



DO Meters

Oxygen Meters

Dissolved Oxygen

Some oxygen is dissolved in practically every liquid. For example, at a temperature of 68 °F (20 °C) and an atmospheric pressure of 1013 mbar saturated water contains about 9 mg/l oxygen. Ethanol can contain up to 40 mg/l whereas glycerol only has about 2 mg/l.

Each liquid takes up oxygen until the partial pressure of oxygen in the liquid is in equilibrium with the air or gas phase in contact with it. The actual oxygen concentration depends on a number of factors, such as temperature, air pressure, oxygen consumption by microorganisms in a biodegradation process or oxygen production by algae, etc.

The oxygen concentration is important for the:

- Living conditions for fish and microorganisms in waters
- Degradation processes in wastewater treatment
- Corrosion processes in pipelines
- Shelf life of beverages, etc.

The determination of the oxygen concentration was formerly carried out by the WINKLER titration method. Today electrochemical measurement is a recognized method in numerous standard procedures.

In its simplest form an oxygen sensor contains a working electrode and a counter-electrode. Both electrodes are located in an electrolyte system which is separated from the sample by a gas-permeable membrane. The working electrode reduces the oxygen molecules to hydroxide ions. In this electrochemical reaction a current flows from the counterelectrode to the working electrode. The more oxygen present in the sample, the larger the current signal. The oxygen meter calculates the oxygen concentration in the sample from this signal.

Oxygen Meters

● recommended by WTW ○ conditionally applicable – not recommended

Application Range	inoLab®			Profi-Line	Handheld meters		
	Oxi 730	Oxi 740	BSB/BOD 740	Oxi 197i	Oxi 315i	Oxi 330i	Oxi 340i
Routine measurement	-	-	-	-	●	●	-
Routine measurement with documentation	●	●	●	●	-	-	●
AQA with documentation	●	●	●	●	-	-	●
R&D high precision	●	●	●	●	-	●	●
Control measurements	●	●	●	●	○	●	●
LIMS connection	●	●	●	●	-	-	○
Quality assurance	●	●	●	●	-	●	●
Training	●	●	●	○	●	●	○
Service	-	-	-	●	●	●	●
Laboratory measurements	●	●	●	●	-	-	○
Field measurements	-	-	-	●	●	●	●
Depth measurements	-	-	-	●	-	-	-
External control/PC connection/ PC control	●/●/-	●/●/●	●/●/●	●/●/-	-	-	●/●/-
BOD measurements with self-stirring sensor	●	●	●	●	-	-	○ with adaptor
BOD measurements with assessment program	-	-	●	-	-	-	-

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For oxygen measurement with multi-parameter instruments see page 50 ff

Application Range Sensors	ConOx	DurOx®	CellOx® 325	StirrOx® G	TA 197 Oxi
BOD measurements	-	-	○	●	-
Fish farming	●	●	○	-	-
Surface waters	●	○	●	-	-
Ground water	○	-	○	-	●
Control measurements	●	●	●	○	-
Depth measurements	-	-	-	-	●
Laboratory measurements	○	-	●	○	-
Pharmaceutics	○	○	●	-	-
Biotechnology (non-autoclavable)	○	○	●	-	-
Wastewater treatment plant: aeration basin	○	●	○	-	-

applicable instruments:

Multi 350i

Oxi 3xxi
Multi 350i

all

inoLab®, 197i

197i



Parameter

pH

ORP

ISE

Oxygen
(D.O.)

Conductivity

Multi-
parameter

BOD/
Respiration

Photometers

Turbidity

Colony
Counter

Software/
Printers

NEW

DO Meters

Laboratory Oxygen Meters

Laboratory Oxygen Meters

Oxygen is one of the most frequently measured parameters in the laboratory. It plays a large role in the degradation of substances and the growth of microorganisms, both in environmental technology and in biotechnology.

The inoLab® Oxi 740 instrument is particularly suitable for monitoring such processes. For routine measurements the inoLab® Oxi 730 is equipped with all the necessary functions which are required for documentation according to GLP.

inoLab® Oxi 730

compact and communicative

Standard laboratory oxygen meter with large multifunctional display for routine use in the laboratory. Automated functions such as air pressure correction, temperature compensation and OxiCal® rapid calibration make work easier. Datalogger, analog and digital output RS 232 as well as the optional built-in printer guarantee QA-conform documentation.

Features

- Simplified operator convenience
- Easy-to-clean touch-sensitive keypad
- Optional built-in printer



IP 43

CE

UL
CUL3 Year
Warranty

The StirrOx® G can be operated by the inoLab® Oxi 730 for BOD₅ determination according to DIN EN 1899-1 resp. DIN EN 1899-2 with manual start/stop functions.

inoLab® Oxi 740

inoLab® Oxi 740 with Terminal or PC Software:
flexible and powerful

High-performance oxygen meter with graphic display and digital recorder function for oxygen measurement in the laboratory. Automated functions such as air pressure correction, temperature compensation by the IMT method and OxiCal® rapid calibration make work easier. The built-in measurement store, the digital output RS 232 and the optional built-in printer (paper width 4.4" resp. 112 mm) guarantee QA-conform documentation.

Features

- Built-in digital recorder
- Graphic evaluation possible
- Connection of bar-code reader or PC keyboard
- Automatic memory function if bar-code reader is used
- User Selectable Languages
- Multi-Level GLP Functions (password-protected operator levels)
- Limit input with acoustic alarm
- Free-of-charge software downloads for MultiLab® pilot or terminal

- Precision instrument
- Firmware/Softwareupdate
- External control (MultiLab® pilot)



Technical Data

Model	Oxi 730	Oxi 740
Range/ Resolution	O ₂ concentration: 0.00 ... 19.99 mg/l, 0.0 ... 90.0 mg/l* O ₂ saturation: 0.0 ... 199.9%, 0 ... 600%* O ₂ part. pressure: 0.0 ... 199.9 mbar, 0 ... 1250 mbar Temperature: 23 ... 122 °F (-5.0 ... +50.0 °C) * = depends on oxygen sensor and medium	O ₂ concentration: 0.00 ... 20.00 mg/l, 0.0 ... 90.0 mg/l* O ₂ saturation: 0.0 ... 200.0%, 0 ... 600%* O ₂ part. pressure: 0.0 ... 200.0 mbar, 0 ... 1250 mbar Temperature: 23 ... 122 °F (-5.0 ... +50.0 °C) * = depends on oxygen sensor and medium
Accuracy (± 1 digit)	O ₂ concentration: ±0.5% of value O ₂ saturation: ±0.5% of value Temperature: ±0.1 K	
Temperature compensation	32 ... 122 °F (0 ... +50 °C) automatic via IMT compensation	
Salinity correction	Automatic from 0.0 ... 70.0 adjustable via display	
Calibration	OxiCal® rapid calibration in OxiCal®-SL	

Ordering Information

inoLab® Laboratory Oxygen Meter SETs – with wide-range power supply 100-240 VAC (50/60 Hz) included		Order No.
inoLab® Oxi 730P	With built-in printer, including CelloX® 325, passive multifunction box and accessories	1B21-0111
inoLab® Oxi 740	Including terminal, PC software, CelloX® 325 and accessories	1B30-0111

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