

GoPXL 1.2 – Release Notes

Firmware Version 1.2.30.56

Document Revision B

Note: There are two changes to the GoPXL Utilities package:

1. A second Utilities package has been added for “GoPXL Pro Utilities” which includes the Anomaly Detector tool.
2. The utilities are now distributed as **Windows executable (.exe) files** rather than **.zip packages**. The .exe files are self-extracting archives that will prompt for a location to extract to. It will create a new folder with the package content at the selected location.

Compatibility

Note: The connections mapping for industrial protocols, PROFINET, EtherNet/IP and Modbus have changed to address a byte alignment issue. PLC logic created to interface with GoPXL 1.1 may need to be updated to allow communication with GoPXL 1.2. See the user manual for more details.

For EtherNet/IP, the EDS file has been updated to reflect the changes.

- Devices supported:
 - Gocator Line Profilers: 2100 C/D version, 2300 C/D version, 2400, 2500, 2600
 - Gocator Snapshot Sensors: 3200 A/B version, 3500 A/B version
 - Gocator Line Confocal Profilers: 4000, 5500
 - GoMax NX, ORIN, ORIN+
 - X64-based PC (Intel/AMD) with Windows 10 and Windows 11
- The following series and models are not supported:
 - Gocator Point Sensors: 1300
 - Gocator Line Profilers: 2342, 2880, 6300
 - Gocator Multi-point Profilers: 200
 - GoMax (pre-NX version)
- Web browser requirements: We recommend using the latest version of Google Chrome, Microsoft Edge or Mozilla Firefox. There are known issues with Chrome or Edge earlier than version 91, and Firefox earlier than version 79.

New features

<i>New model support</i>	The following new models are supported (compared to GoPxL 1.1): <ul style="list-style-type: none">• Gocator 2629• GoMax ORIN and ORIN+ (also supported in 1.1.52.14)• G3520 B version
<i>Custom tools - Python GDK</i>	Custom measurement and processing tools can now be built using Python code.
<i>Anomaly Detector</i>	The Anomaly Detector tool is now incorporated into GoPxL releases and not only runs on GoMax, but also on a PC with Nvidia GPU. Anomaly Detector on PC is included in the “GoPxL Pro Utilities” package.
<i>Digital Output</i>	The digital output pins on Gocator sensors can now be used to output pass/fail decisions and other values to other equipment. Note that though the GoMax ORIN has digital output ports, these are reserved and not supported by the current digital output implementation.
<i>Administrator login</i>	The user interface can be protected with a password increasing system security and preventing unwanted modifications by operators.
<i>Autostart</i>	Allows automatically starting sensors and GoPxL on PC after a power cycle.
<i>Quick Edit</i>	Allows the user to make multiple changes to tools without processing every change, speeding up the time it takes to edit tool parameters.
<i>Independent Z axis zoom</i>	The new Z Scale option in the visualizer allows exaggerating height detail in scan targets.
<i>Array index synchronization</i>	A new control in the Displayed Outputs panel allows controlling the index of multiple displayed items simultaneously.

Improvements

<i>Upload data only from .gprec</i>	Uploading a .gprec now allows selecting either <ul style="list-style-type: none">• Data and job configuration (the previous default mode)• Data only (newly added in 1.2) With the new added upload mode, the current configuration is preserved. This matches the “Upload & Merge” in Classic.
<i>GoPxL Manager IP address selection</i>	IP address selection for individual instances has been improved to separately list options for binding services to all local IP addresses “Any IP (0.0.0.0)” or only localhost “Localhost (127.0.0.1)”. Note that any existing instances from a GoPxL 1.1 installation will not retroactively be updated from “Localhost” (the previous default) to “Any” (the new default).

<i>High speed G4/G5</i>	Added support for high speed mode for G4 and G5 confocal sensors
<i>Visualizer Stability During Active Area Edits</i>	The Visualizer now stays stable when users edit the Active Area. This prevents view resets and ensures uninterrupted adjustments.
<i>Accordion Expand/Collapse All:</i>	A new control allows users to expand or collapse all nested accordion sections at once. Accordion sections are collapsible UI containers used to group related settings or content vertically.
<i>Copy Array Measurement Results</i>	A “Copy to Clipboard” button has been added to the array measurement popup, allowing copy-paste into a spreadsheet.
<i>Tool parameter versioning notice</i>	When loading jobs from older GoPXL versions, updated tool parameters will be automatically migrated. The migration process modifies the job, so the jobs will load in a modified state and a log message explains the change.
<i>Select-on-Click for Input Fields</i>	Input fields now support select-on-click. A single click selects the entire value, so users can replace or delete it without manually clearing the text.
<i>Displayed Output context menu</i>	A new context menu in the Displayed Outputs panel allows users to show/hide items with options to show all, hide all, show all others, or hide all others.
<i>Multiple Exposure default count</i>	The default number of exposures in Multiple Exposure mode has been reduced from 3 to 2.
<i>Navigation bar default state</i>	The navigation bar now opens by default to improve accessibility and reduce effort required to navigate key sections.
<i>Save As dialog</i>	The "Save As" field now pre-fills with the current job name and auto-selects the text. Enter saves and closes the dialog.
<i>Active Area adjustments</i>	The active area grid is now expanded to show the maximum size of the sensor's field of view.
<i>Reports > Measurement</i>	All items in the Reports > Measurements panel now expand by default
<i>Reports > Performance</i>	The Reports > Performance page now shows the total execution time of all tools.
Tools	
<i>Tool Keyboard Shortcuts</i>	New keyboard shortcuts have been added: D to duplicate the selected tool, R to rename (single selection only), and Del to remove selected tools. For a full list of keyboard and mouse shortcuts, see the user manual.
<i>Tool Help – Open in New Tab</i>	A new button allows users to open Tool Help content in a separate browser tab for easier reference.
<i>Tool diagram</i>	When multiple tools are missing inputs, now only a single problem entry is generated.

<i>Geometric features</i>	Visualization of geometric features (points, line, plane and circle) is now supported.
<i>Tool Block Context</i>	GoPxL now refines tool block interaction by disabling tool input selection in expanded blocks and updating context behavior. Context determines which data appears in Displayed Output and, in turn, the Visualizer.
<i>Arrayed outputs</i>	A copy button is now available on arrayed output tooltips to allow copying the array values into the clipboard.
<i>Output Icons in Tool Configuration</i>	Icons have been added to tool outputs in the Tool Configuration panel to help users quickly identify and distinguish between different output types.
<i>Surface Filter tool multiple filters</i>	The Surface Filter tool now allows combining multiple filters within a single tool instance.
<i>Script Tool Python version update</i>	The Python version for the Script tool is updated from 3.6 to 3.8.10.
<i>Profile Part Detection</i>	Now allows extending padding length and width beyond gap length and width.
<i>Script tool</i>	The Script tool now allows use of OpenCV on PC and GoMax
<i>Surface Anomaly Detector</i>	Added blob output and moved to "Surface" category Added selection for model selection when remove restriction is enabled
<i>Data Export</i>	Added support for exporting arrayed data in .gprec format. Also improved file format selection dropdown.
<i>Training Archive</i>	Added storage threshold and simplified project management
<i>Surface Align Wide</i>	Added origin offset mode and two new options in Alignment mode to target XY and XYZ angles
Communication & HMI	
<i>EtherNet/IP and PROFINET byte alignment</i>	The mapping of command input arguments for EtherNet/IP and PROFINET has been modified to allow use of user defined types (UDTs). The offset for command arguments shifted from 3 to 4. Note that this introduces an incompatibility with existing PLC logic written for the GoPxL 1.1 release. Please review the user manual for the updated mapping and import the updated EDS file for EtherNet/IP communications.
<i>PROFINET on PC</i>	PROFINET is now supported when using GoPxL on PC.
<i>Gocator / GDP protocol</i>	Renamed "Gocator" in in Control section to "GDP" for "GoPxL Data Protocol"

Utilities

Replay Converter / Replay Utils

The Replay converter has been renamed to Replay Utils. It has also been improved to add the following:

- Multiple .gprec files can be merged into one
- Added support for multi-layer .gprec export

Bug Fixes

The following bugs in the previous 1.1 and 1.1 Anomaly Detector releases are now resolved.

<i>G2540/2550 FOV</i>	The FOV of the Gocator 2540 and 2550 was incorrectly configured slightly larger than the design specification. With this release, the FOV is reduced and the resulting X resolution minimum increased. This is expected to cause incompatibilities when loading existing job files that exceed the new limits, so job files will need to be modified to match.
<i>G3210/3520 B snapshot delay</i>	A delay occurred when triggering a snapshot after having changed material types between Interreflective and Diffuse.
<i>G4010 connection error</i>	On some G4010 sensors, a connection error was occasionally occurring: "Unable to connect to sensor <serial number>. General Connection Error"
<i>GoPxL Manager: Restricted IP address binding</i>	Some Ethernet services listened on all IP addresses even when a single local IP address was specified in GoPxL Manager.
<i>Processing latency</i>	Fixed an issue where the processing latency could be incorrect in some cases when accelerated.
<i>Tool output already sent</i>	A sensor could stop with errors such as "Tool output already sent" and other errors when using tool batching with occasional invalid measurement values.
<i>Recovery with GoPxL Discovery</i>	GoPxL Discovery was not able to recover a sensor after misconfiguration with DHCP.
<i>Tool region position incorrect</i>	Under some circumstances with specific tool regions anchored to other tools, region positions were incorrect after loading a recording.
<i>Incorrect job load</i>	Tools could show results from a previous job if the new job contained disconnected tools.
<i>Encoder frequency display</i>	The encoder frequency metric did not reverse the sign of the value when the direction was reversed.
<i>Scan count</i>	When generating surface data with encoder triggering and backwards motion direction, the scan count and recorded count did not always match.

<i>Data viewer color range</i>	When specifying the heightmap coloring range with region and changing the Active Area such that the region is outside the active area, the range region could be hard to find and reset. Now it is automatically reset.
<i>Missing lines in surface scan data</i>	With encoder triggering and backward motion, some lines could be missing in the surface scan data.
<i>G2 Alignment with wide layout</i>	The alignment process could get stuck in a “leveling” state and needed to be cancelled.
<i>G4/G5</i>	Fixed an issue where data may be missing when encoder spacing is set to 1x or 2x encoder resolution
Communication & HMI	
<i>ASCII output</i>	It was not possible to have two instances of GoPxL with both using ASCII enabled on the default port.
<i>EtherNet/IP change of state</i>	EtherNet/IP with "Change of state" trigger override resulted in occasional connection drops.
<i>SDK closing gdpClient</i>	The SDK could under some circumstances throw an exception when closing the gdpClient and disconnecting from the system.
<i>Long job load from PLC</i>	When triggering a job load from a PLC, the time to load the job included time to evaluate any tools on previously acquired scan data.
<i>PROFINET device names</i>	The PROFINET device name defaulted to a hardcoded "gocator-lmi" after a power cycle.
<i>PROFINET values after start</i>	When starting the sensor, the stamp and measurement values communicated over PROFINET were not reset and would only be updated after the first frame was processed.
<i>PROFINET intermittent 0 values</i>	Over a PROFINET connection some values for the sensor state/stamp and measurement values could intermittently go to 0.
<i>Industrial Protocols: PROFINET on PC</i>	PROFINET service could not start if a GoPxL instance is bound to “Any IP (0.0.0.0)” or “Localhost (127.0.0.1),” in GoPxL Manager as neither of which provide a valid network interface for PROFINET communication.
<i>PROFINET: Stamp does not reset after start</i>	Fixed an issue where after starting a sensor, the Frame Index value over PROFINET may not reset to 0.
<i>GoHMI Designer</i>	After loading and exiting a project in GoHMI Designer, then reloading it again, the Designer could fail to load the project again.
<i>GoHMI multiple independent sensors</i>	It is now possible to access data from multiple independent sensors in a single GoHMI application
<i>GoHMI with local IP address</i>	A GoHMI app was not always receiving measurement values when using a local IP address instead of 127.0.0.1.

<i>HMI-enabled sensor crash on restart</i>	The HMI-enabled sensor connected to a GoPXL PC instance could crash when the sensor is restarted.
<i>Industrial Protocols: Ethernet/IP</i>	The sensor's serial number was incorrectly formatted within the Identity Object (Class 0x01).
Tools	
<i>Surface Transform / Surface Section</i>	Outputs could be shown in an incorrect coordinate system
<i>Feature Line Create</i>	When selecting "Center line from two lines" the line visualization was not showing correctly.
Utilities	
<i>Replay Converter/Utils</i>	A crash could occur when loading a PCD file

Known Issues

General

<i>Gocator 3210 upgrade</i>	<p>The free storage on a Gocator 3210 sensor may limit its ability to be upgraded to a different firmware version.</p> <p>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)</p>
<i>New job with no sensor connected</i>	<p>Creating new job files or modifying sensor parameters without a sensor connected can create invalid settings that can not be loaded with a sensor connected.</p> <p>Workaround: Do not create new jobs when sensors are not connected.</p>
<i>False error about digital output</i>	When loading a .gprec file to GoPXL on PC, false warning messages could be shown in the log indicating that digital output could not be enabled even if it was not enabled in the recording file.
<i>Unmerged multiple exposures</i>	With Uniform spacing disabled, multiple exposures, enabling "Unmerged multiple exposure", and switching from Profile to Surface mode, data processing errors occur.
<i>Connection loss reported with large datasets</i>	With FireFox, a connection loss error could occur when working with large datasets.

<i>GoMax upgrade with Anomaly Detector</i>	<p>It is not possible to directly upgrade a GoMax device from Gocator Classic 6.3 SR2 and earlier with the GoMax Anomaly Detector upgrade package (.dat file). This is due to an upgrade package size restriction.</p> <p>Workaround: First upgrade to GoPxL 1.1 before upgrading with the GoMax Anomaly Detector build.</p>
<i>FireFox and large surface data</i>	<p>With the FireFox web browser, issues can occur in the user interface when working with large/high resolution surface data.</p> <p>Workaround: We recommend using Chrome when using large data sizes.</p>
<i>Large job files</i>	<p>With a large job file and the UI open, performing Start and Stop operations could be delayed.</p>
<i>Job loading/switching</i>	<p>Loading or switching jobs may be slower than expected with small job files with less than 10 tools.</p> <p>Switching jobs via the SDK with scan data present from a previous scan, will cause all tools to be run on the existing data.</p>
<i>Industrial Protocols: PROFINET</i>	<p>Once the service is enabled, it will remain running in the background until a power cycle is performed.</p> <p>Workaround: Toggle off the service, save the job, restart the sensor, and load the job again.</p>
Tools	
<i>Tool performance</i>	<p>The execution time of some tools may be slower than expected.</p> <p>Workaround: Ensuring that the Web UI is closed can improve performance of some tools.</p>
<i>Default region size</i>	<p>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.</p>
<i>Anomaly Detector</i>	<p>Surface Anomaly Detector training log cannot be extracted with the default Windows 11 extract archive tool, use winrar or 7-Zip v24.09 or newer as workaround</p>
Utilities	
<i>Track editor with multiple GoPxL instances</i>	<p>When using multiple GoPxL instances on PC, it is not obvious which instance is which in the Track editor application's Source drop-down.</p>
GoHMI	
<i>Default HMI App</i>	<p>A factory restore is required to update the default HMI app.</p>

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.

SDK and REST API Protocols

REST API version 6.0.0

SDK

<i>Quick Edit</i>	Added convenience functions to GoSystem	GoSystem.EnableQuickEdit() GoSystem.DisableQuickEdit() GoSystem.QuickEditEnabled()
<i>Clearing buffered data</i>	Added ability to manually clear buffered data.	GoGdpClient.ClearData()
<i>GDP port number</i>	Added ability to retrieve Gocator Data Protocol (GDP) port number	GoSystem.GdpPort()
<i>System time</i>	Replaced PtpTime with System Time in units of seconds and nanoseconds	GoGdpStamp.SystemTimeSec GoGdpStamp.SystemTimeNSec

REST API

The following key changes were made to the REST API:

<i>Digital output</i>	Added	/controls/digitalOutput
<i>Quick Edit</i>	Added	/system/quickEditEnabled
<i>Autostart</i>	Added	/system/autostart /system/autostartTimeout
<i>Administrator login</i>	Added	/system/auth /system/commands/login
<i>PROFINET</i>	Added	/controls/profinet/deviceName

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.

<i>Translations</i>	GoPxL is only available with an English user interface currently. Chinese support is being made available separately for GoPxL 1.2.
<i>Maximum frame rate simulation</i>	When loading a support file in GoPxL, the maximum frame rate is not calculated as it is in Gocator Emulator.
<i>Replay Export</i>	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.
<i>Runtime variables</i>	Runtime variables from PLC are not yet supported.
<i>GoMax Independent acceleration</i>	GoMax 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 currently not supported.
<i>Surface Section and Polygon region</i>	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.
<i>Recording filtering</i>	There is currently no ability to conditionally record data with recording filter settings. Conditional export to file is supported with the Data Export tool.
<i>G2 Tracking, Translucent spot detection</i>	The tracking functionality and translucent spot detection are not available.
<i>Mixed-model buddying</i>	Mixing different G2 line profile models in a merged system (buddying) is not supported. The models must match.
<i>G2342, G2880, G200, G6000</i>	These models are not currently supported in GoPxL
<i>Surface Barcode</i>	The Surface Barcode tool is currently not supported in GoPxL.
<i>Technician login</i>	Gocator 6.x Technician login with restricted UI is replaced by GoHMI functionality allowing creating a reduced access interface. GoPxL 1.2 added the Administrator login function to restrict the user interface with a password.
<i>Analog, and Serial output</i>	Analog, and Serial output are not supported.