Fugro’s Blue Shadow incorporates industry-leading experience to establish the next generation of uncrewed surface vehicles (USVs) for hydrographic and geophysical surveys. Specifically engineered for more efficient, flexible and safer operations in both coastal and offshore environments, the Blue Shadow exceeds all national hydrographic surveying exclusive order standards.

**HIGH EFFICIENCY**
Fugro’s Blue Shadow brings more efficiency to hydrographic and geophysical surveying. Its compact, wave-piercing design and structural stability ensure greater weather tolerance, enabling the vehicle to operate in high-sea conditions for multiple days without interruption. Combined with Fugro’s smart data management software, the speed and endurance of the Blue Shadow reduces risk and accelerates project delivery.

**MAXIMUM FLEXIBILITY**
The Blue Shadow is equipped with a state-of-the-art EM2040-4 Mk II and an AML moving vessel profiler and is designed to operate in full autonomy, semi-autonomy or by remote control. It can be configured with other payloads to meet different operational needs and is suited to operate as a force multiplier with a mother vessel (with one or more USVs) to increase data collection efficiency.

**SUSTAINABLE AND SAFER OPERATIONS**
As an uncrewed vehicle, Blue Shadow eliminates the risks associated with human involvement in offshore surveys. It provides sustainable operations through significantly reduced fuel consumption and carbon footprint.

**BENEFITS**
- Faster collection of high-quality data using its wave piercing design and gondola mounted sensors
- Reduced HSSE exposure through minimised offshore staffing
- Sustainable operations with significantly reduced fuel consumption and carbon footprint
FUGRO BLUE SHADOW

Technical Specifications

**General**

<table>
<thead>
<tr>
<th>Name</th>
<th>Blue Shadow</th>
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<tbody>
<tr>
<td>Designer/builder</td>
<td>Fugro and L3 Technologies</td>
</tr>
<tr>
<td>Owner</td>
<td>Fugro</td>
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</tbody>
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**Dimensions**

- **LOA**: 8.85 m
- **Beam**: 1.77 m
- **Draft**: 1.21/2.00 m (Gondola up/down)

**Propulsion**

- **Engine**: 80 hp diesel engine
- **Cruising/survey speed**: 8 knots/variable as required

**Control and navigation**

- Fully autonomous, semi-autonomous, direct remote-control options
- **DGPS**: Fugro G4+
- **Gyro**: Seapath 380-R3

**Safety**

- **Radar**: Simrad
- **Additional**: Emergency anchor

**Survey equipment**

- **DGPS positioning**: Fugro G4+
- **Navigation package**: Fugro Starfix Suite
- **Motion reference unit**: MGC-R3 (within Seapath 380-R3)
- **Multi Beam Echo Sounder (MBES)**: Kongsberg EM2040-04 Mk II
- **Echo sounder (SBES)**: Teledyne Echotrac E20
- **Sound velocity profiler**: AML MVP30
- **Sound velocity (at head)**: Valeport UV-SVP

**FEATURES**

- Wave-piercing hull design: improved sea-keeping and a stable configuration for high-quality data acquisition
- Gondola-mounted sensors: best possible hydrographic data acquisition, as low acoustic interference means improved data quality
- Robust hull design: fenders in critical locations reduces downtime risk from hull damage
- Maximised situational awareness: radar, weather station and 360° camera (including infrared)
- Vessel-control software with autonomous obstacle avoidance capability and radar repeater
- Robust and simple launch-and-recovery solution, both from single point as well as via A-frame.