TECHNICAL SPECIFICATIONS

Sensor type	Oxygen consumption optical biosensor. 1 or 2 channels
Installation	Standard connection to water pipe. Optional installation of dedicated water pump.
Sensitive terminal	Bacteria immobilised on a porous polymer in contact with an oxygen sensor. Size: Ø 0,5 x 10 mm
Maintenance	Solution renewal and visual check every 7-15 days depending on application (takes 30-60 min). The O_2 sensor is maintenance free.
Measurement range	From 1 mgL^{-1} to 50 mgL^{-1}
Resolution	0,5 mg/L
Reproducibility	8%
Bioresistance	High resistance to toxics
Measurement frequency	From 15 to 30 samples/day according to version
Reagent consumption	0,30 – 0,60 ml/min, depending on application
Sample temperature	0 - 75 ºC
Sample pH	2 – 12
Calibration	Self-calibration with GGA standard
Dimensions	800 x 600 x 300 mm (enquire for compact versions)
Measurement matrices	Natural waters, WWTP effluents, high salinity waters. Ask for other applications
Communications & user interface	Incorporates OPTOSEN® acquisition and control unit with MS-Windows®-based software. Remote control via GSM/GPRS

CONTROL UNIT

Digital outputs	1 connectorised output. Up to 8 available outputs
Data format	MS-Excel®. compatible
Analog outputs	One 4 – 20 mA output
Alarms	GSM-SMS configurable
Analog inputs	Four 4 – 20 mA inputs. Possibility to incorporate pH, DO, *K* and T.
Graphic display	Real-time display of measures. Display of stored data sets.
Comunications	2 RS232 ports. (GSM) 1 SPI port
Backup battery	Not required (Flash). Internal LiH battery for clock
Real time clock	Format: yy.mm.dd / hh.mm.ss software updateable
Watchdog	Guarantees uninterrupted operation of the system

Measure continuously *in-situ*
or sample and sit for 5 days ?

- Self-calibrating
- Without delays
- Immediate all-weather installation
- No special pumping requirements
- **Minimal maintenance**

- More control
- More safety
- More speed
- More transparency
- More quality
- More savings

optosen®

On-line measurement of BOD

BOD-OPTOSEN®50

The specific solution to monitor WWTP effluents and surface waters

INTERLAB
INGENIERÍA ELECTRÓNICA

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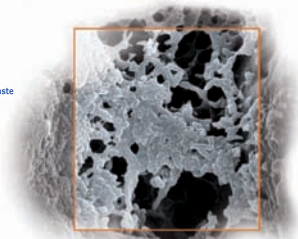
BOD OPTOSEN® 50

New analyser for **continuous** and **unattended** measurement of *Biochemical Oxygen Demand* (BOD). BOD-OPTOSEN®50 is a device specially configured to deliver the highest levels of performance in waters with a **low organic load**.

Designed and optimised for the **monitoring of effluents from waste water treatment plants (WWTPs) and of natural waters**, the measurement interval has been focused between 0 – 50 mg/L, providing an excellent accuracy in these applications.



BOD-OPTOSEN®50 offers:

- Simple operation and minimal maintenance
- Measures based on an optical oxygen sensor, without calibration or electrolyte renewal
- Excellent correlation against the laboratory BOD_5 method
- Immediate all-weather installation – no need for civil works or special pumps
- Internal self-calibration using stabilised BOD standard
- Data management and control software with powerful graphical user interface
- Great configuration flexibility enabled by software
- Multiple communication options (GSM/GPRS, RS485, 4-20 mA)
- Programmable alarms – SMS sent to mobile device on exceedance of user-defined thresholds

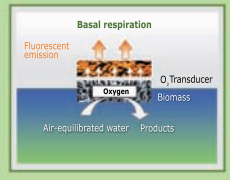
Optical Technology at the Service of Environment

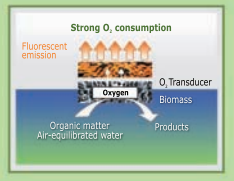
The OPTOSEN® trademark comprises the multiple developments made by INTERLAB IEC in the field of fibre optic sensors as well as their practical translation into robust, minimal-maintenance equipment, capable of responding to the current needs in water quality monitoring of both industry and all other agents involved in water cycle management.

BOD-OPTOSEN®50 technology incorporates an optical biosensor and a patented[1] measuring cell that substitutes, very advantageously, the classical biological reactors fitted with oxygen electrodes that exist in the market.

Working principle

[1] PCT/ES2007/000755





BOD is calculated from the oxygen consumption (respiration) of a bacterial biomass fixed to the biosensor, using for this purpose an oxygen-sensitive luminescent material. The higher the concentration of dissolved organic matter the lower the amount of oxygen available within the system which results in an increased fluorescent emission.

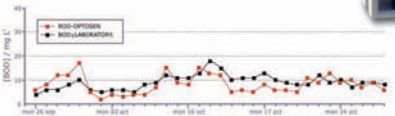
Continuous BOD Measurement can be this easy...

Entry via electrovalve | Sample dosage | Measurement in cell with biosensor

Up to 30 samples per day

TESTED RELIABILTY

BOD-OPTOSEN®50 uses the same measurement principle as that employed in manual BOD_5 tests performed in the laboratory, avoiding the inaccuracies of indirect methods based upon absorption measures. As a result the readings provided by BOD-OPTOSEN®50 analysers exhibit an outstanding correlation with laboratory-derived BOD_5 measurements, the equipment having been extensively validated for several years in laboratory and field tests.



Correlation BOD-OPTOSEN® vs. accredited laboratory

WHY PERFORM ON-LINE MONITORING ?

A problem of manual sampling programmes, even if performed daily, is that they can only provide snapshots of a rapidly changing reality, completely omitting events that can be of great relevance such as discharges or fluctuations in the local environment. Continuous measurement of BOD provides the full sequence of events, delivering the basis for sound decision-making and guaranteeing traceability and transparency throughout the whole process, together with a remarkable reduction in time and cost per analysis.