



Digital Stills and 4K/HD Solution

featuring **Rayfin**

Primary payload for digital stills and 4K/HD clips

For anomaly identification, clip generation and photogrammetry

Key Features

- 21MP digital stills (JPEG and RAW) with LED strobe synchronization
- 4K and HD video clips stored to 512GB solid state memory
- RTSP Ethernet, 1080p@30fps, low latency, full HD video streaming
- Ethernet 10/100/1000 control and media download
- NTP time server synchronization
- Real-time **image enhancement** (for water conditions with poor visibility)

Harsh Conditions. Clearest Images.

In partnership with OceanGate Inc., SubC Imaging was selected to supply two cameras for an expedition to the Titanic shipwreck site to capture the first 4K images and video of the iconic wreck.



Coming soon

- Legacy mode: Serial RS232/RS485 + composite with offline download
- Inspection Workflow: Data time-stamped events with report generation
- Built-in secure **VSAT video streaming** service

See our **YouTube** tutorial series

Contact team@subcimaging.com for pricing and rental info



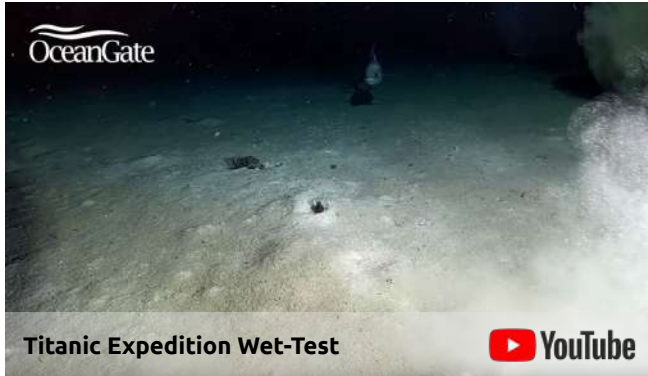
Rayfin camera, LED strobe/lamp(s) and parallel lasers

For more information visit <https://www.subcimaging.com/rov-inspection>

Updated: 2020-02-12

Digital Stills, 4K and HD Video Recording

Many examples of successful projects



Applications

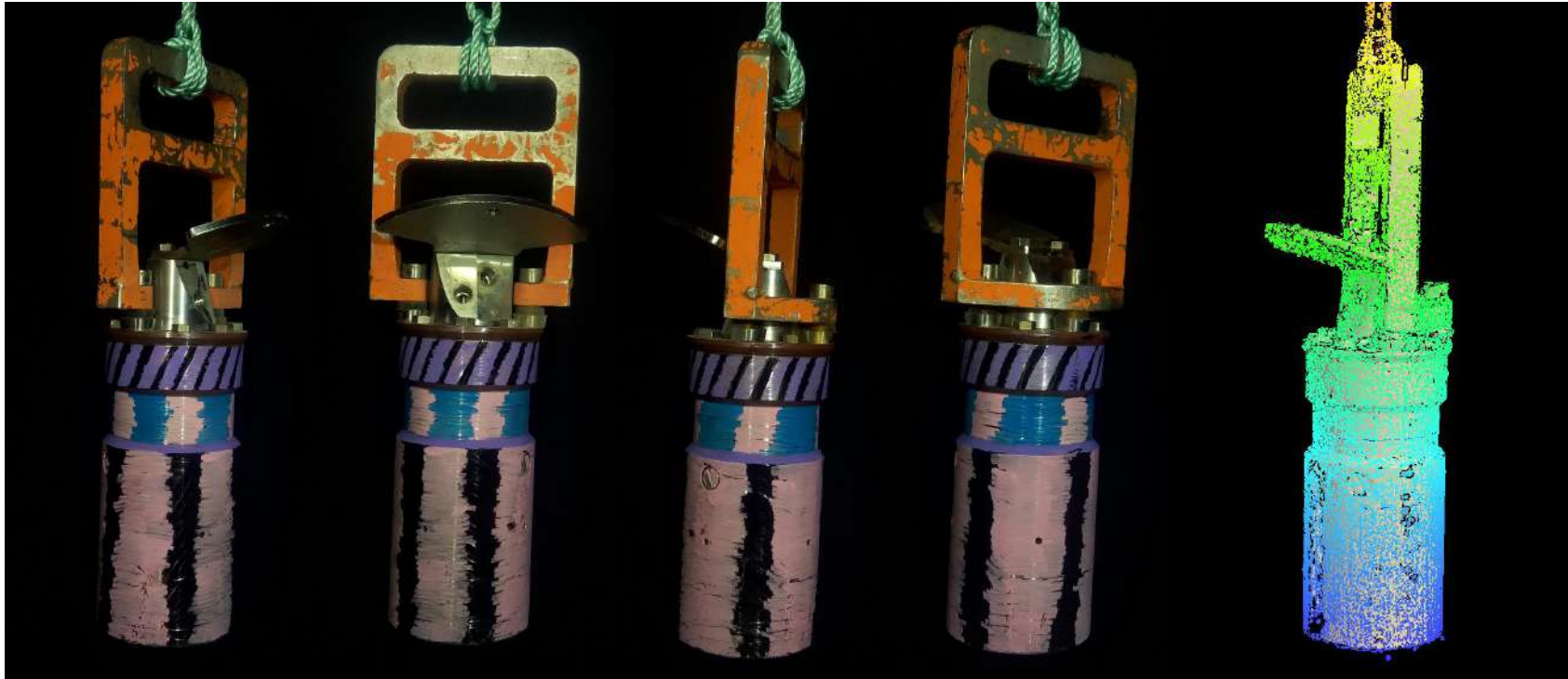
- Workclass ROV science payload
- Ocean observatories
- Aquaculture monitoring



Digital stills for photogrammetry

High resolution and high image sharpness

Take multiple overlapping digital stills (raw and JPEG) that can be processed into 3D models





Equipment Specifications

APPROVED: 2019-12-16
Software: AR
Electrical: CC
Mechanical: BL

Updated:
2019-12-19

Rayfin HDE Camera

Sensor properties

Image size: 21MP (5344 x 4008)
Video resolutions: 4K UHD, 1080 HD, SD
Max Continuous Still Rate: 3Hz
Recording codecs: H.265(HEVC), H.264
Streaming codec: H.264
Internal recording capacity: 512 GB
Zoom: 21MP sensor zoom (5x optical equivalent)
Live Video: HD Ethernet and SD composite

Electronics

Protection: Short circuit, UV-OV-RV, ESD, OT
Control: Ethernet, Serial RS232 and RS485
Power(W): 7.5(idle), 8.5(recording), 13.5(peak)
Voltage: 16.5 - 32.5 Vdc

Mechanical

Materials: Sapphire, grade 5 Titanium
Weight: 1.6Kg in water, 3.2Kg in air
Depth Rating: 6000m

LiquidOptics (LO)

Water corrected design inspired by Ivanoff
Diagonal FOV: 70° minimum
Sharpness: high MTF50
Distortion: low
Chromatic Aberration: low

Aquorea LED Strobe/Lamp

LED properties

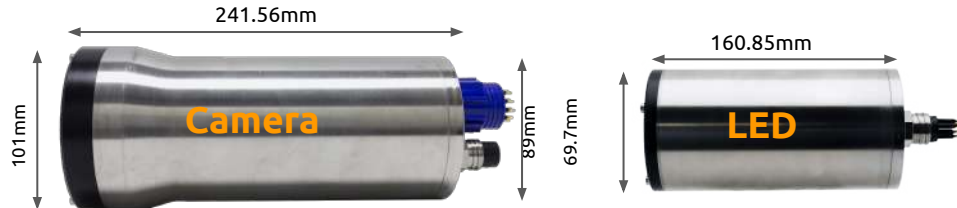
Lamp Output: up to 8500 lumens w/ Rayfin
Strobe Output: 32000+ lumens
Color: 5000K
Beam Angle: 80° (circular)

Electronics

Protection: Short circuit, UV-OV-RV, ESD, OT
Thermal Protection: Auto dim/shutoff
Control: Rayfin Aux port (TTL & RS485)
Power: 48W
Voltage: 18 - 32.5 Vdc

Mechanical

Materials: Sapphire, grade 5 Titanium
Weight: 0.9Kg in water, 1.5Kg in air
Depth Rating: 6000m



MantaRay Parallel Lasers

Laser properties

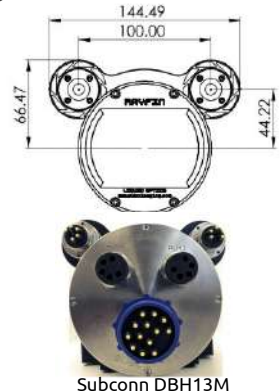
Parallelism: 100mm ±10mm @ 5m distance
Output Power: >5mW
Wavelength: 532nm (green)

Electronics

Protection: Short circuit, OV-RV, ESD
Power: 7.2W
Voltage: 7 - 32.5 Vdc
Control: Rayfin Aux port (TTL & RS485)

Mechanical

Materials: Sapphire, grade 5 Titanium
Weight: 0.4Kg in water, 0.7Kg in air
Depth Rating: 6000m





Ready on delivery

Packaging and Quality Control

Included with your shipment:

1. Rayfin camera.
2. Aquorea LED with 3m cable to plug into camera.
3. MantaRay parallel lasers with y-splice cable to plug into camera, calibrated delrin mount and 2x Titanium hose clamps for attachment to the camera.
4. Windows 7 and 10 compatible Rayfin control software.
5. Documentation: complete QA checklist, pressure test certificates, packing list, datasheets and quick start guide. (under the lid foam)
6. USB stick with software, manuals and QC documentation.
7. High Pressure dummy plugs for camera Aux0 & Aux1 bulkheads.
8. Shipping case with designed foam insert.
9. Test whip for connecting to the camera and downloading offline.
10. AC cable (matching your region) and AC-DC power supply (24VDC).
11. Cat5e Ethernet cable.
12. Rubber lens caps and connector caps for protection.

** Windows PC or tablet required to operate the camera*



Rayfin control software