

Oqus Underwater

Motion capture camera for advanced underwater measurements



Qualisys Oqus Underwater is a motion capture camera that is designed to operate underwater. It consists of a Qualisys Oqus camera enclosed in a waterproof housing. The housing is equipped with a strobe built specifically for underwater use.

Oqus Underwater is suitable for a wide range of applications, such as ship design, naval research, fishing industry and sports science.

Example of studies

- Human movements, sport, rehabilitation & animation
- Movement of underwater vessels
- Simulated extreme sea & weather situations indoor
- Scale models of oil platform, attachment chains or gas/oil pipelines emerging out of the water.

FEATURES

- High speed motion capture
- Camera protected, IP68 / IP69K / NEMA 6P. Pressure tested to 40 m depth
- High power LED:s with royal blue visible strobe
- Sensor resolution: 0.3, 1.3, 4 and 12 megapixels
- Up to 20 meters range
- Relative accuracy up to +/- 2mm at 10 m distance
- Easily synchronised with external systems

Oqus-powered

Oqus Underwater is designed to be the world's most accurate optical motion capture camera for underwater use. It is also designed for mobility, robustness and trouble-free operation. In order to match the needs of different applications; the Oqus camera is available in four series, the Oqus 1, 3 5, and 7 series.



Integration

Communication with the host computer is done over ethernet, controlled by a single laptop or desktop PC. Unlike a land-based system, instead of daisy chaining, the cameras are connected to a connection unit that acts as a network switch. The cameras are controlled through the Qualisys Track Manager software (QTM) and can be synchronised with external hardware just like any other Oqus-powered motion capture system. Naturally, QTM takes full advantage of all the features of the camera, such as active filtering and the ability to stream 6DOF-data to 3rd-party applications in real-time.

High-speed video

Oqus Underwater cameras can be equipped with high-speed video just like any other Oqus camera. Since it can be calibrated with the motion capture system, it also features video with 3D overlay. Combining Under- & over water captures Qualisys Track Manager makes it possible to merge together data from a land-based and an underwater system. This means that objects can be tracked on both sides of the water surface in a single capture.

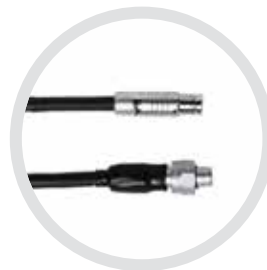
Measurement volume

An Oqus Underwater camera is typically able to measure markers up to a distance of 15-20 meters depending on the water quality and the type of marker used. Measurement volume is also directly dependent on the number of cameras used.



Strobe

12 high power royal blue LED:s. Thermally connected to the water for efficient cooling.



Cabling

Custom IP68 classified cable that carries data, power and control signals in a single cable.

Camera/housing

- **Camera body:** Hard anodized aluminium
- **Camera size:** 280×225×275mm (11.0×8.8×10.9 inches)
- **Weight:** 8.4 kg (18.5 lbs)
- **Camera protection level:** IP68
- **Standard lens:** 40° FOV (options available)
- **Operating temperature:** 0–35 °C
- **Pressure tested to:** 5 bar (40m depth)