



## Oxygen Permeability Tester - OPT-210

ASTM D3985, ASTM F1927, ASTM F1307, ASTM F2622,  
ISO 15105-2, DIN 53380-3, JIS K-7126

### Applications

**OPT-210** Oxygen Permeability Tester is designed to test the oxygen transmission rate (OTR) of a wide range of packaging materials such as plastic film, composite film, coextrusion film, aluminum foil, aluminum-plated film, infusion bag, sheets, solar panel, cellophane, ceramics, porcelain, and various containers like bag, pouch, bottle, can, bowl, box that widely used in the industries of food, pharmaceuticals, personal care, household, electronics by coulometric sensor method.



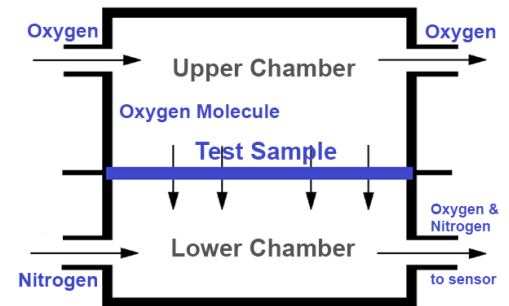
ASTM D3985 Standard Test Method for Oxygen Gas Transmission Rate through Plastic Film and Sheeting Using a Coulometric Sensor. This test method covers a procedure for determination of the steady-state rate of transmission of oxygen gas through plastics in the form of film, sheeting, laminates, coextrusions, or plastic-coated papers or fabrics. It provides for the determination of (1) oxygen gas transmission rate (OTR), (2) the permeance of the film to oxygen gas ( $PO_2$ ), and (3) oxygen permeability coefficient ( $PO_2$ ) in the case of homogeneous materials.

### Features

- Professional software with authority management and data tracking function, ensuring the safety and integrity of test data.
- 2 chambers work independently, support cross-testing.
- Fully automatic test with auto judgment and auto stop.
- Built-in advanced ARM control system, machine can run without a computer.
- Testing data and working status shown by LCD screen, machine can be operate by a wireless mouse.
- Advanced electromagnetic temperature control technology, program controlled, precision 0.1 °C.
- Dual gas flow humidity control method, with broad testing range, high precision (2%RH) and stable flow.
- Precise enough to test high barrier material like aluminum foil.
- Machine can expend upper limit of test range to 26000  $cm^3/m^2 \cdot 24h$  with additional accessories
- Machine can test various containers such as bag, pouch, bottle, can and bowl with package-testing accessories
- Sensor over-range protection.
- Professional software with simple interface, easy to use and convenient to set test process.
- Real time display of transmission rate, water vapour concentration, temperature and humidity.
- Professional test report can be exported as Office Word or PDF.
- Can expend to 12 chambers maximum.

## Working Principle

Coulometric sensor method. Test sample is fixed in the middle of test chamber to separate the chamber into upper room and lower room. When oxygen and nitrogen flow in upper and lower room respectively, the oxygen molecules penetrate through the sample into the lower room, and coulometry sensor system detect and analyze the oxygen contented and calculate the oxygen transmission rate. When testing the container, oxygen will be released outside and nitrogen inside of the container.



## Technical Specifications

|                         |  |
|-------------------------|--|
| Model                   | OPT-210  |
| Chamber Qty.            | 2  |
| Test Range              | 0.02 ~ 16500 cm <sup>3</sup> /(m <sup>2</sup> • 24h) (for film)<br>Max. possibility: 260000 cm <sup>3</sup> /(m <sup>2</sup> • 24h)  |
| Test Accuracy           | 0.001 cm <sup>3</sup> /(m <sup>2</sup> • 24h)  |
| Test Area               | 50.24cm <sup>2</sup> (0.785 cm <sup>2</sup> optional)  |
| Temperature Range       | 15 ~ 45°C (5 ~ 55°C optional)  |
| Temperature Accuracy    | ± 0.1°C  |
| Humidity Range          | Dryness: 0%RH, humidity: 30 to 90%RH, 100%RH   |
| Humidity Accuracy       | ± 2%RH   |
| Sample Size             | Φ100mm   |
| Sample Thickness        | ≤ 2mm  |
| Sample Qty.             | 1 ~ 2 pcs  |
| Carrier Gas             | 99.999% N <sub>2</sub> (user provide)  |
| Gas Supply Pressure     | 0.1~0.2MPa   |
| Carrier Gas Port        | Φ3mm   |
| Environment Temperature | 23°C   |
| Dimensions              | 600 × 460 × 360mm  |
| Weight                  | 80kg   |
| Power                   | 1000W  |
| Standard Configuration  | <ul style="list-style-type: none"><li>▪ OPT-210 Oxygen Permeability Tester 1 set</li><li>▪ Power cable 1 pc</li><li>▪ RS 232 communication cable 1 pc</li><li>▪ Sample cutter 1 pc</li><li>▪ Sealing grease 1 pc</li><li>▪ Metal gas pipe 5 m</li><li>▪ Ferrule connector 2 pcs</li><li>▪ Standard film 1 box</li><li>▪ Allen wrench 2 pcs</li><li>▪ Injector 1 pcs</li><li>▪ Sealing Ring 6 pcs</li><li>▪ M4 spanner 1 pc</li><li>▪ Cross screwdriver 1 pc</li><li>▪ Mouse 1 pc</li><li>▪ User manual and operation regulations</li></ul> |

## Please Note

Oakland Instrument is always dedicated to the innovation and improvement of product performance and function. Therefore, technical specifications are subject to change without further notice. Please visit our website at [www.oaklandinstrument.com](http://www.oaklandinstrument.com) for the latest updates. Oakland Instrument reserves the rights of final interpretation and revision

|          |   |
|----------|---|
| Note     | : Prices for accessories are valid only when ordered with the main unit                           |
| Prices   | : Ex Works: Minneapolis, MN USA /<br>or nearest Distribution Center – depending upon availability |
| Delivery | : Approx. 6 - 8 weeks depending on stock availability   |
| Warranty | : 12 months limited   |

## Ordering Information

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