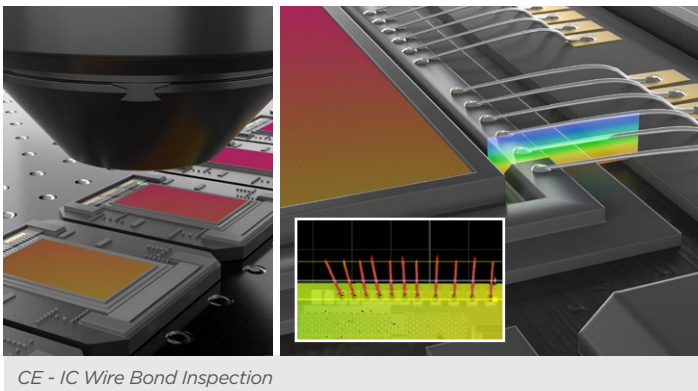
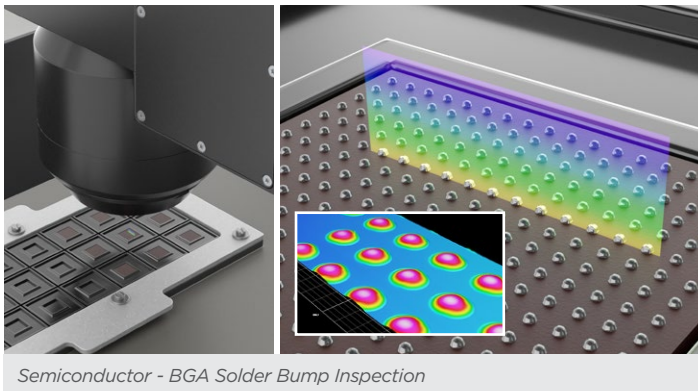


# Gocator® 4000 Series

## SMART 3D COAXIAL LINE CONFOCAL SENSORS



The Gocator 4000 Series introduces **coaxial line confocal sensor technology** to complement LMI's existing Line Confocal product portfolio. These sensors provide high-speed, high-resolution, versatile and shadow-free 3D inline inspection performance with outstanding angular range (Max Slope Angle up to +/- 85 degrees) for manufacturing applications in Semiconductor, Consumer Electronics, EV Battery, and many more.

- 1920 Points per Profile for High-Resolution, Shadow-Free 3D Measurement and Inspection
- X Resolutions Up to 1.9 microns
- Fields of View Up to 5.0 millimeters
- Max Slope Angle Up to +/- 85 degrees
- Speeds Up to 16 kHz+ at Limited Measurement Range (With Gomax NX or PC Acceleration), 4 kHz+ at Full Measurement Range
- On-sensor Measurement Tools and I/O Connectivity
- Easy Mounting and System Integration



### HIGH RESOLUTION. HIGH SPEED.

The Gocator 4000 Series delivers exceptional X-resolutions and optimal Z-performance for fine feature detection and precision 3D shape and 2D intensity measurement. This is paired with fast scan rates up to 16 kHz+ (with GoMax NX or PC acceleration) to meet inline cycle times and provide a proficient scanning and inspection solution for rapid deployment into your production line.

### VERSATILITY TO HANDLE ALL MATERIALS, PARTS, AND FEATURES

Accurately scan any material type or part shape—everything from miniscule solder bumps on semiconductor BGAs to machined-metal cell phone housings and transparent glue path applications in wearable consumer electronics assemblies such as smart watches.

### ZERO SHADOWING EFFECT. OUTSTANDING ANGULAR RANGE.

Coaxial optical design allows the sensor to scan simple and complex surface topologies with **zero shadowing effect** for improved data quality and more accurate measurement results on steep-angled features (e.g., step height of PCB chips), deep grooves (e.g., wafer die fractures), and protruding components (e.g., IC wire bonds). The Gocator 4000 Series' optics also deliver **outstanding angular range** (Max Slope Angle up to +/- 85 degrees) for excellent performance on specular and highly curved surfaces (e.g., chamfer of cell phone display glass).

### MEASUREMENT AND INSPECTION SOFTWARE INCLUDED

Gocator® 4000 sensors are built on LMI's leading smart sensor design architecture that includes an easy-to-use web-based interface with built-in measurement tools, I/O connectivity, and sensor acceleration using a GoMax NX Smart Vision Accelerator or PC.

4000 SERIES MODELS	4010	4020
Data Points / Profile	1920	1920
Scan Rate (Hz) *	4300 - 14 000	4500 - 16 000
Resolution X (µm) (Profile Data Interval)	1.9	2.6
Linearity Z (+/- % of MR) **	0.05	0.02
Repeatability Z (µm) **	0.12	0.25
Resolution Z (µm)	0.25	0.50
Clearance Distance (CD) (mm)	9.3 +/-0.2	27.8 +/-0.3
Measurement Range (MR) (mm)	1.05	2.5
Field of View (FOV) (mm)	3.5	5.0
Max Slope Angle (°)	45 - 85	30 - 85
Dimensions (mm)	183 x 82 x 459	183 x 82 x 428
Weight (kg)	10.4	9.6

#### ALL 4000 SERIES MODELS

Interface	Gigabit Ethernet	<p>* Speed ranges are from default configuration (full field of view and full measurement range) to high speed configuration (reduced field-of-view and measurement range, uniform spacing disabled, optimized data spacing and output)</p> <p>** These results are achieved with LMI standard target and optimized sensor configuration</p>
Inputs	Differential Encoder, Trigger	
Outputs	2x Digital output	
Factory Communication	PROFINET, Modbus, EtherNet/IP, ASCII, Gocator	
Input Voltage (Power)	+24 to +48 VDC (77 Watts); Ripple +/- 5%	
Housing	Gasketed metal enclosure, IP50	
Operating Temperature (°C)	15 to 35	
Storage Temperature (°C)	-30 to 70	
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.	

