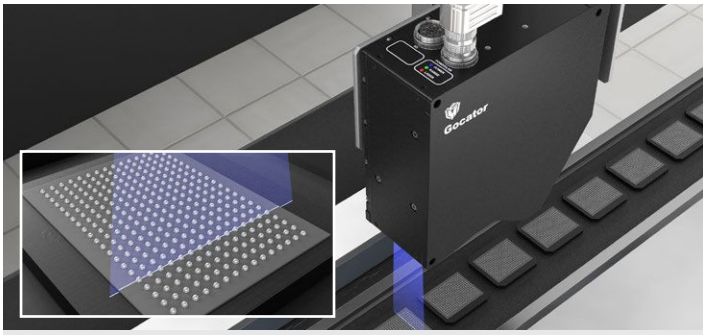
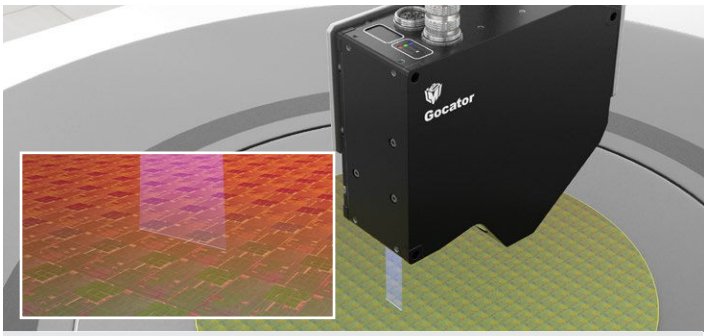
LMI TECHNOLOGIES

Gocator® 6300 Series

SMART 3D LINE PROFILE SENSORS



BGA Inspection with Gocator 6320



Silicon Wafer Inspection with Gocator 6310

The Gocator 6300 Series is a new class of smart 3D laser profiler engineered from the ground up for ultimate 2D/3D scanning performance. These powerhouse sensors provide an unrivaled combination of speed, precision, and scan coverage for superior inspection results in Semiconductor, EV Battery, and Consumer Electronics applications.

- **Over 6500 points per profile for precision 3D measurement and inspection**
- **X Profile Data Interval down to < 2.1 microns (at 13.4 millimeters FOV)**
- **Z-repeatability down to 0.15 microns**
- **Scan rate up to > 1800 Hz full-frame (FOV/MR)**
- **Field of View up to 31 mm (at < 4.3 microns X Profile Data Interval)**
- **On-sensor measurement tools and I/O connectivity**
- **Onboard multi-sensor alignment and networking support**

PROFINET® Modbus EtherNet/IP™ ASCII

HIGH SPEED. HIGH PRECISION. LARGE FOV.

Gocator 6300 Series line profilers deliver a supremely effective combination of fast scan rates to meet inline production cycle times, with high X Profile Data Intervals for precision measurement at large fields of view.

OPTIMAL DATA QUALITY

Gocator 6300 Series sensors feature telecentric line generation that **improves small defect and edge detection** by minimizing occlusions. Gocator 6300 sensors also feature a high resolution, high numerical aperture custom camera lens designed for **increased angular acceptance, maximum light collection, and optimal data quality**.

IMPROVED SCAN PERFORMANCE ON CURVED AND SHINY TARGETS

The Gocator 6300 Series leverages a reengineered optical design that optimizes the sensor's **laser line quality** to deliver **higher signal quality** and **increased measurement accuracy**, especially on reflective and curved surfaces.

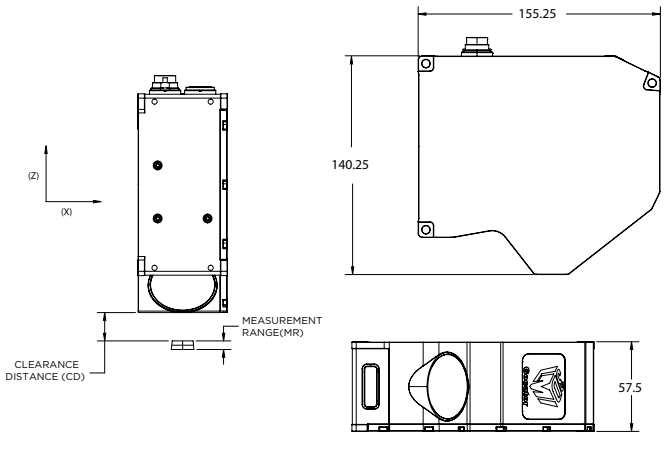
SMART DESIGN FOR MAXIMUM PERFORMANCE AND COST EFFICIENCY

Gocator 6300 series sensors are built on LMI's leading smart sensor design architecture, which includes an easy-to-use web-based interface, on-sensor measurement tools, data processing, I/O connectivity, native multi-sensor networking, and more. The result is the most cost-efficient 3D sensor solution on the market.

6300 SERIES MODELS	6310	6320
Data Points Per Profile [1]	> 6500	> 6500
Scan Rate (Full FOV/MR) (Hz) [2]	> 1700	> 1800
X Profile Data Interval (µm) [1]	< 2.1	< 4.3
Linearity Z (+/- % of MR) [3]	0.015	0.015
Repeatability Z (µm) [3]	0.15	0.30
Clearance Distance (CD) (mm)	18.15	57.50
Measurement Range (MR) (mm)	5.5	17
Field of View (FOV) (mm)	13.4 - 14.5	28 - 31
Laser Class	2, 3R, 3B	2, 3R, 3B
Weight (kg)	1.7	1.7
Dimensions (mm)	155.25 x 140.25 x 57.50	145.25 x 151.71 x 57.50

ALL 6300 SERIES MODELS	
Interface	Ethernet 2.5 Gbps
Inputs	Differential Encoder, Laser Safety Enable, Trigger
Outputs	2x Digital output, RS-485 Serial (115 kBaud)
Factory Communication	PROFINET, Modbus, EtherNet/IP, ASCII, Gocator
Input Voltage (Power)	+24 to +48 (30 Watts)
Housing	Gasketed metal enclosure, IP67
Operating Temperature	0 to 35°C
Storage Temperature	-30 to 70°C
Vibration Resistance	10 to 55 Hz, 1.5 mm double amplitude in X, Y, and Z directions, 2 hours per direction
Shock Resistance	15 g, half sine wave, 11 ms, positive and negative for X, Y, and Z directions
Scanning Software	Browser-based GUI and open source SDK for configuration and real-time 3D visualization. Open source SDK, native drivers, and industrial protocols for integration with user applications, third-party image processing applications, robots, and PLCs.

(**1**) This specification is achieved with uniform spacing enabled
(**2**) Speed is calculated from default configuration (full field of view and full measurement measurement range)
(**3**) These results are achieved with LMI standard target and optimized sensor configuration.



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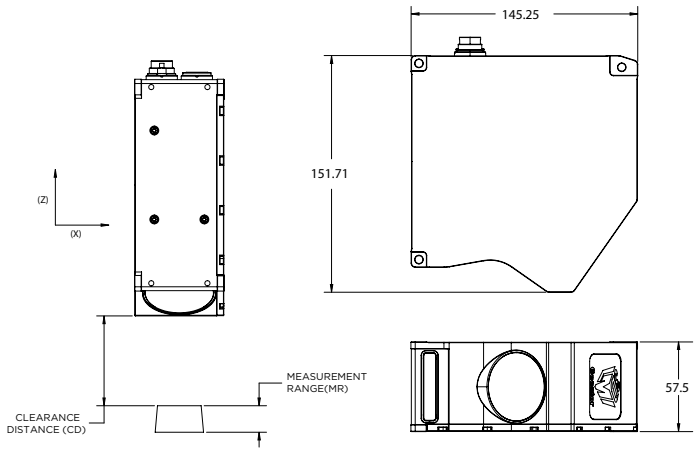

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