3D SMART SENSORS FOR INLINE INSPECTION

Gocator 2410

Gocator 3210

Meet Gocator
Two trusted 3D technologies for inline metrology-grade inspection.

LASER PROFILERS

Gocator Point and Line Profile Sensors inspect any moving target with height resolutions down to 1.1 μm, sampling speeds up to 32 kHz, and a suite of built-in 3D measurement tools and smart features to deliver a complete 3D inspection solution.
Gocator Stereo Snapshot Sensors generate 3D point clouds with a single scan trigger. These sensors offer built-in 3D measurement tools to inspect any stationary target, or automate assembly using robot guidance.
WELCOME TO FACTORYSMART® INSPECTION

**Gocator.**

Gocator 3D smart sensors connect seamlessly with factory infrastructure to report measurement results, monitor trends from a web browser, upgrade sensors over the Internet, or network with other machinery to exchange or combine data.

**Easy to Use**

Features such as a web-browser driven point-and-click environment for rapid configuration, built-in measurement tools and rich I/O for communicating results make it easy for factory technicians to get the results they need.

**Low Latency with No External Controller Required**

Real-time measurement capabilities minimize lag between data acquisition and decision outputs, which means factories can consistently meet their throughput targets.

**Built-In Measurement Tools**

Built-in tools provide a drag and drop environment with full 3D visualization, and allow users to set measurements based on the specific feature that needs to be inspected.

**Customizable**

Sensor customization allows users to develop and embed their own custom measurement tools directly into the firmware itself—with the same functionality and ease-of-use as built-in native tools.

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**3D IS OUR EXPERTISE**

At LMI Technologies we work to advance quality and productivity with 3D sensor technology. Our award-winning, FactorySmart® sensors improve inline factory production by providing fast, accurate, reliable inspection solutions that leverage smart 3D technologies. Unlike contact-based measurement or 2D vision, our products remove complexity and dramatically reduce implementation cost while achieving repeatable, high-precision measurement.
Gocator is used in all major inline factory automation processes to achieve 100% quality control.

**PART MANUFACTURING**
Most parts from processes such as casting, machining, and injection molding are never inspected. Gocator provides 100% inline quality control to ensure every part meets key manufacturing tolerances.

**COMPONENT ASSEMBLY**
As parts come together to build product assemblies, how each part fits with another determines overall assembly quality. Gocator verifies proper adhesion, fastening, surface gap & flush and more.

**FINISH AND PACKAGING**
Finish and sealing is critical to product acceptance. Gocator ensures finished products meet strict quality standards, are packaged correctly, and are ready for shipment.

**WHY SMART 3D?**
2D vision alone cannot achieve 100% quality control, which is why you need to invest in a smart 3D solution.

» Volumetric measurement (X, Y, and Z-axis) provides shape and position related parameters—necessary for robot handling

» Contrast invariant, ideal for inspecting low contrast objects

» Immune to lighting variation and ambient light

» Higher repeatability due to integrated optics, lighting, and pre-calibration

» Simpler to build multi-sensor setups for large object inspection
PART MANUFACTURING INSPECTION

**COMMON PROBLEM:**
PART SHAPE AND POSITION VARIATION IN AN INLINE PROCESS

**FactorySmart® SOLUTION:**
ACHIEVE HIGH GAUGE REPEATABILITY AND REPRODUCIBILITY (GRR) WITH ANCHORING AND PART MATCHING

- Built-in anchoring tracks the movement of parts within the sensor’s field of view and corrects for variations in the height and position of parts.
- Part matching automatically performs realignment before applying Gocator’s built-in measurement tools—eliminating the need to mechanically realign parts.
Detecting surface level of molten metal

Brake caliper inspection in a multi-sensor configuration, stitching three views into a single 3D point cloud

Checking the clips of injection molded parts for correct formation, including detection of common defects such as short shot and warpage

Detecting surface level of molten metal

Brake caliper inspection in a multi-sensor configuration, stitching three views into a single 3D point cloud

**WHY YOU NEED 3D GEOMETRY MEASUREMENT**

Unlike 2D, 3D measurement produces geometry (i.e., shape) data that is required to determine if a part meets key assembly, fit, and finish tolerances.
Laser line measurement of a plastic extrusion to ensure the correct spacing between teeth

**COMMON PROBLEM:**
**COMPLEX AND TIME-CONSUMING SYSTEM SETUP**

**FactorySmart® SOLUTION:**
**WEB-ENABLED TECHNOLOGIES AND ALL-IN-ONE DESIGN**

- Connect to a sensor with any web browser.
- Generate scans of your object/feature with sophisticated control over triggering, exposure, resolution, part detection, and filtering/gap filling.
- Built-in drag and drop measurement for full geometric gauging.
- Ethernet protocols and direct I/O are built-in and communicate pass/fail decisions directly to factory equipment (robots, PLCs, or direct I/O).
Snapshot sensor capturing surface data of a 3D printed turbine part

3D Printing Inspection

SMART BENEFIT:
INDUSTRIAL SENSOR DESIGN FOR HIGH MEASUREMENT RELIABILITY AND LONG PRODUCT LIFE

» Rugged housing, small form factor, and lightweight design make Gocator sensors ideal for fitting into small spaces and mounting onto robots.

» IP67-rated design based on industrial grade parts offers long lifetimes in continuous operation.

WHY YOU NEED 3D ◆ THE BENEFIT OF COMBINING 2D + 3D

Gocator laser profilers combine 3D and 2D capability for total quality inspection. In addition to 3D shape measurements, the intensity of the projected laser light is used to create a 2D image of the surface of a part. This information can be used to extract surface markings like bar codes and printed text.
COMPONENT ASSEMBLY INSPECTION

**Adhesive Bead Inspection**
- Ability to analyze the volume, geometry, and location of beads or drops
- Complex inspection of adhesive bead within grooves at small scale
- Inconsistent bead
- Excess adhesive
- Consistent bead
- Correct volume

**Weld Inspection**
- Inspecting gap prior to welding, resulting in high-quality welds and predictable behavior of the metal

**COMMON PROBLEM:**
NO CUSTOM MEASUREMENT TOOLS

**FactorySmart® SOLUTION:**
GOCATOR DEVELOPMENT KIT (GDK)

- Develop and embed your own custom measurement tools and make specialized measurements for applications with unique requirements, while protecting your IP.
- Create optimized custom firmware builds that run within the realtime OS of the Gocator.
- Use custom solutions on a variety of different sensors, all on a single platform.
- Run your own measurement tools in the Gocator Emulator for offline development, testing, and support.
Checking the tightness of a fastener through measurement of mating surface to nut surface.

Solder Paste Inspection

Accuracy to 1.8 µm in height allows for high-precision measurement of solder paste.

SMART BENEFIT: HIGH-SPEED 3D PROFILING OF COMPLEX SHAPES

Laser profilers are high-speed devices that generate a line profile by combining range data from the scanned part. You can then easily perform measurements on the profile for dimensioning and inspecting complex shapes.
COMPONENT ASSEMBLY INSPECTION

Full inline part inspection of completed PCBs, with 3D surface data used for complex measurements

Ability to detect the slightest variation in flushness between two parts

Correct pressure was applied and the mating surfaces are flush

Parts binded and did not mate correctly

COMMON PROBLEM:
NO TIME OR RESOURCES TO CREATE AND DEPLOY YOUR OWN MEASUREMENT TOOLS

FactorySmart® SOLUTION:
BUILT-IN MEASUREMENT TOOLS

» Built-in measurement tools make 3D measurement reliable, repeatable, and easy.
» No need to send 3D point cloud data to 3rd-party software.
» Tools include Gap & Flush, Groove, Countersunk Hole, Surface Edge, Surface Plane, and many more.
Robot arm mounted snapshot sensor capturing key rivet locations

Snapshot sensors are able to measure multiple gap & flush features within a single field of view. 3D surface data is cross-sectioned and measured for multiple profile views.

Rivet Inspection

Robot arm mounted snapshot sensor capturing key rivet locations

Surface data is analyzed for pass/fail

COMMON PROBLEM:
NEED VISION-GUIDANCE AND FLEXIBLE MEASUREMENT FOR ROBOTIC SYSTEMS

FactorySmart® SOLUTION:
ROBOT-FRIENDLY HARDWARE + SOFTWARE

» Gocator 3D smart sensors allow a robot to sense variations in its physical environment and adapt accordingly. Gocators are the “eyes” in vision guidance and enable essential applications such as pick-and-place.

» Gocator includes communication protocols to connect to any robot.
Inline surface inspection of brake rotors down to 1.1 μm Z resolution. Maximum and minimum height are measured, and an average is calculated to determine the acceptable surface finish.

**SMART BENEFIT:**
**HIGH-RESOLUTION 3D SHAPE AND SURFACE ANALYSIS**

Line profilers generate a high-resolution 3D height map of the target object. Built-in tools allow you to easily perform micron-level measurements of the object’s geometry and surface.

**WHY YOU NEED 3D:**
**ACCURATE SCANNING EVEN WITH OBJECT MOVEMENT**

Unlike 2D, 3D provides depth measurement information that prevents errors due to object movement—meaning objects can move anywhere within the sensor’s measurement range and still yield accurate results. This eliminates object fixturing requirements and improves overall system reliability.
Sealing Inspection

Inspection of yogurt cups to find faulty seals, regardless of surface artwork. Faulty surface is easily detected and tagged for removal downstream. Correctly sealed yogurt cup with a flat surface receives a PASS decision.

COMMON PROBLEM:
NEED TO MEET INLINE PRODUCTION SPEED

FactorySmart® SOLUTION:
SENSOR ACCELERATION

» Add Gocator Accelerator (GoX, a PC-based application) to share the processing load and achieve faster cycle times.

WHY YOU NEED 3D 😊 EASILY INSPECT LOW-CONTRAST OBJECTS

Unlike 2D intensity imaging, 3D is contrast invariant. This means shape is measured regardless of surface color—making 3D ideal for measuring low contrast objects. In addition, with 3D you don’t have to worry about ambient lighting or shadows affecting your scan results.
PRODUCT FINISH & PACKAGING INSPECTION

3-sensor configuration scanning finished tires, looking for bulges, runout, and groove geometry.

Character Identification

Low-contrast unscanned surface

Scanned tire with identifiable features

DOT-code is generated simultaneously from height data

WHAT IS “SMART” 3D?

ALL-IN-ONE | BUILT-IN MEASUREMENT TOOLS AND SMART FEATURES | WEB BROWSER BASED GUI
PRE-CALIBRATED | READY TO MEASURE OUT OF THE BOX
Volume of packing peanuts is determined by measuring the empty space in the box.

Single point profiler verifies fill level and lid tightness of packaged products.

**COMMON PROBLEM:**
**TARGET IS LARGER THAN A SINGLE SENSOR CAN CAPTURE**

**FactorySmart® SOLUTION:**
**EASY MULTI-SENSOR NETWORKING**

- A Master Hub synchronizes multiple Gocator sensors and combines scans into a single high-density 3D point cloud of the entire surface or target object.
- Built-in alignment and stitching makes working with multiple sensors easy.
PRODUCT LINEUP

LASER PROFILE SENSORS

**Gocator 1300 Series**
High-speed (32 kHz) Point Profilers for Dimensional Measurements
- Unique built-in part detection and profile generation
- Ideal for closed loop control or measuring high speed processes

**Gocator 2100 Series**
Low Cost, Entry-Level Line Profilers for Basic Inline 3D Inspection
- Handles all of your basic quality inspection needs
- VGA imager, 640 points per profile resolution
- Field-of-view up to 1260 mm
- Measurement range up to 800 mm

**Gocator 2300 Series**
Workhorse Line Profilers for Robust Inline 3D Inspection
- Handles a wide range of applications
- Megapixel imager, 1280 points per profile resolution
- Field-of-view up to 1260 mm
- Measurement range up to 800 mm

**Gocator 2400 Series**
Ultra High-Resolution Line Profilers for Advanced Inline 3D Inspection
- Handles difficult targets such as micro-features on small parts in high-speed applications
- 2-Megapixel imager, up to 1940 points per profile resolution
- Field-of-view (FOV) up to 32 mm
- Measurement range up to 25 mm
SNAPSHOT SENSORS

Gocator 2880
Dual Triangulation Line Profilers for 3D Inspection of Large Objects

- Two cameras maximize scan coverage and minimize occlusions for applications such as primary log scanning
- Megapixel imager, 1280 points per profile resolution
- Field-of-view up to 1260 mm
- Measurement range up to 800 mm

Gocator 3506
Metrology-grade 12 µm Sensor for Small Parts Inspection

- Detect fine features on small parts such as electronic enclosures, PCB and battery/IC connectors
- Fast scan rate (3 Hz full-field)
- 5-megapixel stereo camera minimizes occlusions
- High repeatability (2 µm) for reliable measurements at production speed

Gocator 3210
Metrology-grade 35 µm Sensor for Large Parts Inspection

- Detect features on large objects such as automotive cylinders
- Fast scan rate (4 Hz full-field)
- 2-megapixel stereo camera minimizes occlusions
- Wide field of view (FOV) up to 154 mm
# PRODUCT SPECS

## Gocator 1300 Series

<table>
<thead>
<tr>
<th>MODELS</th>
<th>1320</th>
<th>1340</th>
<th>1350</th>
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<td>0.0100 - 0.0450</td>
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<td>Recommended Laser Class</td>
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<td>3B</td>
<td>3B</td>
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<td>3B</td>
<td>3B</td>
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<td>Other Laser Class</td>
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<td>2M, 3R</td>
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<td>3B</td>
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<td>Recommended Package Dimensions (mm)</td>
<td>Side Mount (3R)</td>
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<td>30x120x149</td>
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<td>Recommended Package Dimensions (mm)</td>
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Optical models, laser classes, and packages can be customized. Contact LMI for more details. Specifications stated are based on standard laser classes. Resolution Z and Linearity Z may vary for other laser classes. Refer to specifications in the Gocator Point Profile Sensor user manual for more details.

## Gocator 2100 Series

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<td>Resolution Z (mm)</td>
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<td>0.013 - 0.037</td>
<td>0.009 - 0.060</td>
<td>0.055 - 0.200</td>
<td>0.092 - 0.488</td>
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<td>Resolution X (mm)</td>
<td>0.008 - 0.016</td>
<td>0.019 - 0.054</td>
<td>0.013 - 0.016</td>
<td>0.045 - 0.080</td>
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<td>Field of View (FOV) (mm)</td>
<td>47 - 85</td>
<td>96 - 184</td>
<td>158 - 365</td>
<td>308 - 687</td>
<td>390 - 1260</td>
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<tr>
<td>Recommended Laser Class</td>
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<td>3M</td>
<td>3M</td>
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<td>Other Laser Classes</td>
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<td>2M</td>
<td>3R</td>
<td>-</td>
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Optical models, laser classes, and packages can be customized. Contact LMI for more details. Specifications stated are based on standard laser classes. Linearity Z, Resolution Z, and Repeatability Z may vary for other laser classes. Refer to specifications in the Gocator Line Profile Sensor user manual for more details.
### Gocator 2300 Series

<table>
<thead>
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<tr>
<td>Linearity Z (+/- % of MR)</td>
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<td>0.006 - 0.004</td>
<td>0.003 - 0.007</td>
<td>0.019 - 0.060</td>
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<td>Resolution Z (µm)</td>
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<td>Repeatability Z (µm)</td>
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<td>Clearance Distance (CD) (mm)</td>
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<td>47 - 85</td>
<td>158 - 365</td>
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<tr>
<td>Field of View (FOV) (mm)</td>
<td>10.8 - 263</td>
<td>47 - 85</td>
<td>158 - 365</td>
<td>381 - 687</td>
<td>390 - 1260</td>
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</tr>
<tr>
<td>Recommended Laser Class</td>
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<td>Other Laser Classes</td>
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Optical models, laser classes, and packages can be customized. Contact LMI for more details. Specifications stated are based on standard laser classes. Linearity Z, Resolution Z, and Repeatability Z may vary for other laser classes. Refer to specifications in the Gocator Line Profile Sensor user manual for more details.

### Gocator 2400 Series

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<td>Resolution Z (µm)</td>
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<td>Resolution X (µm) (Profile Data Interval)</td>
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<td>14.0 - 16.5</td>
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<tr>
<td>Repeatability Z (µm)</td>
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<tr>
<td>Clearance Distance (CD) (mm)</td>
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<tr>
<td>Measurement Range (MR) (mm)</td>
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<td>Recommended Laser Class</td>
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<td>Other Laser Classes</td>
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Optical models, laser classes, and packages can be customized. Contact LMI for more details. Specifications stated are based on Recommended laser classes. Linearity Z, Resolution Z, and Repeatability Z may vary for other laser classes. Refer to specifications in the Gocator Line Profile Sensor user manual for more details.

### ALL 2300 SERIES MODELS
- **Scan Rate**: Approximately 170 Hz to 5000 Hz
- **Interface**: Gigabit Ethernet
- **Inputs**: Differential Encoder, Laser Safety Enable, Trigger
- **Outputs**: 2x Digital output, RS-485 Serial (15 kBaud), 1x Analog Output (4 - 20 mA)
- **Input Voltage (Power)**: +24 to +48 VDC (11 Watts); Ripple +/- 10%
- **Housing**: Gasketed aluminum enclosure, IP67
- **Operating Temperature**: 0 to 50°C
- **Storage Temperature**: -30 to 70°C
- **Vibration Resistance**: 10 to 55 Hz, 15 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, and PLCs.

### ALL 2400 SERIES MODELS
- **Scan Rate**: 200 Hz (expanded full window), 400 Hz (G23xx equivalent full window), up to 5 kHz
- **Interface**: Gigabit Ethernet
- **Inputs**: Differential Encoder, Laser Safety Enable, Trigger
- **Outputs**: 2x Digital output, RS-485 Serial (15 kBaud), 1x Analog Output (4 - 20 mA)
- **Input Voltage (Power)**: +24 to +48 VDC (9 Watts); Ripple +/- 10%
- **Housing**: Gasketed aluminum enclosure, IP67
- **Operating Temperature**: 0 to 50°C
- **Storage Temperature**: -30 to 70°C
- **Vibration Resistance**: 10 to 55 Hz, 15 mm double amplitude in X, Y and Z directions, 1 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, and PLCs.
PRODUCT SPECS

## Gocator 2800 Series

<table>
<thead>
<tr>
<th>Models</th>
<th>2880</th>
<th>Line Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Points / Profile</td>
<td>1280</td>
<td>1280</td>
</tr>
<tr>
<td>Linearity Z (+/- % of MR)</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Resolution Z (mm)</td>
<td>0.092 - 0.488</td>
<td>0.092 - 0.488</td>
</tr>
<tr>
<td>Resolution X (mm) (Profile Data Interval)</td>
<td>0.375 - 1.100</td>
<td>0.375 - 1.100</td>
</tr>
<tr>
<td>Clearance Distance (CD) (mm)</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Measurement Range (MR) (mm)</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>Field of View (FOV) (mm)</td>
<td>390-1260</td>
<td>390-1260</td>
</tr>
<tr>
<td>Laser Class</td>
<td>3B (&lt;500 mW)</td>
<td>3B (&lt;500 mW)</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>49x75x498</td>
<td>49x75x498</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>2.56</td>
<td>2.56</td>
</tr>
<tr>
<td>Scan Rate</td>
<td>380 Hz - 2500 Hz</td>
<td>380 Hz - 2500 Hz</td>
</tr>
<tr>
<td>Interface</td>
<td>Gigabit Ethernet</td>
<td>Gigabit Ethernet</td>
</tr>
<tr>
<td>Inputs</td>
<td>Differential Encoder, Laser Safety Enable, Trigger</td>
<td>Differential Encoder, Laser Safety Enable, Trigger</td>
</tr>
<tr>
<td>Outputs</td>
<td>2x Digital output, RS-485 Serial (115 kbaud), 1x Analog Output (4 - 20 mA)</td>
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</tr>
<tr>
<td>Input Voltage (Power)</td>
<td>+24 to +48 VDC (15 Watts); Ripple +/- 10%</td>
<td>+24 to +48 VDC (15 Watts); Ripple +/- 10%</td>
</tr>
<tr>
<td>Housing</td>
<td>Gasketed aluminum enclosure, IP67</td>
<td>Gasketed aluminum enclosure, IP67</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 to 50°C</td>
<td>0 to 50°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-30 to 70°C</td>
<td>-30 to 70°C</td>
</tr>
<tr>
<td>Vibration Resistance</td>
<td>10 to 55 Hz, 15 mm double amplitude in X, Y and Z directions, 2 hours per direction</td>
<td>10 to 55 Hz, 15 mm double amplitude in X, Y and Z directions, 2 hours per direction</td>
</tr>
<tr>
<td>Shock Resistance</td>
<td>15 g, half sine wave, 11 ms, positive and negative for X, Y and Z directions</td>
<td>15 g, half sine wave, 11 ms, positive and negative for X, Y and Z directions</td>
</tr>
<tr>
<td>Scanning Software</td>
<td>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, and PLCs.</td>
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</tr>
</tbody>
</table>

## Gocator 3000 Series

<table>
<thead>
<tr>
<th>Models</th>
<th>3210</th>
<th>3506</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Points / Profile</td>
<td>1280</td>
<td>1280</td>
</tr>
<tr>
<td>Linearity Z (+/- % of MR)</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Resolution Z (mm)</td>
<td>0.092 - 0.488</td>
<td>0.092 - 0.488</td>
</tr>
<tr>
<td>Resolution X (mm) (Profile Data Interval)</td>
<td>0.375 - 1.100</td>
<td>0.375 - 1.100</td>
</tr>
<tr>
<td>Clearance Distance (CD) (mm)</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Measurement Range (MR) (mm)</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>Field of View (FOV) (mm)</td>
<td>390-1260</td>
<td>390-1260</td>
</tr>
<tr>
<td>Laser Class</td>
<td>3B (&lt;500 mW)</td>
<td>3B (&lt;500 mW)</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>49x146x190</td>
<td>49x146x190</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>2.56</td>
<td>2.56</td>
</tr>
<tr>
<td>Scan Rate</td>
<td>380 Hz - 2500 Hz</td>
<td>380 Hz - 2500 Hz</td>
</tr>
<tr>
<td>Interface</td>
<td>Gigabit Ethernet</td>
<td>Gigabit Ethernet</td>
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<tr>
<td>Inputs</td>
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</tr>
<tr>
<td>Input Voltage (Power)</td>
<td>+24 to +48 VDC (50 Watts); Ripple +/- 10%</td>
<td>+24 to +48 VDC (25 Watts); Ripple +/- 10%</td>
</tr>
<tr>
<td>Housing</td>
<td>Gasketed aluminum enclosure, IP67</td>
<td>Gasketed aluminum enclosure, IP67</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 to 45 °C</td>
<td>0 to 50 °C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-30 to 70 °C</td>
<td>-30 to 70 °C</td>
</tr>
<tr>
<td>Vibration Resistance</td>
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</tr>
</tbody>
</table>

## SOFTWARE AND BUILT-IN 3D MEASUREMENT TOOLS

**3D Feature Tools**
- Openings (holes, slots), Cylinders, Studs (threaded and non-threaded), Plane

**3D Volumetric Tools**
- Volumes, Areas, Bounding boxes, Positions (min, max, centroid), Ellipses, Orientations

**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, and PLCs.

* Based on 2634, Part 2
SENSOR NETWORKING

Gocator laser profilers support seamless multi-sensor networking for scanning large or complex objects (i.e., with irregular surface geometry and multiple occlusions). These sensor networks are connected by LMI Master controllers.

MASTER 810 & 2410

Master 810 and 2410 network controllers make it easy to distribute power, achieve microsecond data synchronization, and provide laser safety for up to 24 sensors per Master. Designed to scale, Masters provide uplink/download ports for daisy chaining, and support differential or single-ended encoder and digital I/O.

» SYNCHRONIZED WITHIN 1 μs ACCURACY
» ALL-IN-ONE CABLING
» BUILT-IN LASER SAFETY CONTROL

BENEFITS OF MULTI-SENSOR SUPPORT

» IDEAL FOR SCANNING LARGE OR COMPLEX TARGETS
» SIMPLE POINT-AND-CLICK NETWORK SETUP
» BUILT-IN LAYOUT ALIGNMENT AND STITCHING FOR MAXIMUM EASE OF USE
» MAINTAINS HIGH RESOLUTION ACROSS WIDE FOV
It’s Better to Be Smart.

contact@lmi3d.com | lmi3d.com