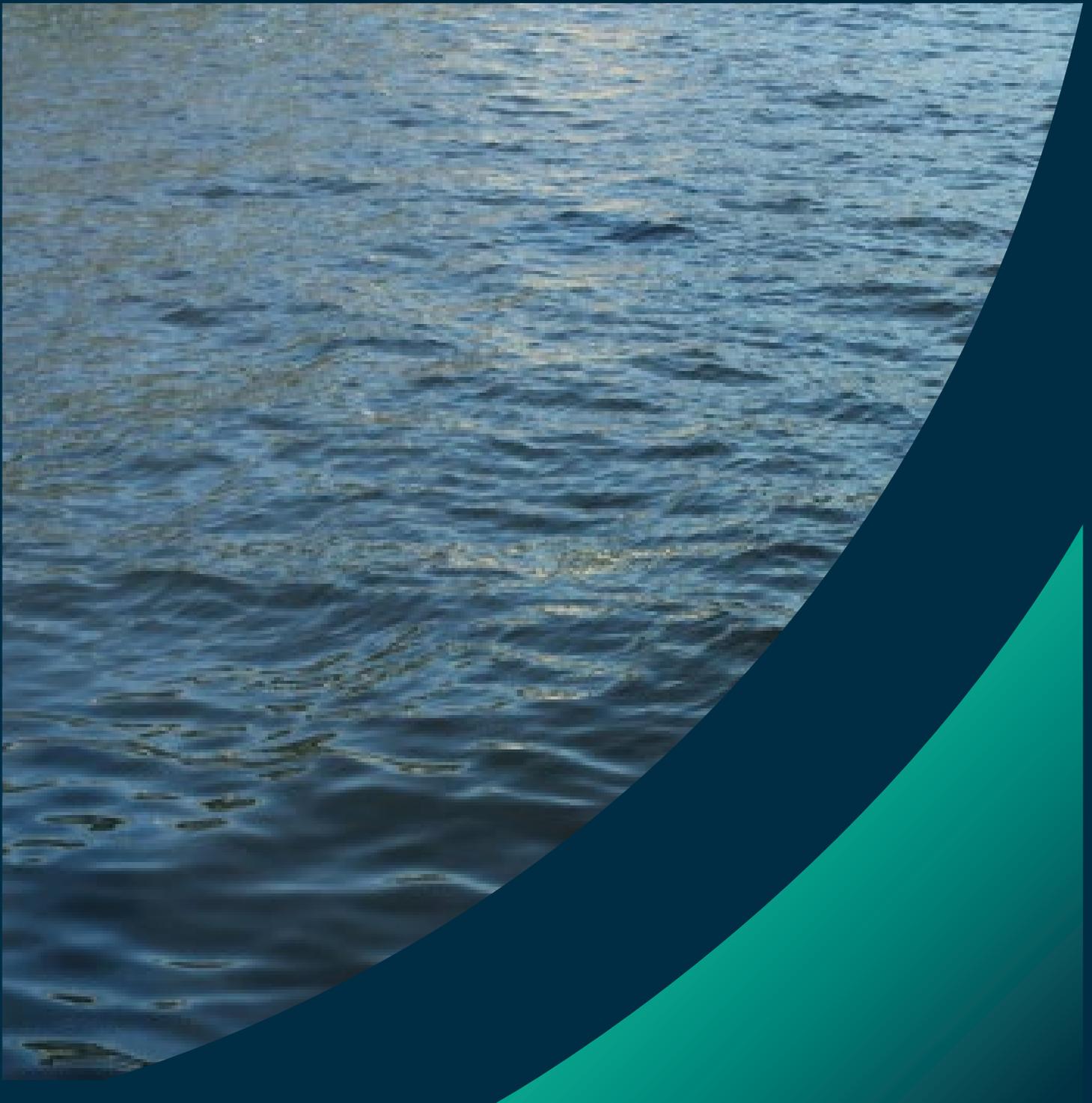


VLux TPro

Multi-parameter Tryptophan Fluorometer

5-in-1 MiniSonde for detection and monitoring of tryptophan in water





VLux TPro Multi-parameter TPro Fluorometer

VLux TPro is the latest advancement in *in situ* fluorometers from Chelsea Technologies, measuring 5 key parameters in one compact sensor.

Tryptophan measurement has been applied to the detection of tryptophan in water and is becoming increasingly recognised as a valuable water quality parameter in its own right.

Tryptophan is an essential amino acid in human diet and is the main component of protein fluorescence. It is associated with microbial activity and has been applied to sewage and faecal contamination of waste waters, including: agricultural runoff, waste water treatment effluent and contamination into processed waters.

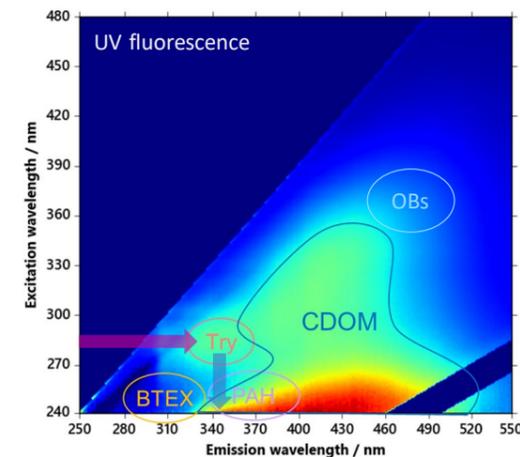
Applications

- Assessment of the overall health of a water body
- Quantitative data to aid assessment of environmental status
- Water quality assessment and monitoring in catchments
- Sewage contamination
- Groundwater contamination
- Ecological health
- Early 'bloom' detection prior to cell growth

Features

5 key parameters including:

- Tryptophan
- CDOM
- Chlorophyll a & c
- Turbidity (ISO 7027:1999 compliant)
- Absorbance
- Fluorescence automatically correction for absorbance and turbidity
- Highly sensitive for detection of tryptophan at the sub-ppb level
- Integral biofouling protection using both UV light and copper bezels around windows
- Compact and robust design, measuring 194 mm (H) x 50 ± 0.05 mm (D)
- Ideal for standalone fieldwork or system integration including: CTDs, AUVs, ROVs and gliders
- Integrated logging as standard, battery packs available on request
- Compatible with Hawk and Watchkeeper for data display in the field



Why measure CDOM and Chlorophyll as well as Tryptophan?

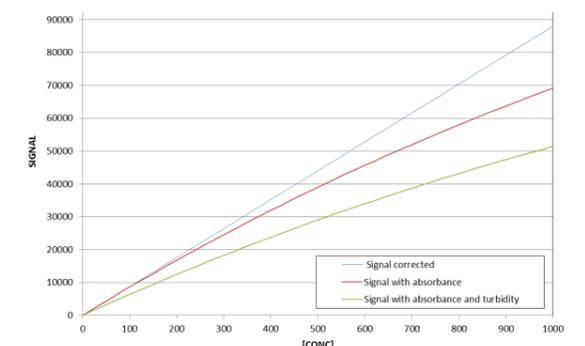
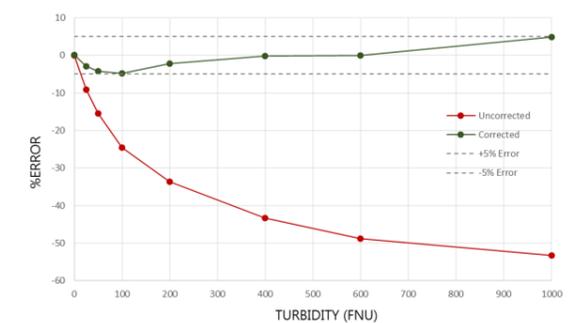
Measuring CDOM and chlorophyll as well as Tryptophan allows the background fluorescence interference to be separated from the Tryptophan signal, improving the accuracy of the Tryptophan reading. The Excitation Emission Matrices (EEMs) shown demonstrate this – note the crossover between CDOM and Tryptophan, and the faint signal in the same region on the visible EEM.

Why correct for absorbance and turbidity?

As the concentration of Tryptophan increases, the compounds themselves absorb light, resulting in a non-linear response of fluorescent signal against concentration.

Increased turbidity also has an impact, as light is scattered by particle and other matter in the water. Errors due to turbidity can be significant – adding the correction minimizes errors at even high turbidities.

In more challenging and dynamic environments such as rivers and estuaries, the impact of environmental factors cannot be ignored. VLux TPro measures turbidity and absorbance, applies the correction within the sensor and outputs environmentally corrected data.



Fluorometer solutions from Chelsea Technologies

Chelsea Technologies designs and manufactures ingenious environmental monitoring technology to make the world safer, cleaner and smarter.

Across shipping, marine science, water quality, defence and industrial process control, our best-in-class sensors and systems are trusted for the sensitivity, accuracy, reliability and sophistication. We've built our unrivalled specialist expertise over 50 years, and we apply this with new rigor to every engineering challenge our clients set us.



Key Features

5 key parameters in one compact sensor

- Tryptophan
- CDOM
- Chlorophyll a & c
- Turbidity (ISO 7027:1999 compliant)
- Absorbance
- **Highly sensitive** for detection of contaminants at the sub-ppb level
- **Fluorescence automatically correction** for absorbance and turbidity
- **Integral biofouling protection** using both UV light and copper bezels around windows
- **Compact and robust** sensor ideal for system integration and field work
- **Internal logging** as standard, battery packs available on request
- **6000 m depth rating**
- **Compatible with Hawk and Watchkeeper**



CDOM - A valuable addition to VLux

VLux measures CDOM for corrections but it is also a valuable parameter in its own right. It gives a holistic overview of organic content and tryptophan.

In addition, when aromatics combine with halides (e.g. trihalomethanes), they become carcinogenic. This is highly relevant for the water industry - if CDOM is not effectively removed before chlorination, potentially harmful compounds could be added to the water supply.

Applications

- **Assessment of the overall health of water body**
- **Quantitative data to aid assessment of environmental status**
- **Water quality assessment and monitoring in catchments**
- **Sewage contamination**
- **Groundwater contamination**
- **Ecological health**
- **Early 'bloom' detection prior to cell growth**



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