

We take pride in our track record

For more than 90 years, Damen has worked with clients around the globe on the design, engineering and construction of Offshore Patrol Vessels, as well as Naval Auxiliaries, Landing Platform Docks, (Sail) Training Vessels and Hydrographic Survey Vessels.

Based on this extensive experience, Damen also offers governments worldwide a broad range of vessels, ranging from 7 to more than 200 meters. Although built according to a standardized concept, Offshore Patrol

Vessels are tailored to each clients' unique operational requirements and can be equipped for multiple missions. With every vessel we build, we guarantee quality standards based on proven technologies.





Damen Shipyards

OCEANS OF POSSIBILITIES

Damen Shipyards Group has been in operation for over ninety years and offers maritime solutions worldwide, through design, construction, conversion and repair of ships and ship components.

By integrating systems we create innovative, high quality platforms which provide our customers with maximum added value.

Our core values are fellowship, craftsmanship, entrepreneurship and stewardship. Our goal is to become the world's most sustainable shipbuilder, via digitalisation, standardisation and serial construction of our vessels.

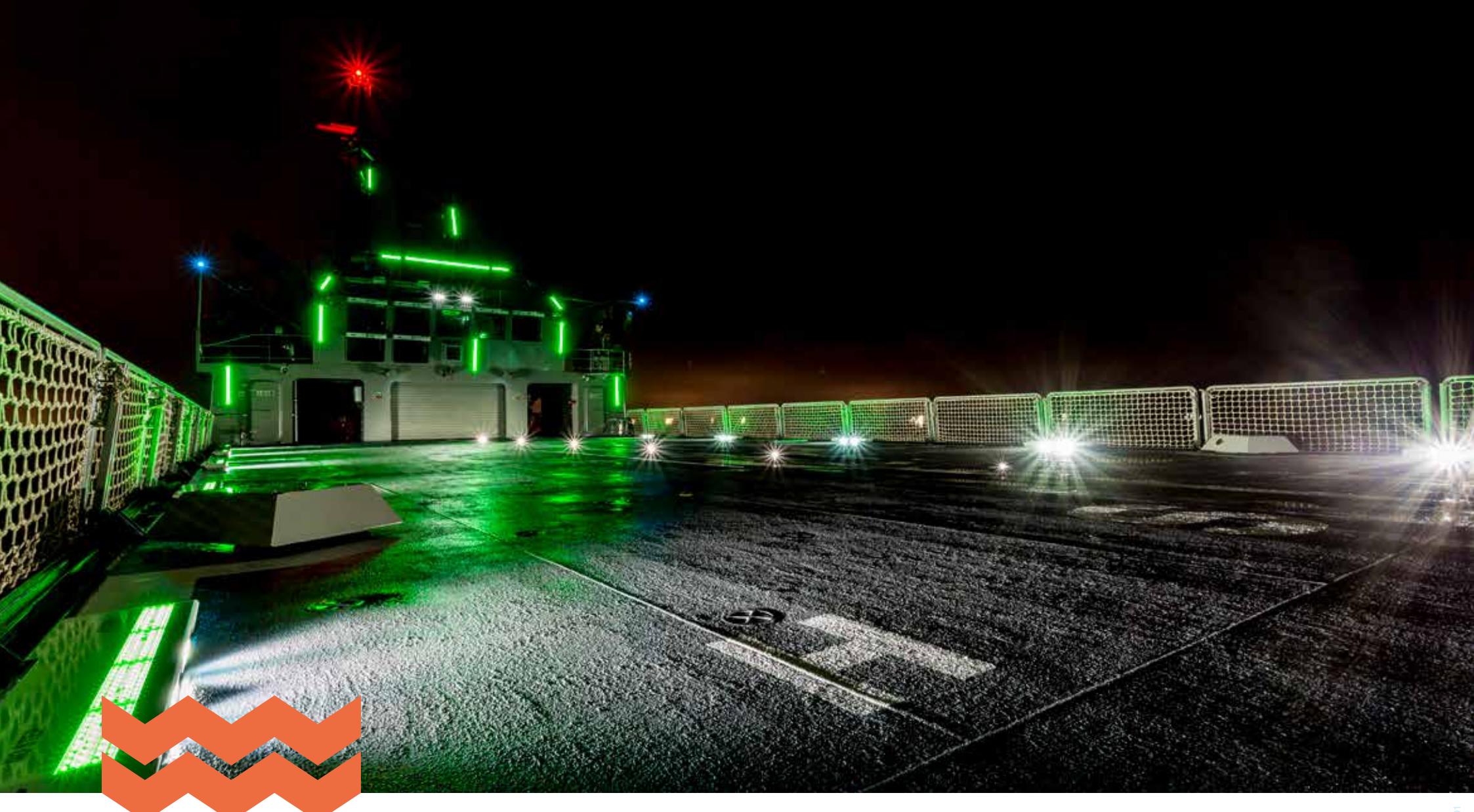
Damen operates 35 shipyards and 20 other companies in 20 countries, supported by a worldwide sales and service network. Damen Shipyards Group offers direct employment to more than 12,000 people.

Colophon

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info@damen.com



DAMEN



Damen Shipyards Group
Avelingen-West 20
4202 MS Gorinchem

P.O. Box 1
4200 AA Gorinchem
The Netherlands

+31 (0)183 63 99 22
info@damen.com

