In response to growing demand for rapid response using highly portable and adaptable methods for measuring water quality and oil pollution – particularly in conjunction with the impact of oil spills on marine habitats – VideoRay and Turner Designs integrated the industry-standard Turner Designs C3 Submersible Fluorometer with the world's most popular observation Remotely Operated Vehicle.

The integration of the VideoRay Pro 4 Submersible Remotely Operated Vehicle and Turner Designs C3 Fluorometer gives operators and researchers an important new tool for oil spill analysis and other remote sensing applications in marine environments.

This FAQ provides more information about the integration of these systems, how to acquire them and how to get product support.


## What products make up the integrated package?

The VideoRay Pro 4 submersible system that includes the vehicle, control panel and umbilical that connects the vehicle to the surface. (For details, see: http://www.videoray.com/products/58-p4-sci-300base)

The Turner Designs C3 Fluorometer, that incorporates up to 3 optical sensors, with pigtail cable (p/n 2200-170). (For details, see: http://www.turnerdesigns.com/t2/instruments/C3.html)

An Integration Kit that provides the mounting hardware and interface components. (For details, see: http://www.videoray.com/accessories/47-c3-fluorometer-integration-kit)


## What model VideoRay systems will work with the C3?
Only the Pro 4 is supported.  All of the Pro 4 configurations are compatible with the C3.


## What is the depth rating of the system?

| | |
|---|---|
| Pro 4 Vehicle | 300 meters (1,000 feet) |
| C3 Fluorometer | 600 meters (2,000 feet) |


## How big are these systems?

| | |
|---|---|
| Pro 4 Vehicle | 36 x 27 x 21 cm (14.2 x 11 x 8.5 inches) (L x W x H) 6.1 kg (13.5 lbs) |
| C3 Fluorometer | 23 x 10 cm (9.1 x 3.9 inches) (L x Dia) 1.64 kg (3.6 lbs) |
| Combined System 8.02 kg (17.6 lbs) | 36 x 27 x 31 cm (14.2 x 11 x 12.2 inches) (L x W x H) |


## I already own a C3.  Can I integrate it with a VideoRay ROV?
Yes, you will need to purchase a VideoRay Pro 4 and C3 Integration Kit.

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www.turnerdesigns.com

**VideoRay**
www.videoray.com

### I already own a VideoRay ROV.  Can I integrate it with a C3?

Yes, as long as the VideoRay you own is a Pro 4.  You will need to purchase a C3 with desired sensors and a C3 Integration Kit.

### How is the C3 data displayed or recorded during the operation?

C3 data is stored internally and can be streamed real time to a terminal window and recorded to a file using VideoRay's topside computer.  The C3 data is time-stamped and includes the depth and temperature.  Using the time-stamp, the C3 data can be cross-referenced to the VideoRay video if the VideoRay's text overlay is enabled and the video is recorded.  The data can also be geo-referenced with positioning system data from optional position tracking systems.

### Does the C3 need to be permanently installed on the VideoRay ROV?

The C3 can be installed (or removed) easily in the field by removing and then reinstalling 4 screws and attaching (or removing) the interface cable.

### What is the maximum length of deployment of the VideoRay Pro 4 / Turner Designs C3?

Deployment length is equal to the maximum for a Pro 4, which is approximately 600 meters (2,000 feet).  the maximum depth is limited to the VideoRay Pro 4 rating of 300 meter (1,000 feet), but you can deploy farther horizontally.

### The C3 can only transmit RS-232 up to 10 meters without using boosters.  Are these boosters necessary?

Boosters are not necessary.  The interface cable between the C3 and VideoRay that is included as part of the C3 Integration Kit includes a VideoRay PAM (Protocol Adapter Multiplexer).  The PAM converts the RS-232 from the C3 to RS-485, VideoRay's standard data protocol, which can transmit to the maximum VideoRay deployment distance.

### Is training available?

Yes, training is available for VideoRay operators and technicians.

### Who should I contact to purchase a VideoRay system?

VideoRay
http://www.videoray.com
info@videoray.com
+1 610-458-3000 Option 2

### Who should I contact to purchase the C3 Fluorometer?

Turner Designs
http://www.turnerdesigns.com
Tom Brumett
sales@turnerdesigns.com
+1 408-749-0994 x 146
877-316-8049  x 146   (Toll Free USA)

### Who should I contact to purchase the VideoRay Pro 4 / Turner Designs C3 Integration Kit?

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