GoPxL 1.1 – Release Notes

Firmware Version 1.1.11.1
Document Revision C

Compatibility

- Devices supported:
  - Gocator Line Profilers:2100 C/D version, 2300 C/D version, 2400, 2500, 2600
  - Gocator Snapshot Sensors: 3200, 3500 (including 3210 and 3506 B version)
  - Gocator Line Confocal Profilers: 4000, 5500
  - GoMax NX
  - X64-based PC (Intel/AMD) with Windows 10
- The following series and models are not supported:
  - Gocator Point Sensors: 1300
  - Gocator Line Profiler: 2629, 2880
  - Gocator Snapshot Sensor: 3520 B version
  - Gocator Multi-point Profiler: 200
  - GoMax (pre-NX version)
- Web Interface
  - The web interface requires Google Chrome 91, Mozilla Firefox 79 or Microsoft Edge version 91 or later

New features

New model support	The following new models are supported (compared to GoPxL 1.0 SR1): ● Gocator 2100 series ● Gocator 3210 B and 3506 B versions ● Gocator 4000 series
Script tool	● Solve applications that require manipulation of measurement values from tools. Compared to the Measurement Formula tool, the Script tool allows multi-line scripts with conditions and loops. ● ● Compared to the Script tool in Classic Gocator 6.x, the GoPxL Script tool features better error feedback, ability to take in and output more data types, and use as an input into other tools.
Array Decision tool	The Array Decision tool allows you to specify pass/fail decisions on individual measurement values within an array. A count of failed measurements and other details are provided as outputs.
Data export tool	On PC, you can use the new Data Export tool to save scan data to a file for importing into other applications. This reduces the need for using the ReplayConverter command line utility for conversion of .gprec recording to other file formats.
Undo and Redo for Regions	Added support for undo and redo functionalities for recent region edits. Users can now use Ctrl + Z to undo changes and Ctrl + Y or Ctrl + Shift +

	Z to redo region edits. Note: Undo/redo actions will only affect selected regions, not the entire project.

Improvements

Over 20 UI user feedback improvements	Many improvements to the user interface have been made in response to user feedback on the 1.0 release. These improvements include the ability to rename jobs directly from the toolbar, enhanced visibility for replay mode, and consistent maintenance of panel widths, open/close states, and pinned items within Displayed Outputs across browser sessions and page navigations.
Quality & Performance improvements	The overall stability and performance of GoPxL has been improved through many bug fixes and performance optimizations.
Tool Graphics Visibility Control	Each tool-associated graphic will now feature its own row in the Display Output panel. This enhancement enables users to conveniently hide tool graphics from the visualizer to minimize clutter and concentrate on pertinent information within their tool chains.
EtherNet/IP & PROFINET	Improved data alignment to map to 4-byte boundaries Note that with this improvement now decisions are excluded from the Measurement output. However, in the upcoming GoPxL release, users will have the option to include decisions again, alongside the benefit of 4-byte alignment.
EtherNet/IP EDS File	Improvements were made to the EtherNet/IP Electronic Data Sheet (EDS) file to enhance its functionality and usability. These include embedding the device icon directly in the file and removing redundant parameters.
GoHMI Designer	The HMI Designer interface features many usability improvements. These include the removal of the login screen, new widgets, and more intuitive layout for the UI.
GoHMI default application	The default HMI app underwent several improvements to showcase GoHMI's new capabilities. Notable changes include the addition of an Alarm Table with localization messages, the introduction of new fields such as Decision Min/Max, and the inclusion of new widgets like Trendline and indicators for Alignment State/Record Enabled State. Additionally, app descriptions were added, and Help content is provided to offer better learning examples for GoHMI users.

Tool Enhancements

Array Index for multiple measurements	The Array Index tool can now output a specified number of measurements from a given index,allowing you to extract many measurement values from an array with only a single tool instance.
Enhanced Blob Contour Visualization	Enhanced blob contour visualization in Surface Blob Tool. Whereas, previously, the contours were displayed at z=0 height, now, they accurately align with the correct height, improving the usability of the tool.

Part Detection Surface Stamp	The stamp (including encoder position) of surfaces from Part Detection now corresponds to the stamp of the profile at the center Y=0 position.

Bug Fixes

Dynamic Exposure	Dynamic exposure in Image mode resulted in varying exposure times that did not stabilize.
Support File	Issues could occur when loading a support file into GoPxL on PC if the source sensor is connected to the same network.
Perspective Zoom	In some cases, in Perspective view mode, it was not possible to zoom out as far as expected.
Encoder Trigger Spacing	When loading a support file, the encoder trigger spacing could be shown as 1.0 when it is actually a different value.
G2500 Spot Detection	G2500 sensors with Spot Selection set to "None" could fail to trigger the laser.
G5 Start Command Delay	The time to perform a Start command on a G5 sensor was significantly longer when accelerated than directly on the sensor.
Snapshot Timeout	A timeout could occur when attempting to perform a snapshot if an anchored tool output is disabled in the tool output configuration.
EtherNet/IP Output	A Connection Lost error could occur if attempting to add a measurement output to EtherNet/IP output beyond the valid address range.
GoHMI Data Visualizer	Fixed an issue where Data Visualizer in GoHMI may not retain the GoPxL Data Viewer mode.
GoHMI Values	Fixed an issue where changes made to certain resources in GoPxL or through the SDK were not reflected in the HMI app.
Tool Bug Fixes	
Pattern Matching	When using Surface Pattern Matching, a crash could occur while running under very specific data conditions.
Surface Transform	Fixed an issue with the Surface Transform tool where moving the Region of Interest (ROI) outside of the grid might not properly clear the data, resulting in incorrect output surface.
Profile Transform	Profile Transform tool: Fixed an issue where the lowest point in profile might be missing from the transformed profile output.
Surface Blob	Fixed an issue with the Surface Blob tool where using Region could cause incorrect counts or missing graphics.

Pattern Editor	Fixed an issue with the Pattern Editor utility on Windows 11 where a black screen might display upon launch.

Known Issues

General

Gocator 3210 upgrade	The free storage on a Gocator 3210 sensor may limit its ability to be upgraded to a different firmware version. Workaround: If upgrade fails, perform a factory restore and ensure that any tool-created files are removed (for example from Surface Pattern Matching or Surface Track) by adding the tool and then deleting any files from the tool's Operation drop-down. If you have previously run the Gocator Classic firmware on the sensor, make sure files created with these tools are also removed (you will need to downgrade first)
Large job files	With a large job file and the UI open, performing Start and Stop operations could be delayed.
Job loading/switching	Loading or switching jobs may be slower than expected with small job files with less than 10 tools.
G3210 snapshot	When employing multiple exposures with intensity on both GoMax and PC a timeout could occur
Industrial Protocols: PROFINET	Once the service is enabled, it cannot be disabled. Workaround*:* Toggle off the service, save the job, restart the sensor, and load the job again.
Industrial Protocols: PROFINET	The PROFINET device name defaults to a hardcoded "gocator-lmi" after a power cycle. This limitation may disrupt user workflows that rely on distinct device naming. Workaround: Until a permanent solution is implemented in GoPxL 1.2, users can manually update the device name in the PROFINET configuration following each power cycle.
Industrial Protocols: Ethernet/IP	The sensor's serial number is incorrectly formatted within the Identity Object (Class 0x01).
GoPxL Manager: Restricted IP address binding	Some Ethernet services bind to all IP addresses even when a single local IP address is specified in GoPxL Manager.
GoPxL Manager: Disabled buttons	The action buttons in GoPxL Manager might become disabled while an instance is running after launching an earlier version of GoPxL Manager and then launching GoPxL Manager 1.1. This is due to configuration

	differences in admin mode between GoPxL 1.1 and prior versions and will be addressed in GoPxL 1.1 SR1. Workaround: Close GoPxL Manager and delete any old instances located at C:\ProgramData\LMI\GoPxLService.
Gocator 6.x .rec file load	Loading scan data from .rec files from Gocator 6.x is supported but some specific files may fail to load depending on configuration details. Workaround: Factory restore may resolve the issue.
Failed recording load	If a recording or support file load fails, the GoPxL instance may be left in a state where other issues can occur. Workaround: Factory restore and restart the GoPxL instance if you experience other issues after failing to load recorded data.
Missing input for profile tools	A profile tool with “missing input” may still output profile data in the Visualizer and show measurement values rather than marking the outputs as “invalid”.
G2342 support	The G2342 sensor is allowed to upgrade to the GoPxL 1.1 release but the support is not complete due to incorrect defaults and lacking Tracking Window support.

Tools

Tool performance	The execution time of some tools may be slower than expected. Workaround: Ensuring that the Web UI is closed can improve performance of some tools.
Default region size	When using surface tools on the output of Profile Part Detection, the default tool regions may be inappropriately sized and placed relative to the surface dimensions.
Surface Section	An extra line is drawn in the Surface Section Profile output.

Utilities

Track editor with multiple GoPxL instances	When using multiple GoPxL instances on PC, it is not obvious which instance is which in the Track editor application’s Source drop-down.

GoHMI

Default HMI App	A factory restore is required to update the default HMI app.
Updating HMI App on PC	The browser cache must be cleared in order for a newly updated or created HMI app to show. In Chrome, open Developer Tools (Shift+Ctrl+J or F12),

	Right-Click on the browser Reload Button, and select “Empty Cache and Hard Reload”. This is not required for GoHMI on sensor or GoMax NX.
GoHMI System Tray Icons	In Windows versions before 11, GoHMI Server may leave behind multiple icons in the system tray after a crash or if it's forcefully closed. This is due to a design limitation in Microsoft's OS that can affect applications without a graphical user interface. To address this issue and remove the excess icons, simply hover your mouse cursor over them.

SDK and REST API Protocol — SDK API version 3.0.0

REST API

Changes to Scan Engine Ids and names	To make it easier to understand and identify our sensor families, we've updated the scan engine IDs and aliases as follows: ● **LMIConfocalLineProfiler** (aliases: "g5xxx" and "g4xx"): This ID now represents both the G4 and G5 families. ● **LMIFringeSnapshot** (alias: "g3xxx"): This ID represents the G3 sensor family. ● **LMILaserLineProfiler** (alias: "g2xxx"): This ID represents the G2 sensor family. For users transitioning from GoPxL 1.0 and earlier versions, both engine IDs (e.g., LMIConfocalLineProfiler) and aliases (e.g., g5xxx) can still be used interchangeably to maintain backward compatibility.
Gocator Data Protocol updates	Renamed "actions" resource to "commands", i.e., `/controls/gocator/outputs/actions` is now changed to `/controls/gocator/outputs/commands`
HMI Resource updates	● Removed `/controls/hmi/commands/deactivate` ● Added `/controls/hmi/commands/discardWorkspace` ● Renamed "actions" resource to "commands", i.e., `/controls/hmi/outputs/acutions` is now changed to `/controls/hmi/outputs/commands`
Sensor Group and Sensor Resource updates	● Scanner Property Groups / Camera (Property group) ○ `enhancedSurfaceFlatness` ○ `hdrMode` ○ `hdrGamma` ● Scanner Resource ○ `engineId` ○ `subsamplingSettings/xSubsamplingDefaultEnabled` ○ `subsamplingSettings/zSubsamplingDefaultEnabled` ● LMIFringeSnapshot Sensor Resource ○ `/system/powerSettings` ○ `/system/powerSettings/voltage`

	• Other changes: ○ `/system/powerSettings/cableLength` ○ `/system/info#/appId` ○ `/environ/remoteController#/appId` ○ `/toolTypes/batchability`
REST asynchronous notifications	The REST client now delivers responses more efficiently. Previously, synchronous change notifications caused delays in response transmission. Now, asynchronous notifications ensure quicker delivery of responses to clients.
REST Notification message payloads	To optimize notification message payloads, resource state details have been excluded from the notification messages. As a result, users are required to explicitly send a READ request in order to obtain the latest resource state.

SDK

GoDiscoveryClient	The `GoDiscoveryClient::Instance()` parameter list changed from "appId " to IP address and web port number.
Standardized Time Units Across C++ and C# APIs	The time unit consistency issue across C++ and C# APIs, for example in the BlockingDiscovery() API, have been resolved. Time values are now uniformly accepted in milliseconds for both languages.
GoSystem timeout API	Previously, GoSystem operations had fixed timeouts set in GoTransaction.h, which user control. APIs were added to GoSystem to enable users to tailor timeout durations for these operations according to their requirements.
SDK Samples Improvements	• SaveJob now demonstrates how to load a job. • Error messages have been enhanced to provide clearer communication in case of a timeout occurrence. • In ReceiveSurface, instructions have been added for how to set the sensor to surface mode and ensure that data is mapped for output. • The MultilayerOutputs sample has been added to demonstrate how to configure and receive multilayered outputs from LMI confocal sensors. • Error handling for multi-sensor samples has been improved. • Discovery samples have been enhanced to properly handle AppId when sensors are running through a PC instance of GoPxL. • The ENGINE_ID is now obtained dynamically from the REST API. • Live job inclusion has been added to the download support/backup file in the BackupRestore sample. • Instructions have been added in ConfigureSensor to demonstrate various triggering configurations

Functionality compared to Gocator 6.x firmware

This section covers functionality that is available in Gocator firmware versions 6.1 or 6.2 but not available in GoPxL.

Digital, Analog, and Serial output	Digital, Analog, and Serial output are not supported. Digital output support will be added in a future release.
Maximum frame rate simulation	When loading a support file in GoPxL, the maximum frame rate is not calculated as it is in Gocator Emulator.
Replay Export	Some areas of replay export are currently not supported. This includes export of profile data and measurement values to CSV. The Data Export tool can be used to export surface data to different formats, including CSV.
Recording filtering	There is currently no ability to conditionally record data with recording filter settings. Conditional export to file is supported with the Data Export tool.
User roles and accounts	Gocator 6.x Administrator and Technician accounts are not supported in 1.1 but are planned for future releases. Currently HMI functionality allows creating a reduced access interface.
Runtime variables	Runtime variables from PLC are not yet supported.
Translations	GoPxL is only available with an English user interface currently.
Autostart	The ability to automatically start a sensor after power cycle is not yet available.
G2 Tracking, Translucent spot detection	The tracking functionality and translucent spot detection are not available.
Surface Section and Polygon region	Surface Section does not allow editing the section line by dragging end points and no polygon region is supported. These will be added in a future release.
Quick Edit mode	Quick Edit mode is not available. Temporarily enabling a decimation filter to reduce the point count allows tools to run faster while still producing measurement values.
Mixed-model buddying	Mixing different G2 line profile models in a merged system (buddying) is not supported. The models must match.
G2880 & G200	These models are not currently supported in GoPxL
Surface Barcode	The Surface Barcode tool is currently not supported in GoPxL.
GoMax NX Independent acceleration	GoMax NX can only accelerate a single sensor or a single set of grouped G2 or G4/G5 sensors (formerly known as “buddy” system). Accelerating multiple sensors independently is not supported.