

# OptiGauge<sup>®</sup> EMS

Non-Contact Thickness  
Measurements from  
12  $\mu\text{m}$  to 50 mm



Our patented optical interferometer-based technology allows you to measure the absolute thickness of virtually any translucent or lightly absorbing materials. Using an infrared LED signal transmitted through the optical probe, reflections from each surface of the sample material (top, bottom, and internal) are analyzed using sophisticated software, and the absolute thickness is calculated and displayed to the operator.

The OptiGauge EMS provides the ease of use, reliability, and accuracy that leading manufacturers have come to rely on from Lumetrics<sup>®</sup> for over 10 years. Using a built-in laser, the system is continuously calibrated, eliminating the need for periodic calibration. Ultra-stable design delivers repeatability and accuracy traceable to NIST standards.

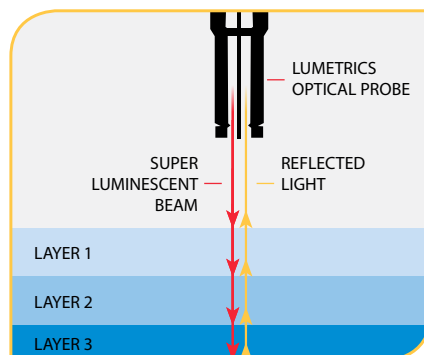
## Features

- Non-contact thickness measurements
- Measurement range: 12  $\mu\text{m}$  to 50 mm
- Internal self-calibration
- NIST traceability
- Accuracy  $\pm 1.0 \mu\text{m}$
- Desktop or rack mount

## Typical Applications

- Float glass
- Single- and multi-lens optics and lens stacks
- Alignment of lenses in optical assemblies
- Medical balloons and tubes: top wall, inside diameter, bottom wall, outside diameter

## Measurement Technology



**How it works:** The optical probe directs invisible 1310nm infrared light through transparent, translucent or colored materials and sends reflections for each internal surface back to the OptiGauge, where highly advanced software provides instant analysis in an easy-to-use graphical interface.



## System Components

- OptiGauge EMS
- Controller
- Monitor, keyboard, mouse
- Optical probe



## Off-Line or On-Line

- Ideal for R&D, QC or process control
- Standard and custom fixtures for off-line and on-line applications
- Customized software available
- Installation and training provided

## About Lumetrics

For more than a decade, Lumetrics has provided precision measurement solutions to leading edge companies throughout the world. Our systems are deployed in quality, R&D labs, and production floors. We provide real-time measurements to improve yield, reduce cost, improve quality, and meet compliance requirements. Our commitment to our customers sets us apart from the competition.

1565 Jefferson Rd, #420  
Rochester, NY 14623  
585-214-2455

sales@lumetrics.com  
engineering@lumetrics.com

[www.lumetrics.com](http://www.lumetrics.com)

## OptiGauge Core Unit

OptiGauge EMS — Extended Thickness Measurement System	
<b>Part #</b>	<b>10000-22</b>
Measurement Method	Low Coherence Interferometry - 1310 nm Measurement Wavelength
Common Measurement Materials	Ex. Glass, Plastic, Tubing, Silicon, Coated Metals
Maximum Number of Layers Measured	Up to 20
Thickness Measurement Range	12 µm to 50 mm, dependent on refractive index of sample material
Measurement Units	µm, mm, mils, inches, µin
Accuracy (Published accuracy at temperature range 15° to 30°C)	±1.0 µm
Repeatability	±1.0 µm 1σ
Measurement Scan Rate	20 Hz
Power Requirements	AC 110 V – 240 V 50/60 Hz, 20 watts / 30 VA
Dimensions	425 mm (w) × 457 mm (d) × 140 mm (h) / 16.75" (w) × 18" (d) × 5.5" (h)
Weight	20lbs./9kg
Operating Temperature Range	15° to 30°C (59° to 86°F)*
Operating Relative Humidity	10 to 90% (non-condensing)
Data Output	RS-232
Output Connectivity	RS-232, aux digital I/O

\* Standard probe operating temperature -40° – 185°F (-40° – 85°C), higher temperature options available.

## OptiGauge Controller

Operating System	Microsoft® Windows 7 64-bit
Processor	Intel® Core i7, Quad with SMT, 3.4
Power Supply	400 W Universal Input, controller 190–210 watts / 200–220 VA; monitor 15 watts / 23 VA
Software	Lumetrics OptiGauge Control Center, Microsoft Excel
Dimensions	482 mm (w) × 480 mm (d) × 88 mm (h) / 19" (w) × 18.9" (d) × 3.46" (h)
Weight	28 Lbs./13 kg

## Measurement Probes

Part #	13000-75	13000-72
Focal Length (Working Distance)	100 mm	50 mm
Measurement Spot Size	80 µm	40 µm
Optical Fiber Length	3 M standard, up to 1000 M	3 M standard, up to 1000 M
Angular Tolerance	±1.9°	±3.5°
Operating Temperature Range	-40° – 85°C	-40° – 85°C

(Specifications subject to change without notice)



**Lumetrics has additional OptiGauge models to choose from including:**

- **OptiGauge II**
  - Thickness Range 12 µm to 15 mm
  - Multiple probe compatible
- **OptiGauge LT**
  - Thickness Range 12 µm to 3.5 mm
  - Single probe configuration

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