# OpTech® - O₂ Platinum

## Optical Fluorescence O₂ Analyzer for Measuring Headspace, Dissolved Oxygen, Oxygen Permeation and Package Leak



## OpTech
Versatile | Innovative | Easy to use

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Conforms to
ASTM F2714-08

# mocon®

## OpTech-O$_2$ Platinum Applications

- **Non-destructive shelf life analysis**
- **Film permeation (including perforated films)**
- **Package permeation**
- **Headspace (invasive and non-destructive)**
- **Dissolved Oxygen**
- **Total Package Oxygen (TPO)**
- **Gross Leak**

## The OpTech-O$_2$ Platinum Advantage

- Ergonomic
- No bulky fiber optic cables
- Lightweight and portable (with Portability Kit)
- Reusable, easy to place sensors – no glues needed
- One calibration for all sensors
- No gas calibration needed
- Robust invasive needle, no headspace extraction
- Visible, non-uv light source for simple, targeted reading
- Accurate readings through colored packaging material
- ImPULSE sensor for "opaque" packaging materials
- Packaging oriented software package

MOCON'S OpTech-O$_2$ Platinum is the ideal multi-purpose analyzer for food, beverage, pharmaceutical and medical applications where measuring oxygen and understanding its effect on product and product shelf life is critical.

The versatile OpTech-O$_2$ provides accurate results, simply and effectively.

- Oxygen permeation rates of multiple packages or films
- Determine product shelf life for an oxygen sensitive product
- Perform quality control of MAP packages off the production line (including packages with very limited headspace)
- Conduct transportation and distribution studies
- Understand the effects of total package oxygen including package headspace as well as dissolved oxygen in a liquid product
- Detect packages with gross leaks
- Testing does not consume oxygen - ideal for long term oxygen studies
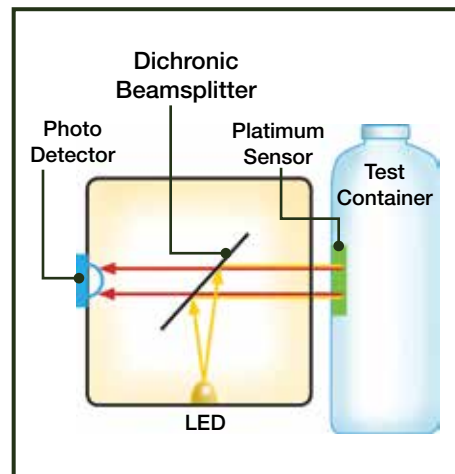


The OpTech-O$_2$ Platinum sensor can be deployed in three ways

- The platinum sensor comes ready to use in sticker format; reusable sensors for headspace applications and permanent sensors for liquid applications. These sensors are placed inside the package using MOCON'S convenient vacuum pen. The package is sealed and interrogated non-destructively with the external detector. This sensor type is ideal for package permeation studies, shelf life analysis, and distribution studies.
- ImPULSE™ platinum sensor measures oxygen inside opaque and retort packages.
- An invasive needle incorporating the platinum sensor for destructive headspace analysis.

### What is Fluorescence Technology?

Fluorescent chemistries such as the platinum chemistry used in the OpTech give off light when stimulated or excited by an external light source. The degree of stimulation is inversely proportional to the amount of oxygen present. The amount of fluorescence is then read by the OpTech Detector and reported as a percentage of oxygen present in the package. Fluorescence Technology does not consume oxygen making it ideal for long term oxygen studies.

### Why Platinum Chemistry?

- Increased measuring range
- Increased sensitivity
- Stable in ambient light
- Less affected by temperature changes
- Greater usable lifetime

### Calibration Solved Beautifully

Trust MOCON to come up with a break-through method of simple calibration for the OpTech. Just select "Calibrate" in the software menu or read the bar code on the CalCard. Take a reading of zero and room air and you're done. It's as simple as that. No gasses needed and one calibration works for all sensors. For the OpTech needle, use the CalVial™.

**Headspace & Permeation**



**Limited Headspace**



**Retort & Opaque Packages**



**Dissolved Oxygen and Total Package Oxygen**



**Leak Detection**



**MAP & Quality Control**



**Transportation Studies**



**Pharmaceuticals**



**Produce**



**Medical Device**



**Test Multiple Samples**

## OpTech Advantage

### Permeation



The OpTech Film Permeation Cell allows for oxygen transmission rate testing of medium barriers and high transmission rate films including real transmission rates of perforated films as used in fresh produce applications.

Use the ImPULSE sensor for retort and opaque packages and long term testing of the same package.





MOCON's vacuum pen enables easy placement of adhesive sensors

### Head Space - Leak Detection

The adhesive sensor requires no preparation and is designed to be inserted into headspace where it is immediately available for use. Testing is conducted through the package wall. The adhesive sensor is available in permanent or reusable versions. It can be used to measure dissolved oxygen. Accurate readings through colored packaging material.





The needle with the sensor in the tip is designed to measure headspace gases in limited volume environments.



The portability kit with tablet computer enables users to take the detector to the sample.

### Detector and Base

| | |
|---|---|
| Warm-up time | 20 minutes |
| Detector dimensions | Width: 1.3″ 3.30cm<br>Height: 1.9″ 4.83 cm<br>Depth: 9″ 22.86 cm (with needle), 6″ 15.24 cm (without needle) |
| Base dimensions | Width: 4.8″ 12.19 cm<br>Height: 2.7″ 6.8 cm<br>Depth: 10″ 25.40 cm |
| Measurement method | Epifluorence Confocal |
| Power | Standard Power USB port (2.5 watt) |
| Operating temperature | 10-35˚C |
| Operating humidity | 0-100% non-condensing |
| Compliance | CE/CSA/UL |
| PDF report options | Through program from computer |

### Sensors
### Adhesive and ImPULSE sensors

| | |
|---|---|
| Application | Adhesive: Sensor is inside package<br>ImPLUSE: Sensor is external |
| Repeatability (Certified) | +/- 0.015% (150 ppm) O$_2$ or 3% of reading, whichever is greater |
| Range | 0.001% (10 ppm) to 25% O$_2$ Permeation Mode<br>0.015% (150 ppm) to 25% Headspace Mode |
| Dissolved Oxygen Range | 0.006mg/L to 10.5mg/L |
| Warm up time | None |
| Adhesion | Sensors come ready to apply |
| Operating temperature | 5 – 40˚C |
| Operating humidity | 0-100% Sensors are designed to be immersed |

### Needle Sensor

| | |
|---|---|
| Application | Sensor in needle must be 100% in volume |
| Repeatability (Certified) | +/- 0.015% (150 ppm) O$_2$ or 2% of reading, whichever is greater |
| Range | 0.015% (150 ppm) to 25% Headspace mode |
| Warm up time | None |
| Operating temperature | 5 – 40˚C |
| Operating humidity | 0-100% non-condensing. Needle must not get wet |

### Computer Tablet and Case - subject to change

| | |
|---|---|
| Dimensions (w x d x h) | 5.9 x 9.21 x 0.61 in (15 x23.4x1.5cm) |
| Weight | Starting at 1.5 lb (0.69 kg) |
| Operating system | Windows® Professional 32 |
| Ports | 1 USB 2.0 |
| Carrying Bag | 9 x 2.5 x 12 in (22.86 x 6.35 x 30.48cm ) |

Conforms to ASTM F2714-08

## Accessories

- **Permeation Film Cell**
- **OpTech Needle**
- **ImPULSE External Sensor**
- **Reusable Internal Sensor**
- **Permanent Internal Sensor**
- **Portability Kit (computer tablet and bag)**
- **Bar code reader**

## Software features

- **Unlimited number of concurrent tests**
- **Continuously monitor O$_2$ (real time)**
- **Graph O$_2$ and transmission rate versus time**
- **Headspace values with pass/fail limits**
- **Advanced calibration for wines and spirits, provides increased accuracy at different alcohol % levels**
- **Bar code system automatically retrieves previous sample data**
- **Built-in temperature and barometric pressure compensation**

# mocon®

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### MOCON Commitment

The OpTech O$_2$ Platinum is another example of MOCON's long-standing commitment to innovation and quality in the design of package testing systems for total package integrity.

### Technical Support & Service

MOCON offers a variety of services designed to provide you with first class technical support. Whether you require next-day spare parts delivery, on-site training, N.I.S.T. certification or "turn-key" validation, our technical support staff can tailor a service program to fit your needs. Our goal is to provide the best in product support services.

### ERMEC

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