



# COD/TOC SENSOR

The ORAKEL COD/TOC Sensor waste analyser is designed in modular form so that it can be integrated with other sensors, such as pH, turbidity and dissolved oxygen, to provide all the tools needed for either a stand-alone UV254 analyser or as part of an effluent discharge monitoring system.



## HOW IT WORKS

The ORAKEL COD/TOC Sensor provides online continuous organics monitoring utilising a 254nm ultraviolet light source.

The amount of light absorbed provides an ongoing indication of Natural Organic Matter (NOM) in a flowing sample and serves as a continuous surrogate measurement for Total Organic Carbon (TOC), as well as other measurements such as Chemical Oxygen Demand (COD).

## KEY FEATURES

- Tough - field proven
- Stable and reliable - excellent process control
- Surrogate for TOC, BOD or COD
- Suitable for all waters (seawater option)
- UVT for UV disinfection control
- UVA for water monitoring

## SENSOR OPTIONS

The ORAKEL COD/TOC Sensor can be correlated and used as a surrogate measurement for TOC, BOD or COD, or in UV Transmission mode, can be used to control UV disinfection processes.

With multiple path length sample cells included and with a seawater option, the UV254Sense (Waste) is suitable for all waste waters.



Automatic Chemical Cleaning System



Dual sample feed capability



Multiple sensors on a single analyser

## INNOVATIVE TECHNOLOGY

The **ORAKEL COD/TOC Sensor** uses the most innovative technology on the market to avoid the common issues associated with using light absorption for waste water analysis.

The unique technology employed removes the UV lamp fluctuation, dirt and fouling issues associated with many optical instruments, whilst also avoiding the added complexity, maintenance and expense seen in other instruments attempting to overcome the same issues.

The **ORAKEL COD/TOC Sensor** comes with built-in turbidity compensation to ensure accurate, stable and reliable measurements.

Thanks to the multiple light path lengths available (2, 4 and 10mm), the **ORAKEL COD/TOC Sensor** is suitable for almost any waste stream and is capable of measuring a range of 0 - 6.5 UVA.

The modular design and wide UVA range makes it the most adaptable system available worldwide.

When coupled with the **ORAKEL Control Unit**, you get a system capable of automatic self-cleaning, automatic calibration/zeroing plus a wealth of process control and communications options.

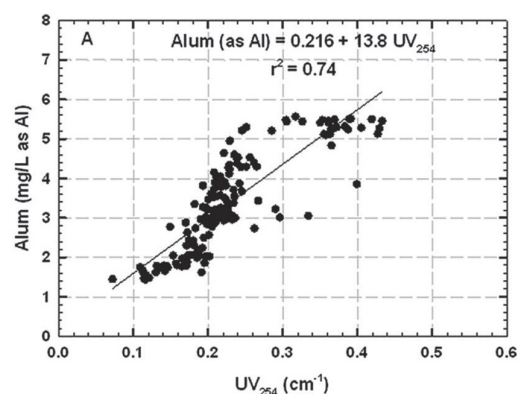
## APPLICATIONS

When using the transmission mode (UVT) the **ORAKEL COD/TOC Sensor** can be used to optimise the light level in UV disinfection equipment providing confidence in your disinfection whilst minimising power levels.

Once in absorbance mode (UVA), the instrument can be used to monitor the presence of organic matter (NOM). This can be used as a surrogate measurement for COD, BOD or TOC to give continuous indication and evidence of effluent quality and ensure that all effluent control requirements are met on any waste stream.

The **ORAKEL COD/TOC Sensor** can be combined with any other **ORAKEL** sensor such as pH,

temperature, suspended solids, dissolved oxygen etc., to give a complete waste stream monitoring system at a fraction of the price of a true 'online' COD/TOC analyser.



## TECHNICAL SPECIFICATION

**Range**

0-100% UVT, 0-6.5 UVA.

**Accuracy**

±1.0% UVT.

**Repeatability**

±0.1% UVT.

**Resolution**

0.1% UVT, 0.001 UVA.

**Path Length**

2, 4 and 10mm.

**Sampling Time**

10 seconds.

**Flow Rate**

300-800ml/min.

**Cleaning**

Unique fouling compensation, quick and easy in-situ cleaning technology.

Automatic cleaning (optional).

**Self Diagnostics**

Continuous detection of excessive fouling, lamp output and electrical fault.

**Humidity Control**

Humidity sensor with large regeneratable desiccant system.

**Wavelength**

254nm (tolerance ±0.3).

**Light Source**

Low pressure mercury UV lamp.

**Lamp Life**

2 years (warranted).

**Dimensions**

16"(h) x 14"(w) x 8"(d).

**Enclosure**

IP65 (Nema 4X) wall mountable.

**Fluid Connections**

¼" tube compression in/out.

**Electrical**

100-240VAC.

**Operating Temp**

0° to 45°C (32° to 113°F).

**Storage Temp**

-20° to 60°C (-4° to 140°F).

**Warranty**

2 year limited warranty.

**Optional Accessories**

Automatic chemical cleaning.

Dual sample capability.

Seawater version.

## THE ORAKEL SYSTEM



The **ORAKEL System** is the ultimate fluid measurement product range.

Created as a modular system with a wide range of sensors that can be added to measure various characteristics for a truly bespoke and cost effective solution.

- Two types of high specification control units available
- On-screen graphing
- 9 buttons for easy navigation
- Secure website viewing option available
- 4-20mA and Modbus outputs available
- Multilingual options
- Connects up to 2 sensors as standard; expandable up to 16 sensors

THE ULTIMATE FLOW AND QUALITY MEASUREMENT SYSTEM



The ORAKEL System

FLOW MEASUREMENT

- Open Channel/Pipe:
  - Non-contact Flow Sensor
  - Submerged AV Sensor
- Full Pipe:
  - Ultrasonic Time of Flight Sensor

QUALITY MEASUREMENT

- Biofilm Sensor
- Chlorine Sensor
- COD/TOC Sensor
- ORP Sensor
- pH Sensor
- Oil on Water Sensor
- Turbidity & Suspended Solids Sensor
- Dissolved Oxygen Sensor
- Conductivity Sensor