

Optical Fluorescence O<sub>2</sub> Analyzer  
for Measuring Headspace, Dissolved  
Oxygen, Oxygen Permeation and  
Package Leak



OpTech<sup>®</sup> - O<sub>2</sub> Platinum

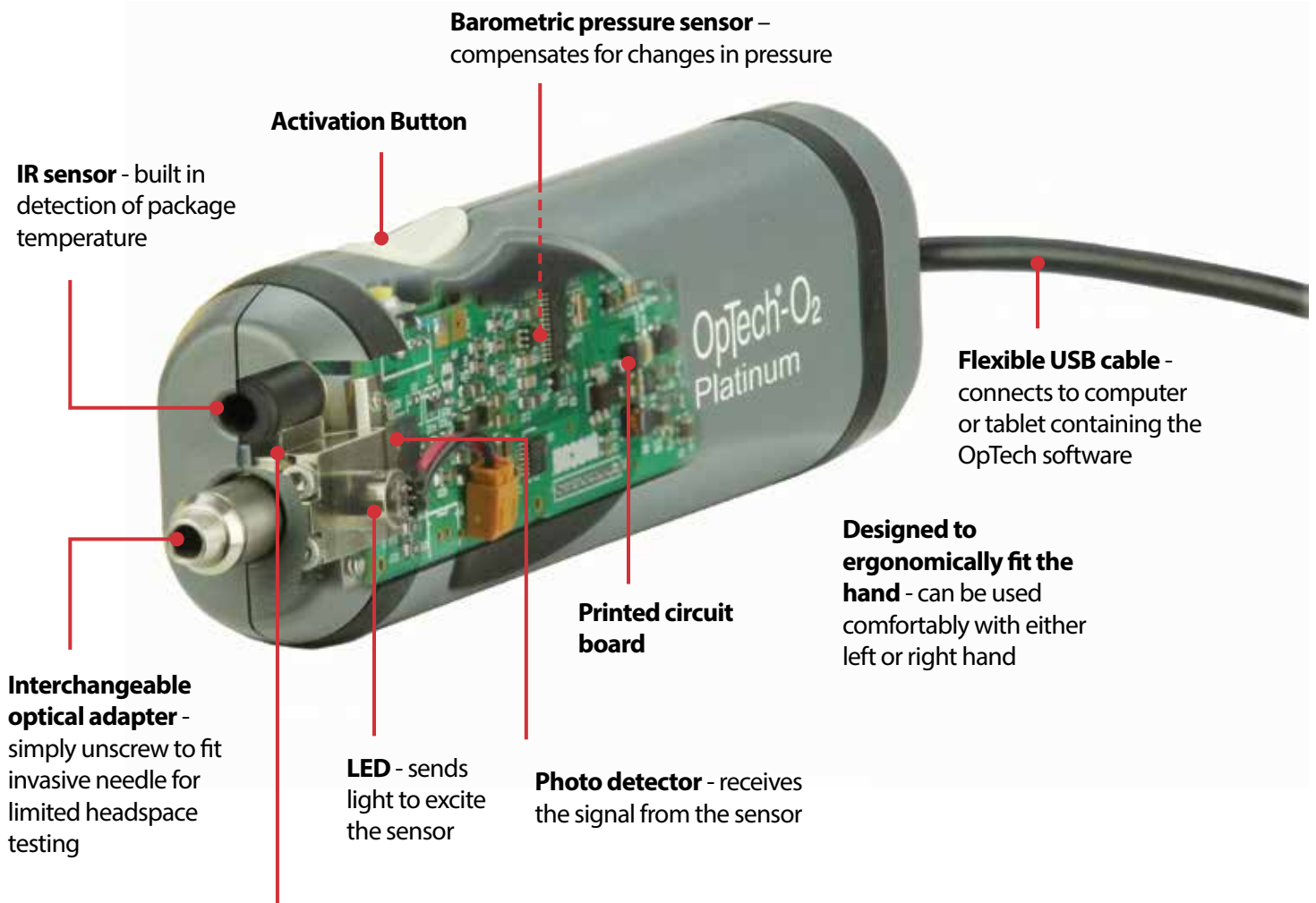
Versatile | Innovative | Easy-to-use



mocon<sup>®</sup>

# OpTech® - O<sub>2</sub> Platinum Advantages

- 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 - designed for limited headspace
- 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



**Dichronic beamsplitter**  
- enables both sending LED light and receiving signal from sensor

# The ideal multi-purpose analyzer – versatile, innovative and easy-to-use.

## OpTech®-O<sub>2</sub> Platinum. - measure headspace, dissolved oxygen, package leak, and oxygen permeation using optical fluorescence technology.

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.

### Headspace - Leak Detection - Package Permeation

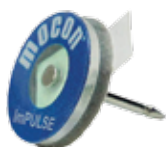
#### Sensor types:



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



Reads accurately through colored packaging materials



The ImPULSE™ sensor is designed to be inserted into retort and opaque packages, enabling the OpTech to monitor the headspace or dissolved oxygen. As the sensor is non-consuming, the ImPULSE is ideal for long term testing of multiple packages.



The OpTech needle with the sensor in the tip is designed to monitor dissolved oxygen or headspace gases in limited volume packages. To measure, simply place the tip of the needle into the headspace, and press the activation button. No gases are extracted.



### Film Permeation



The OpTech-O<sub>2</sub> Film Permeation Cell allows for oxygen transmission rate testing of medium and high transmission rate films including real transmission rates of perforated films as used in fresh produce applications.

### OpTech-O<sub>2</sub> 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



Headspace & Permeation



Limited Headspace



Leak Detection



MAP & Quality Control



Produce



Dissolved Oxygen and Total Package Oxygen



Retort & Opaque Packages



Transportation Studies



Pharmaceuticals



Medical Device



Test Multiple Samples

# Useful for food, beverage, pharmaceutical and medical applications.

## Software Features

- Unlimited number of concurrent tests
- Continuously monitor O<sub>2</sub> in real time
- One graph - percentage O<sub>2</sub> 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

Option:

CFR 21 Part 11 compliant

## The versatile OpTech-O<sub>2</sub> 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 right 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

Portability with Tablet (optional)



Flexible USB cable - no bulky optic cables that break easily

Ergonomic shape to fit left or right hand

Visible, non-UV light source for simple, targeted reading

# Measure oxygen and understand the effects on products and shelf life.

## Calibration Solved Beautifully

Trust MOCON to come up with a break-through method of simple calibration for the OpTech-O<sub>2</sub>. Just select "Calibrate" in the software menu or read the bar code on the CalCard, take a reading of "0%", then "Air" and you're done, it's as simple as that! No gasses needed and one calibration works for all sensors. To calibrate the OpTech-O<sub>2</sub> needle, use the CalVial™.



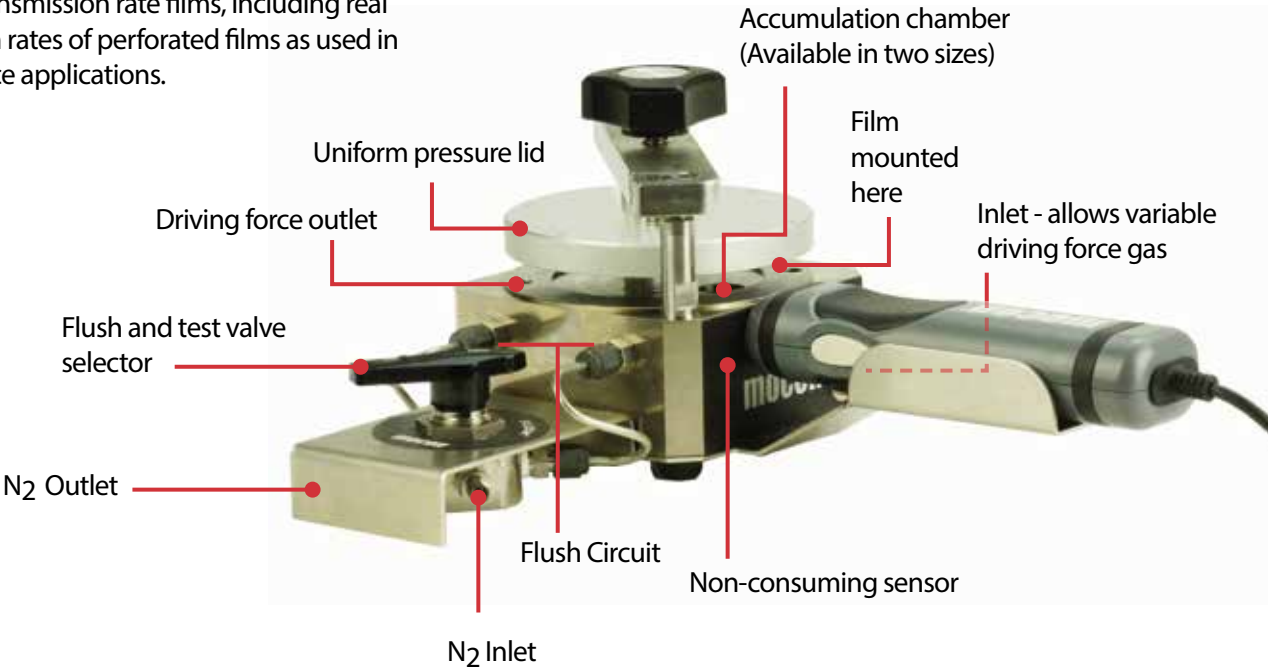
MOCON's vacuum pen enables easy placement of adhesive sensors



The portability kit with tablet computer enables users to conduct studies in the plant or field.

## Optional Permeation Test Cell

Ideal for testing transmission rates of medium and high transmission rate films, including real transmission rates of perforated films as used in fresh produce applications.



# OpTech®-O<sub>2</sub> Platinum Specifications

<b>Detector and Base</b>	
Warm-up time	20 minutes
Detector dimensions	Width: 1.3" 3.30cm Height: 1.9" 4.83 cm Depth: 9" 22.86 cm (with needle), 6" 15.24 cm (without needle)
Base dimensions	Width: 4.8" 12.19 cm Height: 2.7" 6.8 cm Depth: 10" 25.40 cm
Measurement method	Epifluorescence 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

<b>Sensors Adhesive and ImPULSE™</b>	
Application	Adhesive: Sensor is inside package ImPULSE: Sensor is external
Repeatability Adhesive (Certified)	+/- 0.015% (150 ppm) O <sub>2</sub> or 3% of reading, whichever is greater
Repeatability ImPULSE (Certified)	+/- 0.05% (500 ppm) O <sub>2</sub> or 3% of reading, whichever is greater
Range Adhesive	0.001% (10 ppm) to 25% O <sub>2</sub> Permeation Mode 0.015% (150 ppm) to 25% Headspace Mode
Range ImPULSE	0.05% O <sub>2</sub> (500ppm) to 25% O <sub>2</sub>
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

<b>Needle Sensor</b>	
Application	Sensor in needle must be 100% in volume
Repeatability (Certified)	+/- 0.015% (150 ppm) O <sub>2</sub> 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

<b>Computer Tablet and Case - subject to change</b>	
Dimensions (w x d x h)	5.9 x 9.21 x 0.61 in (15 x 23.4 x 1.5cm)
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)

<b>CalCard®</b>	
Accuracy	+/-2% or +/-150 ppm, whichever is greater

<b>CalVial™</b>	
Accuracy	+/-150ppm

Conforms to ASTM F2714-08

## What is Fluorescence Technology?

Fluorescent chemistries such as the platinum chemistry used in the OpTech-O<sub>2</sub> give off light when stimulated or excited by an external light source. The rate of decay of the fluorescence is directly proportional to the concentration of oxygen present. This is 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

## MOCON® Commitment

These analytical instruments are another example of MOCON's long-standing commitment to innovation and quality in the support of our customers.

## Technical Support & Service

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

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