

# CSI-178: Limiting Oxygen Index (LOI) Tester



## BENEFITS

- ✓ User Friendly
- ✓ Low Maintenance
- ✓ Accurate and Repeatable Test Results
- ✓ Precision Gas Flow Metering

## PRODUCT DESCRIPTION

The CSI Limiting Oxygen Index Tester is used to determine the relative flammability of plastics and other materials in rod, film or composite form. The relative flammability is determined by measuring the minimum concentration of oxygen in a slow-rising mixture of oxygen and nitrogen that will support combustion.

The CSI-178 provides a means for safely determining the relative flammability of materials by measuring the minimum oxygen concentration that will support combustion.

This table top unit includes a Test Column and controls that are all mounted in a metal stand. The apparatus has individual oxygen and nitrogen gas systems that feed into a dispersion chamber below the glass bead bed. The gas control includes filter, pressure gage, gas flow needle valve and rotameter. The rotameters have a permanent scale printed directly on the flow tubes. A vertical guide line permits zeroing in tangentially on the center of the float ball for ease of reading. The measured values of oxygen and nitrogen (volumetric flow in cc per minute), are used to calculate the Oxygen Index.

The test specimens are burned in a precisely controlled atmosphere of nitrogen and oxygen. The operator adjusts the supply gases and uses the flowmeter readings to calculate the oxygen index.



## TECHNICAL DATA

### Standard Features:

- ✓ Easy to Operate, only ignite specimen and adjust gas flow
- ✓ Flexible Sample Testing – Specimens may be in rod, film or composite form
- ✓ Uniform Combustion Atmosphere – Nitrogen and oxygen are fully mixed in a special dispersion chamber and glass bead bed before entering column
- ✓ Precision Gas Flow Metering, flowmeters allow precise control of gases
- ✓ NIST Calibrated Twin Gas Flowmeters with Control Needle Valves
- ✓ Twin Gas Pressure Gages (0 to 100psi)
- ✓ Chimney Gas Dispersion Chamber with Glass Bead Bed
- ✓ Rigid Specimen Holder
- ✓ Test Column is made of Heat Resistant Glass

### Optional Features:

- ✓ Smoke Density Measurement System, includes Smoke Density Detector and Chart Recorder – Records variations in smoke generation throughout test (120VAC 60Hz or 230VAC 50Hz)
- ✓ Non-rigid Specimen Holder (for film, sheet, etc.)

### Physical and Shipping Dimensions:

Approx. Physical Dimensions:	13"W x 13"D x 20H"
Approx. Physical Weight	35 lbs.
Approx. Shipping Dimensions	21" x 17" x 32"
Approx. Shipping Weight:	100 lbs.

### Installation Requirements

Gas Requirement:	Commercial grade or better Nitrogen (N <sub>2</sub> ) and Oxygen (O <sub>2</sub> )
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### Applicable Test Standards:

- ASTM D2863
- ISO 4589-1
- ISO 4589-2