

2D and 3D real time images of cod fishes in a tank

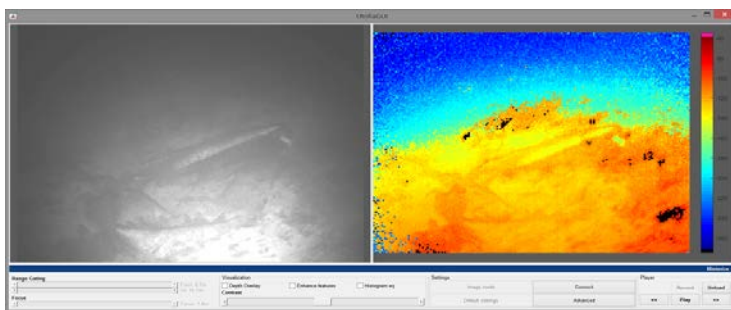
The revolutionary camera for 3D underwater vision

UTOFIA is a compact underwater camera with **integrated laser illumination** that provides **visual images and high-resolution 3D data**. It uses **range-gated imaging technology** to capture **clearer subsea images** by reducing the backscattering effect from suspended matter. The integrated illumination allows operation independent of light conditions, including **complete darkness**, with no deterioration in performance. **Real-time visualisation** enables easy interpretation of images including spatial information.

High resolution real-time 3D images

Key application areas:

- Biomass estimation
- Fish behaviour
- Navigation
- Obstacle avoidance
- Seafloor inspection
- Inspection, maintenance and repair



UTOFIA Camera user interface (2D image on left, 3D image on right)



UTOFIA camera with supporting power box and cable

Main features

Depth rating	300 m standard (1 000 m optional)
Dimensions	Length 370 mm excl connectors, Diameter 155 mm
Weight	In air: 9 kg / In water: < 2 kg

Power and communication

Voltage	22-28 V DC. Other voltages on demand, cable voltage drop must be compensated. Topside electronics box included for running from 220V.
Power	200 W
Data	Gigabit Ethernet. 100 Mbit optional with reduced resolution/framerate. RS485 for monitoring (not necessary with topside electronics box).
Connector	Impulse MCBH-16 (16 pins, wet-mateable)
Umbilical	Hybrid: GigE, RS485, power up to 70 meter. Pig tail with connector: 1.2 m for ROV connection.

Imaging

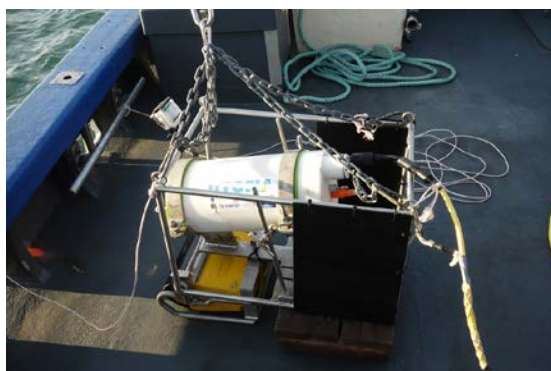
Laser	3 mJ at 1 kHz, active Q-switch. Eye safety: 3R class
Camera	Range gated 3D camera.
Frame rate	10-20 Hz (tuneable)
Imaging range	3-4 attenuation lengths
Resolution	1280x1024 px (maximum). 960x512 (default).
Camera lens	10.5/17.5 mm focal length, f/# 0.95 + optional sunlight filter
Field of View	70° diagonal
Temperature control	Active water cooling. Water temperature: -5° to 25° C. 30° C optional.

Housing materials

Front/rear flanges	Aluminum
Body	POM (Acetal)
Windows	PMMA

Packaging and documentation

Transport	All in one transport case (Peli type) with wheels and handle, total weight < 20kg (camera, surface console and whip cable)
Maintenance	None except flushing/cleaning with fresh water after use.
Documentation	Operator manual in paper and electronic version
Warranty	1 year parts and labor excluding transport cost



UTOFIA on
towed sledge



UTOFIA on
Small USV

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