

Configurations

The **BOD-Wader** comprises a UviLux Tryptophan fluorometer, a 5-metre cable (longer cables are available) and the Hawk handheld display logging unit.

The **BOD-Wader Pro** provides two UviLux fluorometers, configured for BOD and CDOM, securely mounted in a frame for ease of deployment. Data streams from both fluorometers are combined and reported in real-time on the Hawk data logger.

The Hawk incorporates a **rechargeable battery pack**, charged via the USB cable supplied. If required, the rechargeable battery pack can be replaced with standard disposable cells. User programmable thresholds allow data to be presented in a Red, Amber, Green (RAG) format, so that the operator is clearly notified when levels become significant. A plotting feature is also provided so that trends in the data can be clearly identified.

Specification

UviLux Fluorometer

Size	Ø70 x 150 mm
Weight	800 g

UviLux Performance

	BOD	CDOM
Sensitivity (QSU)	0.01	0.01
Calibrated range (QSU)	600	600
Example compound: sensitivity - range (ppb)	BOD: 0.001 - 50 mg/L	PTSA:* 0.02 - 900

*PTSA is pyrene tetrasulphonic acid

Hawk handheld display and logging unit

Display	320 x 240 pixel qVGA backlit LCD
Display size	70 x 50 mm
Size	210 x 110 x 45 mm
Weight	500 g
Memory capacity	2 Gbyte
IP rating	IP67
Operating temperature	-2 °C to 40 °C
Storage temperature	-40 °C to 70 °C

BOD-Wader

Battery duration	4 hours continuous use
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BOD-Wader Pro

Battery duration	2 hours continuous use
Overall size mm	200 x 200 x 100 mm
Weight	2.5 kg

BOD-Wader and BOD-Wader Pro



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BOD-Wader systems provide real-time, highly sensitive, *in situ* assessment of Biological Oxygen Demand within water systems, informing on the impact of biodegradable substances.

Applications

- ➔ BOD loading to Waste Water Treatment Works (WWTW)
- ➔ Monitoring efficacy of separate processing tanks within WWTWs
- ➔ Assessment of WWTW outflow compliance
- ➔ BOD monitoring in the dairy industry



Clarity in Water

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In view of our continual improvement, the designs and specifications of our products may vary from those described.



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What can the BOD-Wader do for you?



How does it work?

★ Features

- Real-time indication of BOD levels (in mg/l BOD₅)
- User set Red, Amber, Green (RAG) data warning display
- Simple, single touch data logging (2Gbyte storage capacity)
- Position and time stamping of recorded data
- Uses rechargeable or disposable batteries
- High sensitivity

Introduction

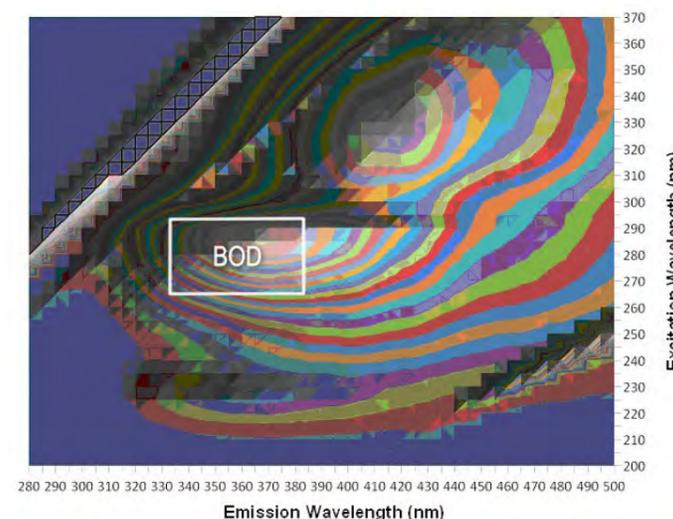
CTG's **BOD-Wader** and **BOD-Wader Pro** systems allow water process engineers to assess real-time, *in situ* levels of BOD in water systems. This is achieved by detecting UV Tryptophan fluorescence, which recent publications have shown correlates with the standard 5-day Biological Oxygen Demand (BOD₅) test.

The **BOD-Wader** comprises a CTG UviLux fluorometer and a Hawk handheld display and logging unit. CTG's UviLux fluorometers detect UV fluorescence with industry-leading sensitivity and selectivity and have been optimised for minimal interference from water turbidity.

Data is displayed on the Hawk's **colour touchscreen** and logged internally. If required, the Hawk can be programmed to apply a user calibration to the reported BOD values. The Hawk also incorporates a **GPS receiver** so that all **logged data** can be position and time stamped.

CTG's **BOD-Wader** and **BOD-Wader Pro** detect UV fluorescence from dissolved organic compounds. These compounds absorb UV light and re-emit a fraction of this energy as fluorescence at longer wavelengths. Fluorescence intensity is directly proportional to Tryptophan concentration. The technique is widely recognised as one of the **most sensitive detection methods available**.

Tryptophan is an essential amino acid in the human diet and is the main component of protein fluorescence. Recently published data demonstrates strong correlations between Tryptophan fluorescence and the standard BOD₅ water quality test. CTG have established a correlation factor that is used to convert Tryptophan concentrations to BOD₅ values. This has been determined using environmental water samples, however, in conditions where there is a high BOD₅ contribution from suspended solids, a site dependent calibration may be required. This calibration can be programmed into the Hawk logger.



Fluorescence map of an environmental water sample spiked with Tryptophan, indicating BOD-Wader measurement window



Should consider fluorescence spectroscopy as a more accurate, independent and flexible indicator of bioavailability than BOD₅

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Touch screen display



GPS position and time logged



2gb storage capacity



BOD-Wader and BOD-Wader Pro

The **BOD-Wader** comprises a single CTG UviLux Tryptophan fluorometer and a Hawk handheld data logging unit. The **BOD-Wader Pro** includes an additional UviLux sensor for discriminating Tryptophan fluorescence from Coloured Dissolved Organic Matter (CDOM). This is particularly useful when CDOM background levels are high or when correlating BOD levels across a wide range of locations where background CDOM levels may be variable. CTG's UviLux fluorometers detect UV fluorescence with industry-leading sensitivity and selectivity and have been optimised for minimal interference from water turbidity.

The UviLux BOD fluorometer is calibrated using standard solutions of Tryptophan. A conversion factor is then applied internally to the measured Tryptophan concentration to provide BOD₅ output in mg/l. The UviLux CDOM sensor reports concentration in units of µg/l and is calibrated using standard solutions of Pyrene (PTSA).