

SCUFTMA

Self-Contained Underwater Fluorescence Apparatus

SUBMERSIBLE FLUOROMETER



TURNER DESIGNS

fluorometer.committedTM

SCUFTMA

The SCUFA (Self-Contained Underwater Fluorescence Apparatus) is an accurate, simple-to-use and versatile submersible fluorometer for chlorophyll and dye tracing applications.

ACCURACY

- Typical temperature fluctuations in natural waters can result in significant changes in fluorescence values. The SCUFA, with its integrated temperature probe and software, automatically corrects fluorescence data of temperature effects.
- Turbidity can also cause errors in fluorescent readings. The SCUFA II and SCUFA III utilize a dedicated secondary channel for a turbidity measurement that provides valuable data for potential correlation and correction (Figure 1).

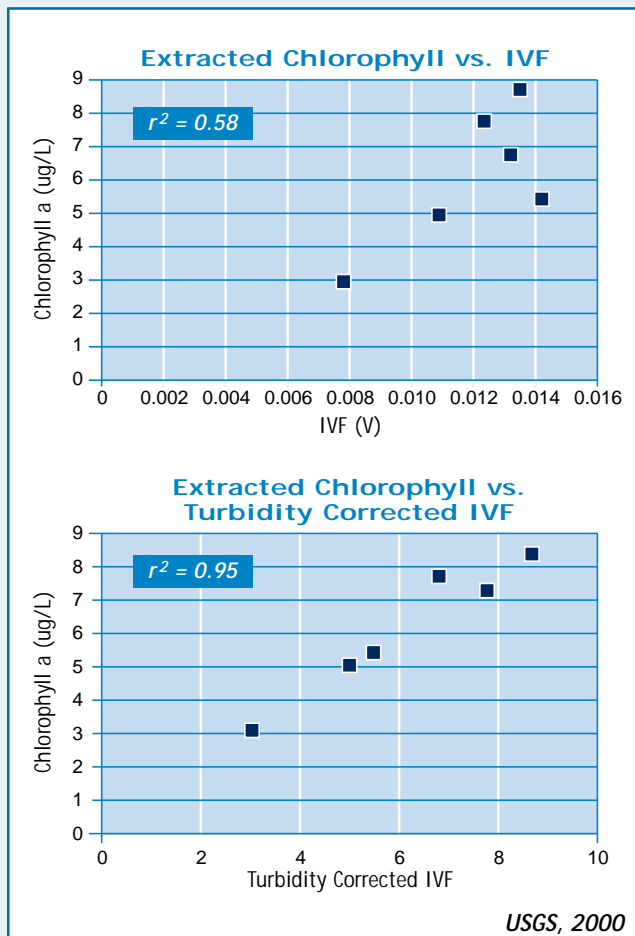


Figure 1. In vivo fluorescence (IVF) data and turbidity-corrected IVF correlated to extracted chlorophyll.

- User-selectable 0V and 5V values result in optimal range selection and improved resolution of analog data.
- Superior ambient light rejection eliminates the effects of sunlight and allows the SCUFA to be used in surface waters without the need for external pumps or light shields.



The SCUFA has been designed to operate in a wide range of concentrations and environmental conditions. The capability to program sampling intervals via the Windows® Interface Software and the automatic range control enable the user to configure the SCUFA for any type of profiling or moored deployment.

SIMPLICITY



Figure 2. The Data View screen allows the user to download and view data from the internal data logger, as well as view data from real-time data transfer and saved files.

- The SCUFA's menu-driven software provides the interface for instrument configuration and data analysis. The software walks the user through easy-to-follow steps for functions such as calibration and data collection (Figure 2).
- The Auto-Ranging capability provides an extremely wide dynamic range, allowing the SCUFA to be used in dramatically different environments without manually changing gain settings or going over range.
- The SCUFA's solid secondary standard allows the user to verify instrument calibration quickly and easily and to re-calibrate if necessary.
- The optional Copper Anti-Fouling System enables unattended deployment for extended periods without the performance suffering from the effects of biofouling.

VERSATILITY

- 0-5V and RS-232 signal outputs are standard features, so the SCUFA can be mated to a variety of CTDs and data collection devices.
- Open optics eliminates the need for a pump, but a pump can be used with the optional flow-through cap.
- The SCUFA can be programmed for user-defined sampling rates and times with the purchase of the Internal Data Logging (IDL) Package. IDL also reduces power consumption through the use of Sleep Mode between sampling intervals.

INTRODUCTION TO TURNER DESIGNS

We have been producing sensitive and durable fluorescence instrumentation since 1972. Turner Designs currently manufactures more fluorescence instruments than any other company in the world. We are an employee-owned company whose people take pride in providing quality instruments and responsive technical service.

SCUFA Suggested Packages

	SCUFA I (2000-001)	SCUFA II (2000-002)	SCUFA III (2000-003)
Application	Chlorophyll <i>a</i>	Chlorophyll <i>a</i>	Rhodamine WT
Turbidity Channel	No	Yes	Yes
Interface Software	Yes	Yes	Yes
Depth Rating	600 m	600 m	600 m
Temperature Compensation	Yes	Yes	Yes
PC Interface Cable	Yes	Yes	Yes

The SCUFA Basic Package includes a fluorometer (P/N 2000-010), Windows® Interface Software and a PC Interface Cable. If there is not a suggested package to fit your needs, please contact our Sales Department for assistance or a quotation.

Specifications

	Chlorophyll	Rhodamine WT
<i>Minimum Detection Limit:</i>		
Fluorescence	0.02 µg/L*	0.04 ppb
Turbidity	0.05 NTU	0.05 NTU
<i>Dynamic Range:</i>		
Fluorescence	4 orders of magnitude	4 orders of magnitude
Turbidity	3 orders of magnitude	3 orders of magnitude
<i>Resolution:</i>		
Digital	12 bit	12 bit
Analog	1.2 mV	1.2 mV
<i>Current Draw:</i>		
Max. Sampling Rate	50 mA	50 mA
Sleep	50 µA	50 µA
Input Voltage	7–15 VDC	7–15 VDC
Signal Output	0–5 V & RS-232	0–5 V & RS-232
<i>Max. Sample Rate:</i>		
Digital	1 Hz	1 Hz
Analog	5 Hz	5 Hz
Connector	Impulse (MCBH-8-MS SS)	Impulse (MCBH-8-MS SS)
Temperature Range	–2 to 40°C	–2 to 40°C
Light Source	Ultra-Bright Blue LED (2)	Ultra-Bright Green LED (2)
Detector	Photodiode	Photodiode
Optics	460 FS30 / 685 FS30	530 FS20 / 600 FS20
Weight in Air	1.98 lb (0.9 kg)	1.98 lb (0.9 kg)
Diameter	2.5" (6.35 cm)	2.5" (6.35 cm)
Length	10" (25.4 cm)	10" (25.4 cm)

*Minimum detection limit determined using Isochrysis laboratory cultures.

Accessories Available

- Internal Data Logger (Logs 11,000 data points) (P/N 2000-200)
- Automatic Temperature Compensation (P/N 2000-700)
- Flow-through Cap (P/N 2000-900)
- Solid Calibration Standard (P/N 2000-901)
- Copper Anti-Fouling System (P/N 2000-950)
- Battery Pack (P/N 2000-600)

CONTACT US

sales@turnerdesigns.com
 www.fluorometer.com
 Toll-free: 1-877-316-8049
 845 West Maude Avenue
 Sunnyvale, CA 94085
 Phone: (408) 749-0994
 Fax: (408) 749-0998



TURNER DESIGNS