



# 1-CUBE

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## At-line Digital O<sub>2</sub> meter for beer and carbonated beverages (O<sub>2</sub> GEHALTEMETER) Type OXI

### **Application:**

The digital O<sub>2</sub> meter OXI is used to determine the content of dissolved oxygen in beer, beverages, and wines during the production process on production lines, in cylindroconical and pressure tanks, as well as in kegs. It can also be used under laboratory conditions to measure O<sub>2</sub> content in beverages packaged in bottles and cans. For these measurements, it is necessary to use the ICAS sampler, which enables safe sampling of the beverage from a bottle or can without contamination by oxygen from the ambient air.

### **1. At-line oxygen measurement in production:**

As a portable instrument for measurements on production lines, tanks, or kegs during the manufacturing process. The portable O<sub>2</sub> meter will be your ideal partner for daily analysis and troubleshooting.

### **2. Oxygen measurement in the laboratory:**

The taste and shelf life of a beverage are significantly affected by the oxygen content in the package. The total amount of oxygen in the package can be determined using our OXI and the ICAS sampler. In this way, you can inspect your products and identify sources of O<sub>2</sub> contamination. The instrument provides reliable results even for very small packages.



### **Technical description:**

- Highly sensitive optical O<sub>2</sub> sensor providing excellent measurement repeatability.
- The device is available in two oxygen measurement ranges, to choose from. The standard measuring range is from 0 up to 10,000 ppb. For an additional charge, the OXI can be equipped with a sensor with a lower range from 0 up to 2,000 ppb. This sensor offers higher accuracy and faster response time, ideal for O<sub>2</sub> traces sensing.
- No influence from other dissolved gases.
- O<sub>2</sub> measurement is independent of the flow rate of the measured medium.
- User-friendly operation.
- Data Logger function: enables continuous measurement of O<sub>2</sub> content from pipelines or tanks.
- Values can be displayed on a mobile phone equipped with a Bluetooth interface and the installed ArcAir software. The ArcAir software can be freely downloaded from Google Play or the App Store.
- Option for independent user calibration of the O<sub>2</sub> sensor using a mobile phone with a Bluetooth interface and the installed ArcAir software.
- Regular calibration of the O<sub>2</sub> sensor zero point (0 ppb) is required at least once every six months.



### **Technical data:**

<b>Parameter</b>	<b>Range/Value for type OXI (with range of 0 to 10,000 ppb)</b>	<b>Range/Value for type OXI-2000 (with range of 0 to 2,000 ppb)</b>
Oxygen measuring range	0 to 10 000 ppb	0 to 2 000 ppb
Accuracy	7 ppb	1 ppb
Units	ppb, ppm	ppb, ppm
Max. temperature	70°C	70°C
Max. operating pressure	6 bar	6 bar
Instrument dimensions	210 x 295 x 100 mm	210 x 295 x 100 mm
Weight	2 kg	2 kg
Protection rating (with connector cover screwed on)	IP 54	IP 54
Interface	Bluetooth	Bluetooth
Memory	300 measured values	300 measured values
Power supply	AA 1.2V NiMH rechargeable batteries–6 pcs	AA 1.2V NiMH rechargeable batteries–6 pcs
Charging	AC/DC adapter 24V/200mA	AC/DC adapter 24V/200mA
Connection – one-touch fitting	Tubing outer diameter 4 mm	Tubing outer diameter 4 mm

### **Working Procedure:**

Connect the inlet one-touch fitting of the oximeter to the point where the dissolved oxygen content in the beverage is to be measured using the supplied tubing. Connect the outlet one-touch fitting of the oximeter to the drain using the supplied tubing. Allow the measured beverage to flow through the measuring chamber of the oximeter. The flow through the measuring chamber can be regulated using the valve located on the side of the instrument. Since the O<sub>2</sub> measurement is not dependent on the flow rate of the measured medium, it is sufficient to set a minimal flow. Start the measurement by pressing the Enter key. Wait until the measured O<sub>2</sub> value stabilizes before reading it.

### **Scope of Delivery:**

- Portable OXI oximeter
- Charging adapter
- Connection tubing
- Operating manual

### **Accessories (optional):**

- Sampler for taking samples from packages (bottles, cans), ICAS type (not included in standard delivery, available on request).

### **Advantages & Benefits:**

- High accuracy and calibration capability: ideal for laboratories with an established ISO 9001/9002 quality system.
- Easy calibration using a mobile phone with Bluetooth.
- No influence from other dissolved gases.
- O<sub>2</sub> measurement is independent of the flow rate of the measured medium.
- Excellent price-to-performance ratio.
- The measuring chamber is equipped with a transparent window, allowing visual inspection to ensure that CO<sub>2</sub> bubbles are not forming on the oxygen sensor, which could affect measurement accuracy.
- User-friendly and reliable (simple operation).

## **FAQ:**

### **What are the differences between the OXI and OXI-2000 models?**

The **OXI** model is a universal instrument with a measuring range of up to 10,000 ppb, covering all common operational measurement needs in production. This versatility is, however, balanced by lower measurement accuracy. The **OXI-2000** model allows measurements only up to 2,000 ppb but offers significantly higher accuracy. It is therefore intended primarily for checking oxygen content in the final product, where very low O<sub>2</sub> concentrations are present.

### **How often does the oximeter need to be calibrated?**

The oximeter must be calibrated at least once every six months.

### **What can affect the accuracy of oxygen measurement?**

Measurement accuracy can be negatively affected especially using unsuitable tubing, through whose walls oxygen can permeate into the beverage. Silicone tubing, for example, is unsuitable because it is very permeable to oxygen. In contrast, tubing made of polyether polyurethane is suitable, as it does not allow oxygen to permeate.

Another possible source of error is leakage between the inlet tubing and the fittings, through which oxygen can enter the measured medium.

### **What is the minimum required purity of CO<sub>2</sub> or N<sub>2</sub> gas for displacing a beverage sample from its container into an oximeter, to avoid negatively affecting the oxygen measurement?**

The minimum percentage purity of CO<sub>2</sub> or N<sub>2</sub> gas must be **99.999%**, with a maximum impurity content of **< 10 ppm**, designated as **grade 5.0**.