

Towed systems are a good alternative to ROVs if inspections over extended areas have to be done. The efficiency of these systems is due to the tow velocity behind a boat in relation to self-propelled systems like ROVs. Nowadays towed systems are equipped with a vast variety of sensors and instruments, so that they could be platforms for high end technologies.

Combined with underwater positioning systems, scanning sonars etc., towed systems represent a valid solution for scientist, marine harvesting

companies, consultants and service companies, just to name a few.

This platform gives the possibility to be adapted to the needs of each client, since Mariscope's most modern underwater robotic technology and electronics is used. These towed vehicles have the possibility to be equipped, among others, with the following instruments:

- \* Underwater dimensional system.

- \* Imaging sonars.
- \* High output illumination systems.
- \* Altimeters.
- \* Oil in water sensors.
- \* Oceanographic sensors.
- \* Side scan sonars.
- \* Methane and H<sub>2</sub>S Sensors.
- \* Full HD / 4K cameras.

### Highly Reliable Technology

## Observer III Features

Frame:	Stainless Steel AISI 316L.	Cable: 100 - 1000 Multi-polar umbilical with 2000 kg tensile strength. Outer Jacket of high density Polyethylene or PUR, abrasion resistant.
Resolution:	Depending on the type of camera.	Console: The console contains a 19" LED display and a 2TB hard disk recording system (500 hours of video recording). It also includes the power supply, camera and light controls and the controls of peripherals.
Camera:	Fixed focus or zoom cameras. The cameras are chosen according to the client's needs. The same is valid for the type of lenses.	EPOD: All control electronics in separate stainless steel housing.
Lighting:	High output LED Clusters in stainless steel or aluminium housings.	Dimensions: Each system is custom built and dimensions are defined according to the client's needs.
Sensibility:	Up to 10 <sup>-4</sup> lux	
Cable reel:	Plastic or stainless steel cable reel with slip ring option	



designed,  
engineered &  
made in Germany



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Mariscope Ingeniería

The Mini Observer is a compact and economic system that includes the following components:

- \* High resolution camera with variable zoom and focus or fixed focus lens.
- \* High output LED Illumination.
- \* Digital compass and depth sensor with on-screen display.

This system is used basically for rapid inspections carried out from small boats. It is ideal for the use even from semi rigid boats or zodiacs.

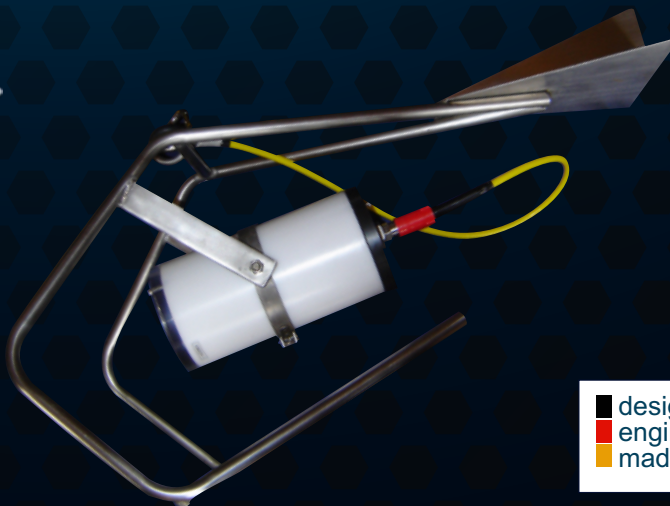
High end cameras and illumination systems result in high quality underwater images.

The low weight of the unit, including the umbilical cable, gives the opportunity to carry it in every plane, even in very small crafts. The main application is in coastal areas, aquaculture, offshore wind farms and others.

### Mini observer Features

Frame:	Stainless Steel AISI 316L.	Cable reel:	Plastic or stainless steel cable reel, option of slip rings
Resolution:	Depending on the type of camera.	Sensibility:	Up to $10^{-4}$ lux
Camera:	Fixed focus or zoom cameras. The cameras are chosen according to the client's needs. The same is valid for the type of lenses. Camera housing made of DELRIN.		
Lighting:	High output LEDs in stainless steel or aluminium housings.		
Cable:	Multi-polar umbilical with 500 kg tensile strength. Outer Jacket of PUR		
		Console: Different types of surface consoles. The console can include professional screen, power supply, HDD recorder, light dimming and camera control functions.	

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**Technology**



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