LUMETRICS®

Precision Measurement Solutions

OptiGauge MIR

Mid-infrared Measurement System

Description

The OptiGauge MIR system is the latest advancement in optical metrology solutions from Lumetrics.

The development of the OptiGauge MIR system was driven by customer requirements to measure advanced materials that are transparent in the Mid Infrared (MIR) but opaque in visible to Near Infrared (NIR) light.

Prior to the OptiGauge MIR, commercially available optical metrology systems for advanced applications for defense, semi-conductor, medical, space and other applications had been lacking.

The OptiGauge MIR system is capable of measuring a variety of materials such as:

- Silicon
- Chalcogenide Glasses
- Germanium
- Gallium Arsenide
- Nano Composite Optical Ceramic
- Cadmium Telluride

Technical Overview

The OptiGauge MIR system utilizes Lumetrics proven methodology of low-coherence interferometry, but unlike the OptiGauge II that measures at 1310nm the OptiGauge MIR employs a 2.8µm wavelength.

The OptiGauge MIR measures materials that have an optical thickness up to 40mm.

Material thickness measurement and optical path length is a function of Group Refractive Index (GRI). To determine the max thickness capability for a specific material it is necessary to divide the optical thickness by the GRI.

For example, Germanium has a GRI of 4.1161 at 2.8µm. The OptiGauge MIR can measure Ge with a material thickness of up to 10mm.

The OptiGauge MIR measures materials in a non-destructive manner thus reducing waste in comparison to other methods resulting in positive economic impact.

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"Let our engineering team solve your toughest measurement problems."

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About Lumetrics

Lumetrics has been providing precision optical metrology solutions to leading edge companies throughout the world since 2003.

Lumetrics OptiGauge systems have been deployed in R&D and QA Labs as well as in production environments.

Customer purchase Lumetrics OptiGauge systems for a variety of reasons including:

- Improving current metrology processes
- Product Development
- Product Quality & Compliance
- Waste Reduction

Our customers are the reason for our success and steady growth.

Advanced solutions such as the OptiGauge MIR will continue to propel Lumetrics into the future.

For questions please contact;
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OptiGauge MIR Specifications

Measurement Method	Low-coherence Interferometry
Measurement Wavelength	2800 +/- 100nm
Software	Lumetrics OptiGauge Control Center version 8.1
Max Measurement Range	40mm*
Units	µm, mm, mil, in
Accuracy and Repeatability	+/- 1µm
Measurement Rate	2Hz
Power Requirements	AC110V-240V 50/60Hz, 20 Watts
Dimensions	16.25"W x 11.1"H x 23.8"D
Weight	45lbs
Operating Temp Range	(59º - 86º F) (15º-30º C)
Operating Relative Humidity	10%-90% (non-condensing)
Output Connectivity	RS-232
Measurement Probe	Optical fiber with matched fixed length fiber cable up to 5m in length.

**Individual maximum material thickness range determined by optical thickness by material GRI @ 2.8nm*

The OptiGauge MIR system is an advanced solution required by a select group of customers. Not everyone has a need to measure materials such as those listed, but we are pleased to offer such a solution to those who do.