



# 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.

## Product Information

### KEY FEATURES

- High speed motion capture
- Camera protected, IP68 / IP69K / NEMA 6P. Pressure tested to 40m 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 meters distance
- Easily synchronised with external systems

### 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.





**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)



**Strobe**  
 12 high power royal blue LEDs.  
 Thermally connected to the water for  
 efficient cooling.



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

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**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 the 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.



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