

# UviLux

## In-situ Miniature UV Fluorimeter



### APPLICATIONS

- In-situ hydrocarbon detection / monitoring
- Water mass indicator studies (Gelbstoff)
- Pipeline leak detection
- Pollution monitoring
- Designed for use on profiling, towed, moored or ROV deployments
- Biogeochemical oceanography



### FEATURES

- Small, low cost fluorimeter
- Robust miniature Optics
- High sensitivity
- Low turbidity breakthrough
- Ground loop isolation to facilitate system integration
- Acetal Housing for corrosion inhibition
- Low power consumption
- Digital output in engineering units
- High rejection of ambient daylight
- Stable zero with low temperature coefficient
- Very low noise & large dynamic range with ultra-linear signal processing
- Accepts 6 : 1 supply voltage input

# UviLux

## INSTRUMENT DESCRIPTION

The UviLux is a submersible fluorimeter to monitor the concentration of hydrocarbons (360nm) or Gelbstoff (450nm) in a wide range of oceanographic applications. In support of this, it has been designed to be deployed from submersible vehicles, moored or profiling systems. This robust, compact, lightweight instrument provides significant improvements in power consumption over its predecessor, the UV AQUA<sup>tracka</sup>. The instrument is easy to use and gives accurate and repeatable measurements.

The UviLux pressure housing is manufactured in acetal for long life. It utilizes a high power LED light source and a low temperature coefficient photodiode which feeds a low noise preamp that, together with phase sensitive detection, gives an overall electronic noise figure close to the theoretical minimum possible. Data output is factory set as linear analogue. The performance of UviLux has a high degree of insensitivity to water temperature changes due to the low tempco of the new generation SQW LEDs, the selected photodiode used and the careful circuit design.

The sophisticated design of the electronic signal processing, combined with cowl design principles of its predecessor, the UV AQUA<sup>tracka</sup> incorporated in the pressure housing, enables it to operate successfully in high levels of ambient light. Hence, using UviLux means there is generally no requirement to pump seawater through a dark observing chamber, thus obviating the need for water flow corrections - not to mention the cost, inconvenience and power drain of a pump. For deck & laboratory applications, a flow through manifold is available.

The ease of use and installation is further enhanced by the provision of galvanic isolation between the power 0 volt and signal 0 volt lines within UviLux, thereby interrupting possible 'ground loops'. The high efficiency, proprietary design DC converter can also handle the unusually wide range of supply voltages between 7V and 40V without significant change in a power drain of 0.7W. The output will drive almost any sort of measuring or data logging device. It should be noted that the output of UviLux is linearly related to concentration and not logarithmically as might be expected from its UV AQUA<sup>tracka</sup> origins.

## SPECIFICATION

### Physical

Size:	70mm dia x 149mm
Weight in air:	0.7 kg
Weight in water:	0.15 kg
Pressure Housing:	Acetal
Depth rating:	600 metres
Connector:	Subcon MCBH4M

### Optical

	HYDROCARBON (360nm)		GELBSTOFF/CDOM (450nm)	
	Excitation	Emission	Excitation	Emission
Peak Wavelength:	250nm	360nm	250nm	450nm

### Performance

	HYDROCARBON (360nm)	GELBSTOFF/ CDOM (450nm)
Range:	0 to 10 µg/l Carbazole	0 to 10 µg/l Perylene
Resolution:	0.01 µg/l Carbazole or 1% of reading	0.01 µg/l Perylene or 1% of reading

### Environmental

Operating Temperature:	-2 deg C to +40 deg C
Storage Temperature:	-40 deg C to +70 deg C

**Note:** The UviLux is provided with a 3 foot pigtail, locking sleeve Handbook and Calibration Certificate.

**Options:** Deck units, calibration equipment.



**Chelsea  
Technologies  
Group Ltd**

55 Central Avenue  
West Molesey  
Surrey KT8 2OZ  
United Kingdom  
Tel: +44 (0)20 8481 9000  
Fax: +44 (0)20 8941 9319  
sales@chelsea.co.uk  
www.chelsea.co.uk