MINItracka II

In-situ Miniature Fluorimeter

APPLICATIONS

- In-situ chlorophyll & fluorophor studies
- Reservoir monitoring
- Dye tracing
- Wake studies
- Profiling on CTDs.
- Nephelometric particulate studies/ gravimetric analysis
- Process control (industrial feed water intakes)
- Designed for towed, profiled, moored or ROV deployment.

FEATURES

- Small, low cost fluorimeter
- Low power consumption
- High sensitivity
- High rejection of ambient daylight
- Low turbidity breakthrough
- Low Chlorophyll cross-talk in the Rhodamine version
- No pumping or water flow corrections needed
- Ground loop isolation to facilitate system installation
- Stable zero with low temperature coefficient
- Very low noise & large dynamic range with ultra-linear signal processing
- Accepts 6 : 1 supply voltage input
- Acetal housing for corrosion inhibition

MINI*tracka* II

INSTRUMENT DESCRIPTION

MINI*tracka* II augments Chelsea Technologies' renowned range of AQUA*tracka* submersible fluorimeters. The emphasis on the different variants of MINI*tracka* II is on low cost, size and power consumption - whilst still retaining excellent sensitivity, without sacrificing the all important turbidity rejection. All Chelsea's fluorimeters are notable for their ability to make measurements in high levels of daylight.

Specimen excitation is from a high brilliance blue LED combined with optical filtering. Optical emissions are detected by a large area, low temperature coefficient (tempco) 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. The performance of MINI*tracka* II 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 the UV AQUA*tracka* incorporated in the pressure housing, enables it to operate successfully in high levels of ambient light. Hence, using MINI*tracka* II 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 MINI*tracka* II, 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 MINI*tracka* II is linearly related to concentration and not logarithmically as might be expected from its AQUA*tracka* origins.

SPECIFICATION

Optical

	Chlorophyll-a	Rhodamine (WT)	Amido Rhodamine	Fluorescein	Nephelometer	Phycoerythrin	Phycocyanin
Excitation Wavelength:	470/30nm	470/30nm	425/30nm	480/80nm	470/30nm	530/30nm	590/35nm
Emission Wavelength:	685/30nm	590/45nm	550/30nm	530/30nm	470/30nm	580/30nm	645/35nm
Concentration range:	0.03-100µg/l(1)	0.03-100µg/l	0.04-200µg/l	0.03-100µg/l	0.04-100 FTU	0.03-100µg/l	0.03-100µg/l
Resolution:	0.01µg/l	0.01µg/l	0.025µg/l	0.01µg/l	0.01 FTU	0.01µg/l	0.01µg/l

Notes: (1) Chlorophyll-a acetone; response from cultured isochysis is typically 40 times that of Chlorophyll-a in acetone at the same concentration. (2) Other ranges available on request.

Mechanical

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

Electrical

Input voltage:	7 to 40 VDC
Output voltage:	0 to 4 VDC (linear with fluorescence concentration)
Power requirements:	0.7W
Noise (typ):	0.5m V r.m.s. (0.1-200Hz)

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