SOFTWARE UPDATE

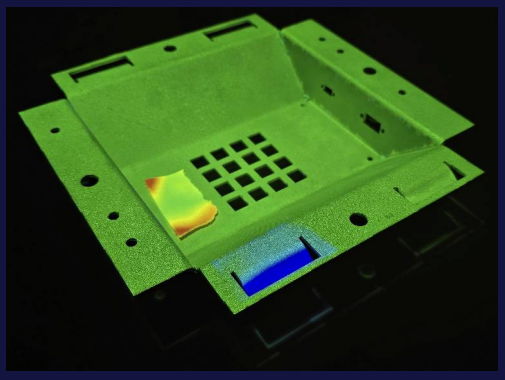
Planar v2026

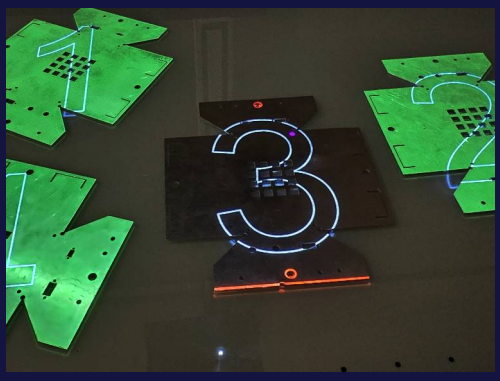
Summary

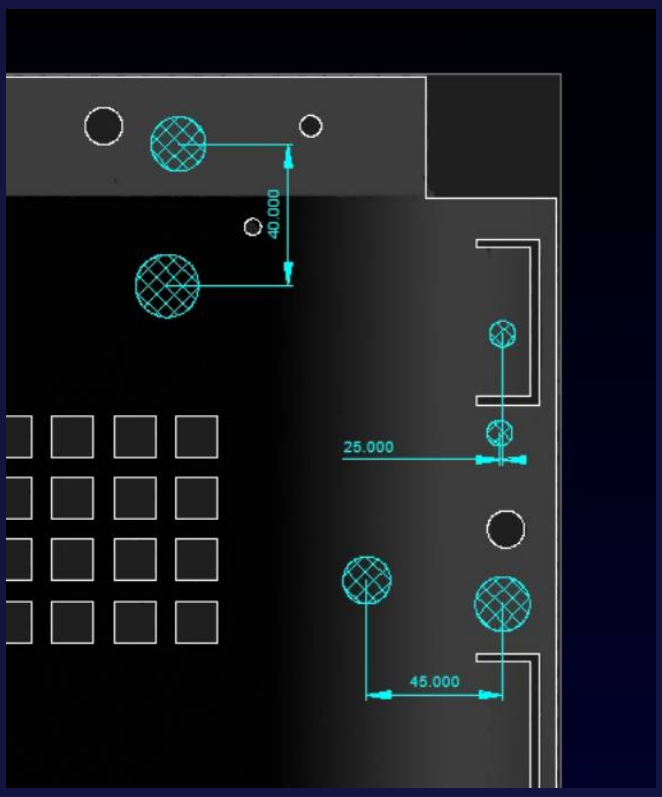
This is a major release and as such requires a full installer to upgrade your system.

The main elements of the update are-

Internal PDF report generation & merging, new report color coded formatting, automatic countersink detection and setup, deletion of collection entities, user defined per entity edge profiles within Planar, v2 polyline arc reverse engineering, manual inspection items with AR feedback and visual feedback of height map during creation of SurfScan Surface Samples.







Major Updates

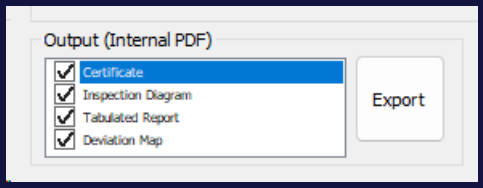
OptiScan Hardware Upgrade

The OptiScan system has received a number of major hardware upgrades that improve feature resolution by approximately 35%.

Additional optical filtering enhances performance on reflective parts, and improved depth of field delivers better edge measurements on thin sheet metal parts.

Native PDF Creation

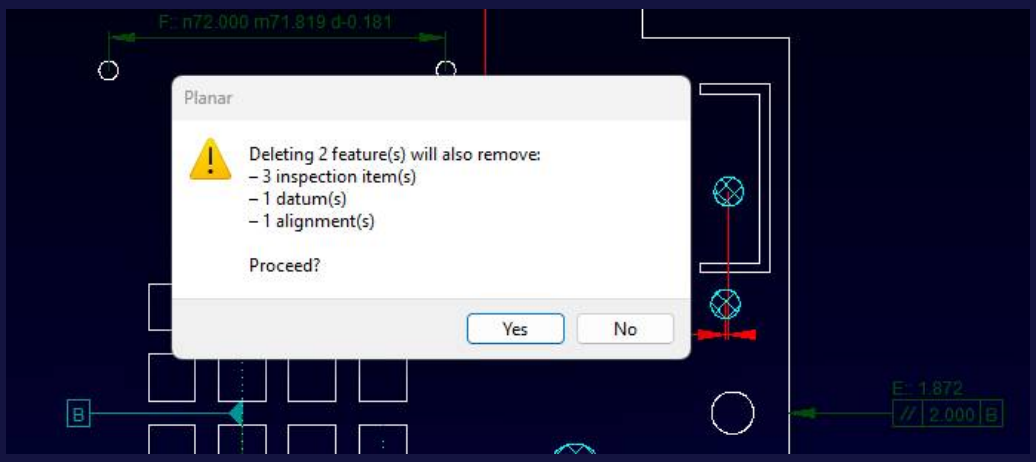
Planar Inspection Reports can now be converted into PDF files, merged and reordered internally.



External Print to PDF converters like PDFCreator are no longer required. This gives the user more control over the types of reports created and the order in which they are automatically merged.

Ability to Delete Collections & SurfScan Surface Samples

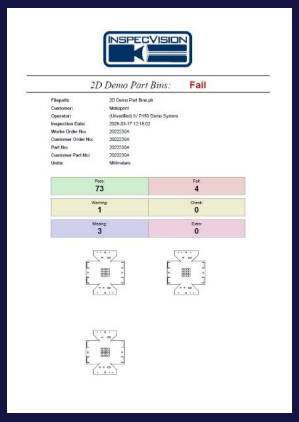
The deletion of reference features like collection entities or SurfScan surface samples can have a significant effect on down stream items like datums, inspection items, alignments, GD&T items etc.

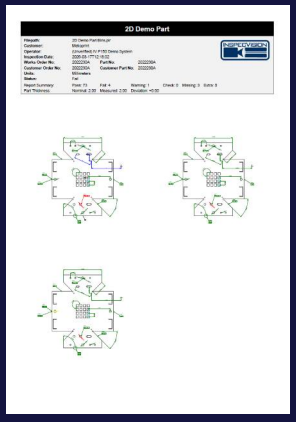


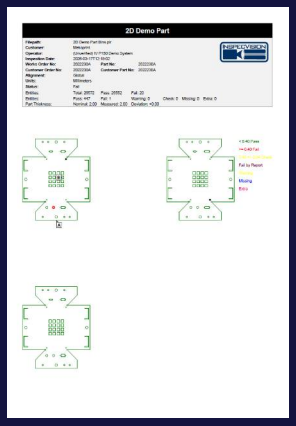
The new software will remove or reassign these as required.

New Inspection Report Format

A new color coded inspection report format has been created.

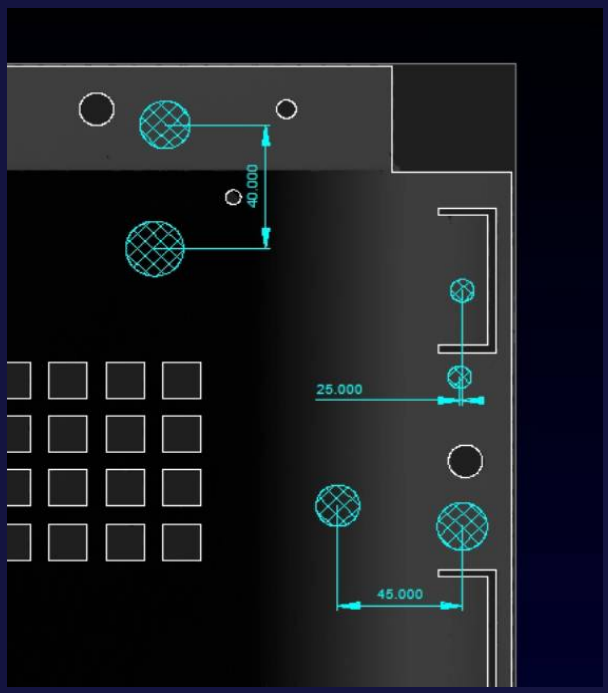






The images above were created using the Internal PDF creation formatting.
The formatting of the external PDF creation may vary a little.

SurfScan Surface Sample Height Feedback



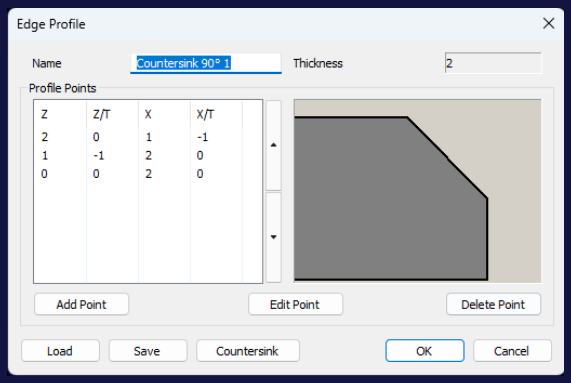
SurfScan surface samples can be tricky to place in the correct location and at the correct size.

A height map of the part is now displayed while adding these items.

Countersink Detection and Automatic Setup

Countersinks are very common in sheet metal parts. They are usually denoted in the CAD file by 2 concentric circles.
The software can now detect these concentric circles during CAD import.

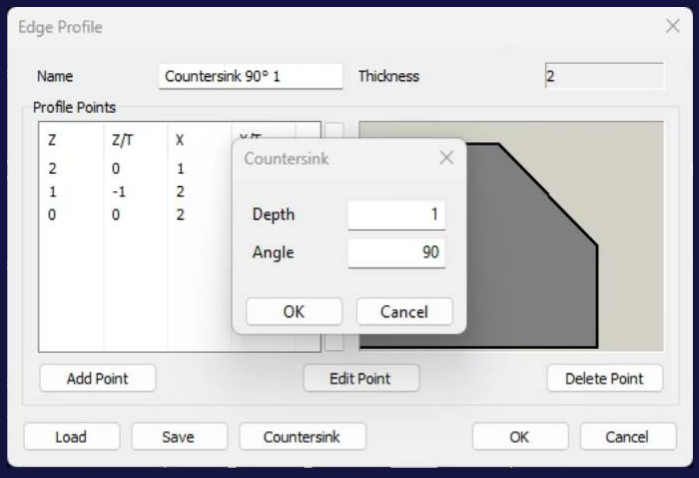
When a counter sink is detected the software will automatically create the correct edge profile and assign it to the inner edge.



An AOI circle feature is also automatically created for the outer circle.

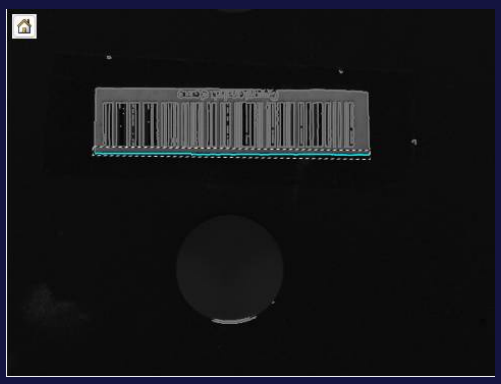
This external feature could either be inspected with the AOI option or the manual inspection item feature, see below.

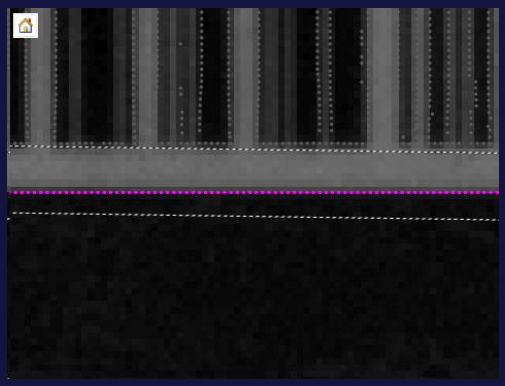
For CAD files which do not contain concentric circles an automated edge profile setup dialog has been created.



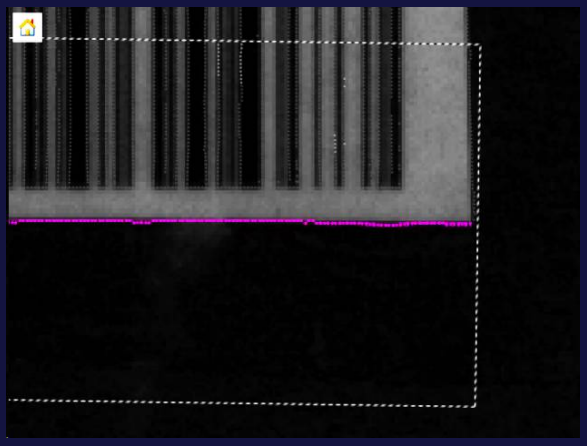
AOI Upgrades

The AOI dialog now supports pan, zoom, and home controls. This is especially helpful when configuring AOI features with very large aspect ratios, offering more flexibility than the previous zoom-to-extents functionality.





Additionally, expanded capture zones for AOI features are now constrained to the end points of the AOI feature.

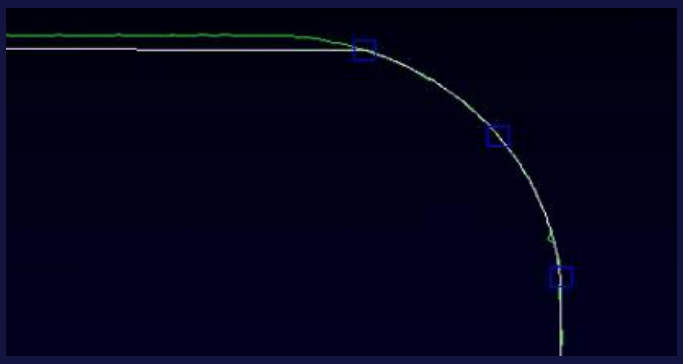


v2 Polyline Arc/Circle Reverse Engineering

The previous reverse engineering function “Fit Polylines with Arcs [& circles]” would often create more features than desired if the resolution was set to a small enough value to give a tight fit. Conversely, if the resolution was set to a larger value the number of features was more optimal but the location of the ends of those features could drift by the feature resolution chosen.

For example -

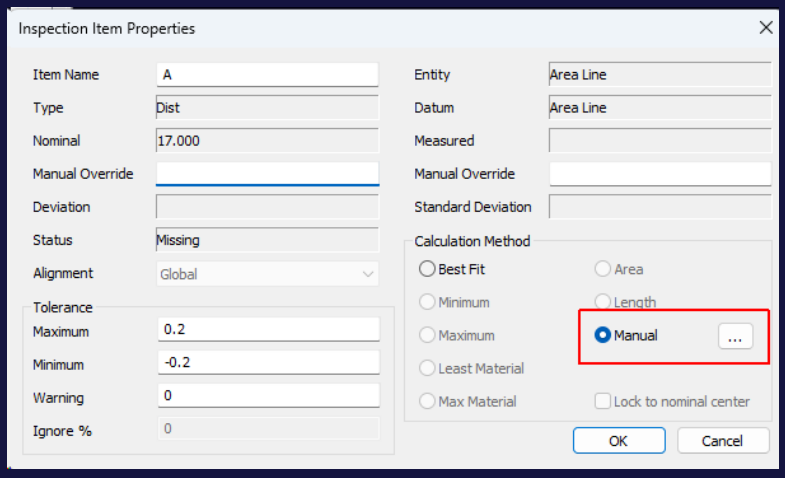
at a very large resolution value of 0.7mm the number of features the Fit Polyline-Arcs function used is optimal but the location of their end points is not.

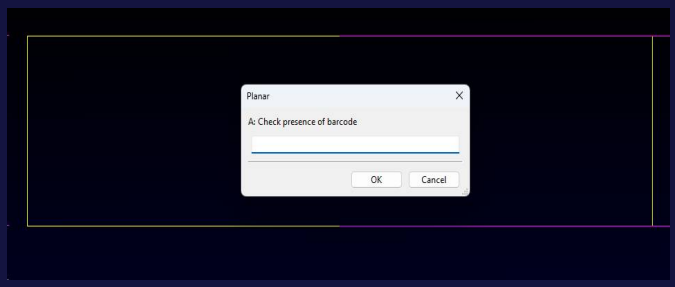


The v2 version will offer to optimise these features to improve the fitted end points. If the new end points allow, the new function will merge adjacent features and even convert them from lines to arcs to improve the fit while maintaining the requested resolution.

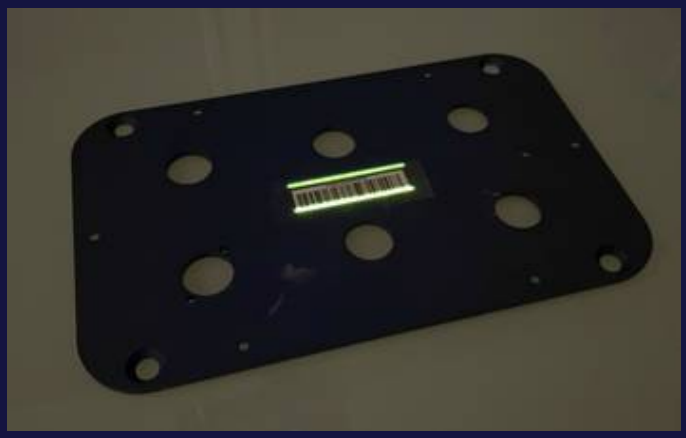
New Manual Inspection Item Type

A new inspection item type, "Manual Inspection Item," has been added. These items can be used to guide and verify manual operations





- for example, confirming the presence of a label, insert, or form, or providing operator guidance while such features are being added.

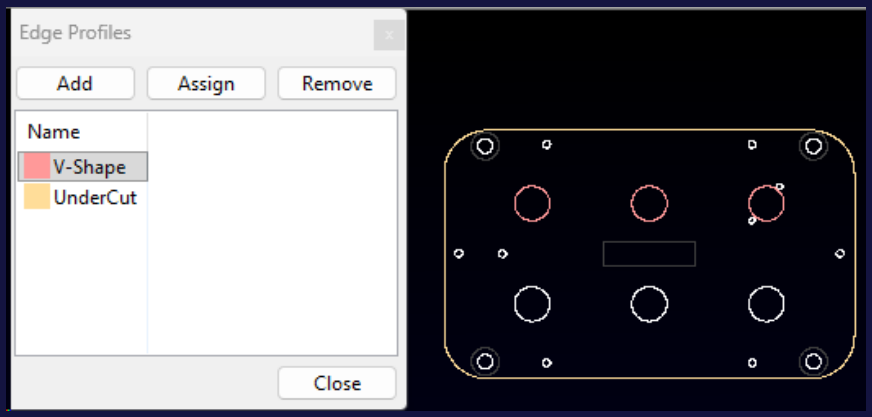


When the part is AutoInspected, a dialog appears and the features related to the manual operation are highlighted both on screen and in Augmented Reality.

The manual inspection items work well with blue tooth calipers or protractors allowing seamless integration Planar measurements with those from other equipment.

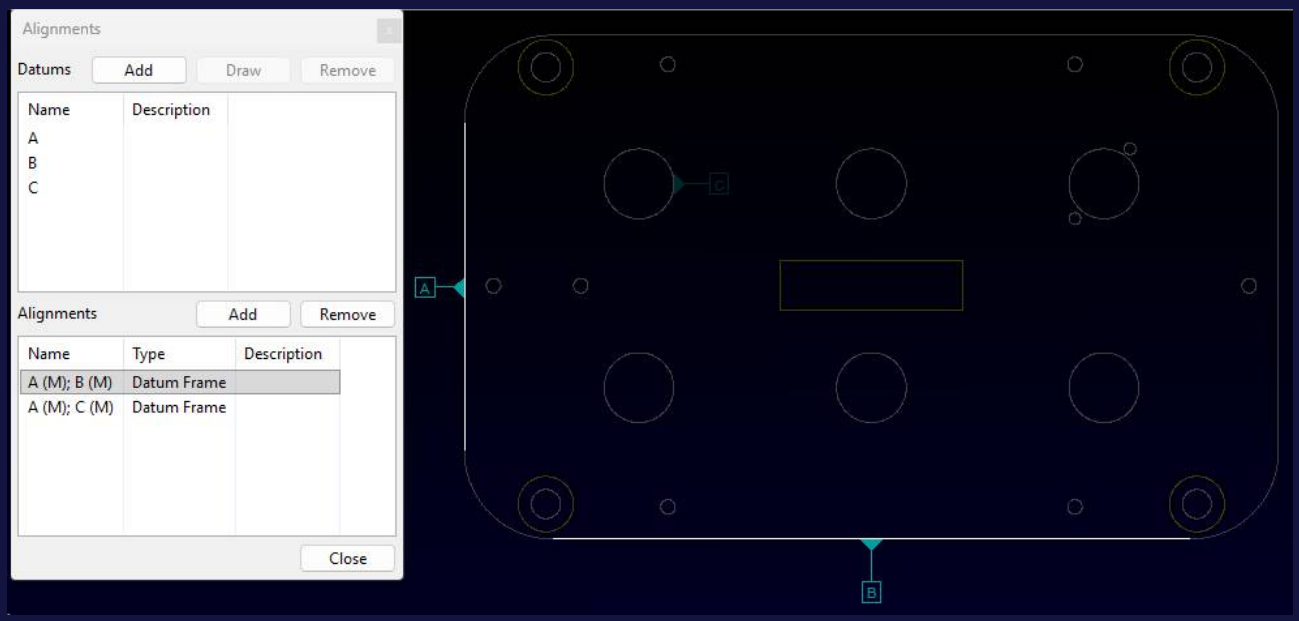
Per Entity Edge Profiles within Planar

The user can now create multiple Edge Profiles within the Planar software and assign each profile to one or more entities.



MMB Datum Frames

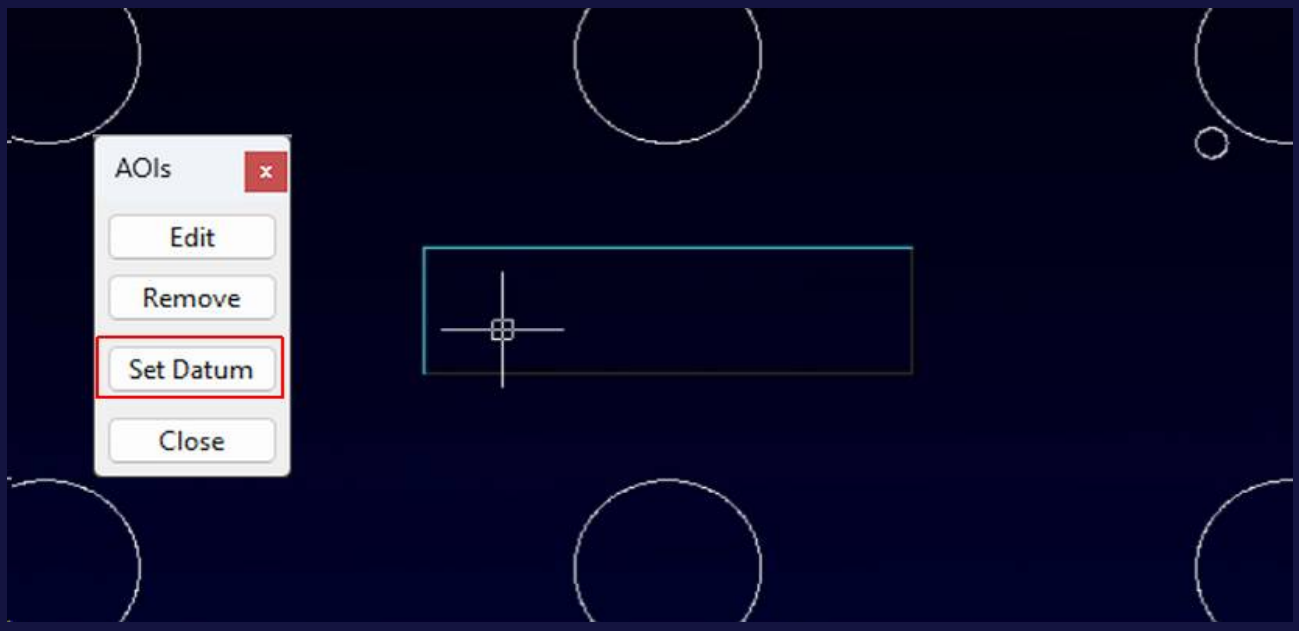
Users can now define MMB datum frames.



AOI Pre-Alignment

Many parts with significant AOI features use two different manufacturing processes—one for the AOI features and another for the rest of the part.

This can introduce misalignment between the AOI features and the rest of the part, even when the AOI features are highly accurate relative to one another. When the initial alignment is poor, the system may struggle to measure AOI features that fall far from their nominal positions.

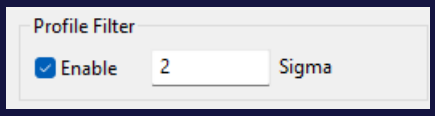


To address this, users can now create an AOI-specific alignment that is applied to the AOI capture windows, helping ensure that features far from nominal are still measured reliably.

Updates

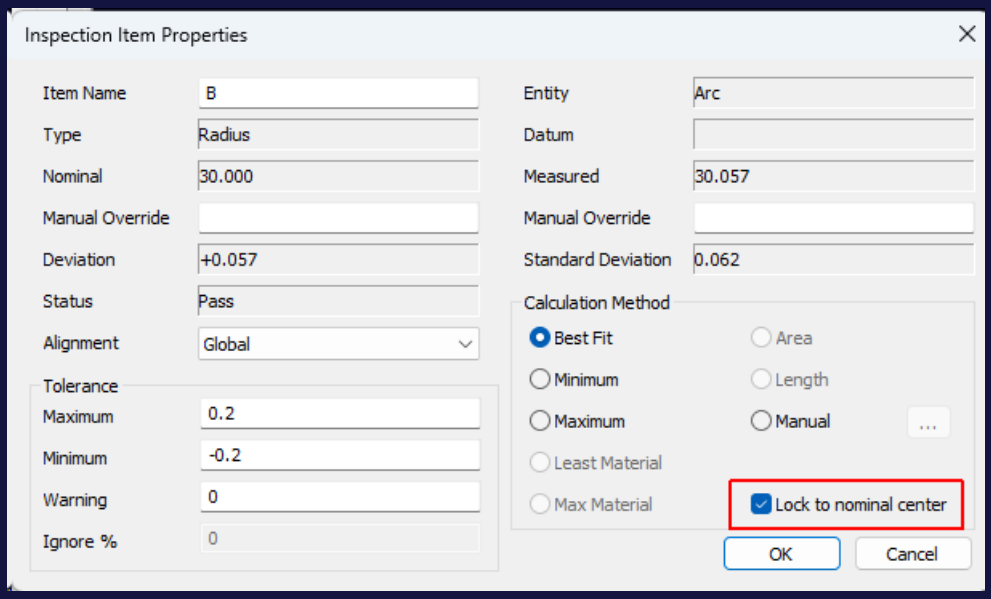
Sigma Outlier Removal

Datum frames, GD&T and Deviation Maps can now use an optional sigma/standard-deviation filtering. This approach supersedes the Percentage value in the deviations map dialog.

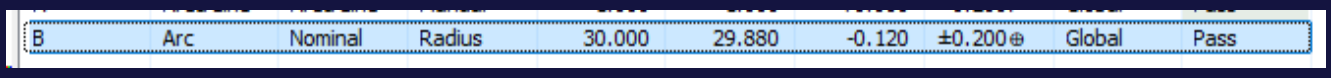


Small Span Arc Locked Centers

Arcs can now be fitted with their center points locked to their nominal positions. This is particularly useful when inspecting the radius of small span arcs.



These inspection items are flagged in the report as having a Nominal datum feature and a cross-hair symbol has been added to indicate that they are not freely fitted.



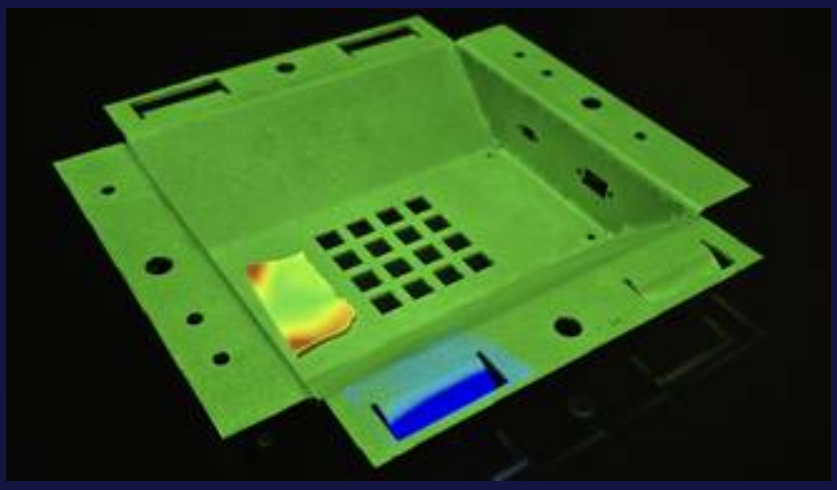
Default GD&T Tolerance Added

New GD&T items can now be assigned a default tolerance.

PCLEARN and Flatness Inspection - Negative Deviations

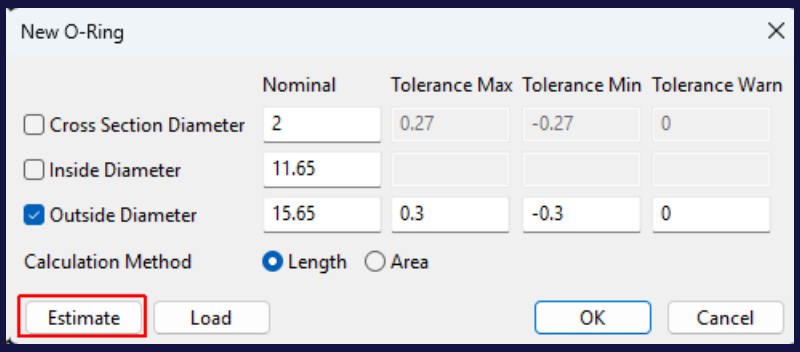
Negative height deviations are now displayed in blue.

Positive height deviations are still rendered in red, i.e. the classic red to blue heat map color scheme.



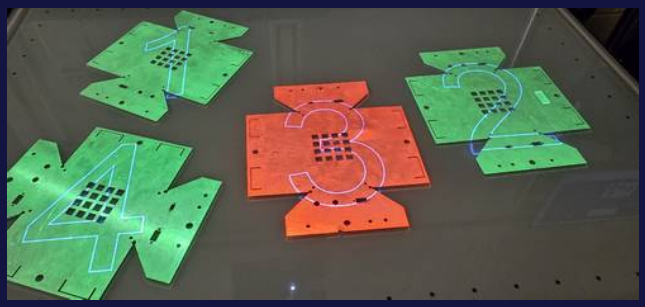
O-Ring Estimator

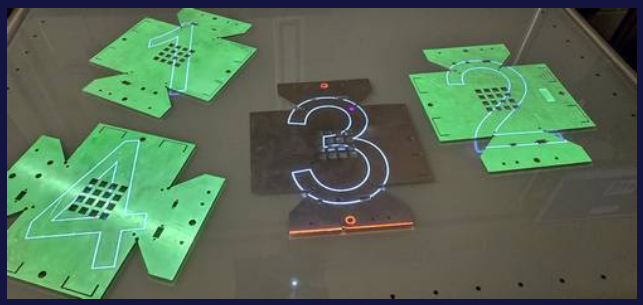
O-Ring sizes can now be determined without nominal values using the O-Ring estimator function.



Animated Augmented Reality GO/NO-GO Deviation Map

When the GO/NO-GO deviation map option is selected and projected onto the part the projected content will cycle between the standard red/green parts and a new graphic which highlights the failed and missing features.

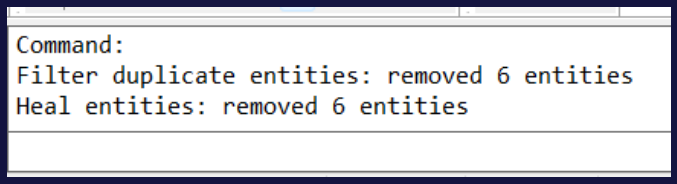




The animation quickly and intuitively conveys which parts are bad and why they are bad.

Removal of CAD Entities During Import - Feedback

If the imported CAD contains duplicate or malformed entities, these can be healed and duplicates removed automatically during import.



The software will now display the number of entities removed during this process in the command line section of the main Planar window.

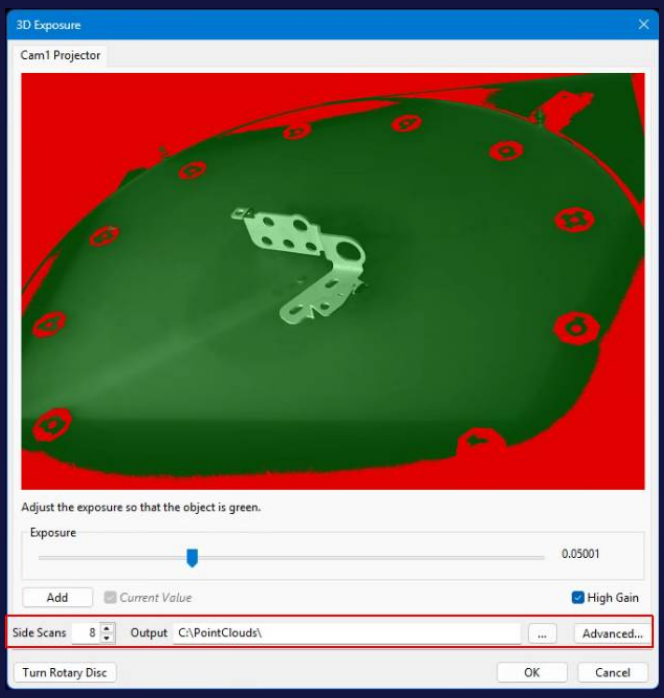
Opti-Scan Repositioning Disk Homing

The Opti-Scan repositioning disk will now attempt to return to its start location after each scan.

This removes systematic drift in the initial scanning position over time.

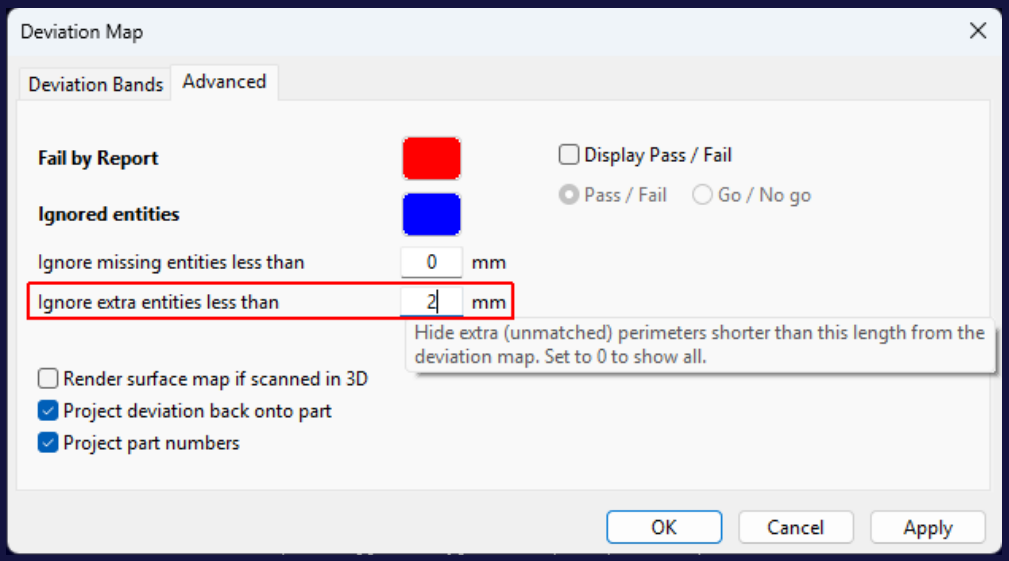
Common OptiScan Settings in Exposure Dialog

For the users convenience, common OptiScan settings have been duplicated in the Exposure dialog. The complete OptiScan settings tab can also be displayed and access from this location.



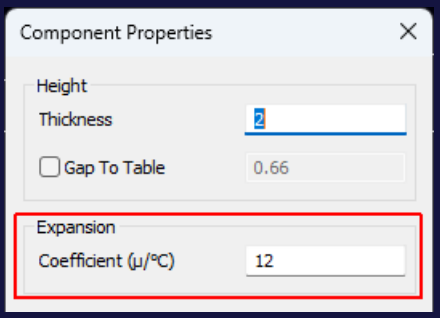
Ignore Extra Entities Option

Extra entities can now be ignored if they are smaller than the user defined size.



Coefficient of Thermal Expansion

Component properties now exposes the coefficient of thermal expansion.



This value and the ambient temperature and or the expansion of the table dots can be used to compensate for part expansion.

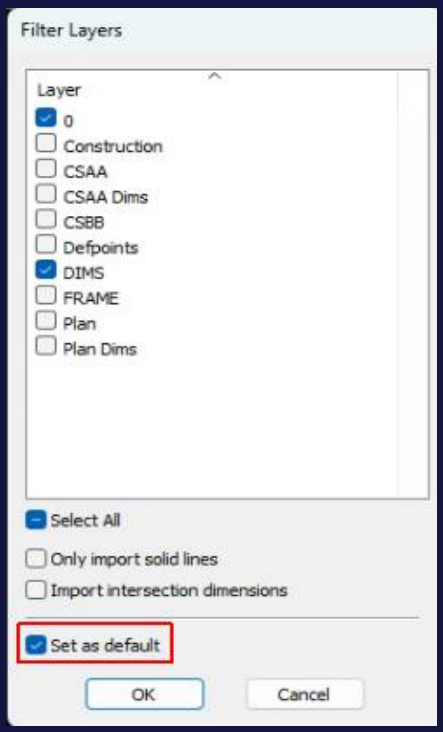
Color Coded Inspection Report Dialog List View

The tabulated report shown in the Inspection Report dialog now contains subtle color queues.

Name	Entity	Datum	Type	Nominal	Measured	Deviation	Tolerance	Alignment	Status
A	Line	Line	Dist	250.000	250.160	+0.160	±2.500	Global	Pass
B	Circle		Dia	9.000	8.893	-0.107	±0.400	Global	Warning
C	Circle		Dia	9.000	8.919	-0.081	±0.400	Global	Pass
D	Circle		Dia	9.000	7.921	-1.079	±0.400	Global	Fail
E	Circle		Dia	8.000	7.924	-0.076	±0.400	Global	Pass
F	Circle		Dia	8.000	7.930	-0.070	±0.400	Global	Pass
R	Interse...	Circle	Dist	8.602			±1.000	Global	Missing
S	Circle	Intersec...	Dist	8.603	8.693	+0.090	±1.000	Global	Pass
T	Interse...	Circle	Dist	8.602	8.602	+0.000	±1.000	Global	Pass

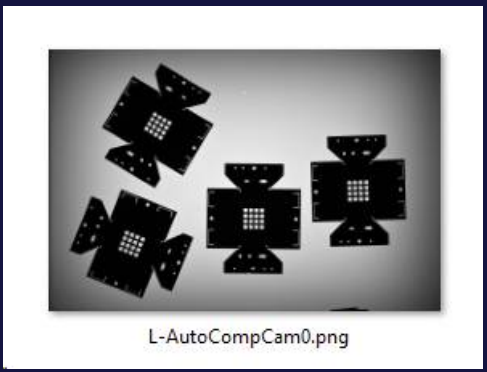
Filter Layer → AutoImport Training

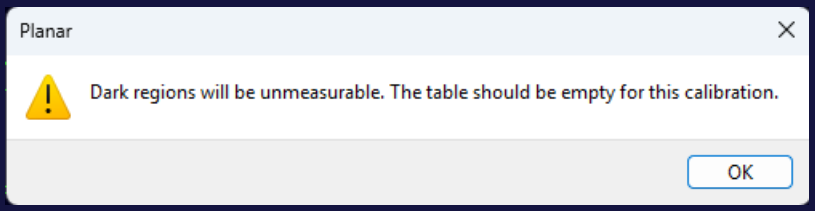
The filter layers dialog can be used to set the default layers to import when AutoImport is turned on, or the default selected layers when it is not.



Backlight Calibration Part Detection

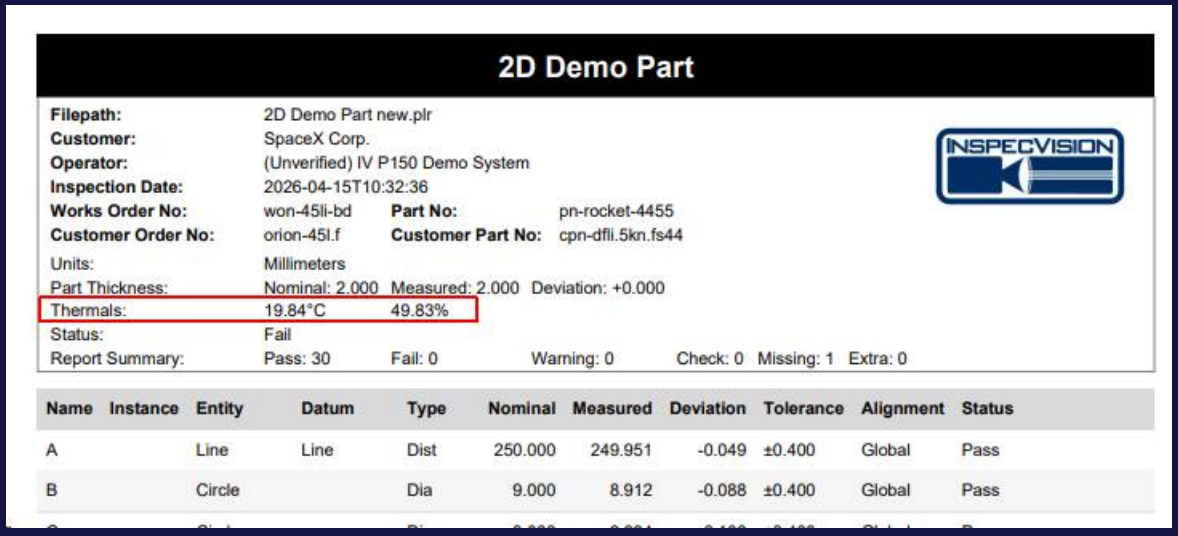
The back light calibration will detect foreign parts on the table much more reliably and warn the user.





Environmental Variables Reporting

The environmental variables recorded at time of measurement are now included in the inspection report.



2D Demo Part

Filepath:	2D Demo Part new.plr		
Customer:	SpaceX Corp.		
Operator:	(Unverified) IV P150 Demo System		
Inspection Date:	2026-04-15T10:32:36		
Works Order No:	won-45li-bd	**Part No:**	pn-rocket-4455
Customer Order No:	orion-45l.f	**Customer Part No:**	cpn-dfli.5kn.fs44
Units:	Millimeters		
Part Thickness:	Nominal: 2.000	Measured: 2.000	Deviation: +0.000
Thermals:	19.84°C	49.83%	
Status:	Fail		
Report Summary:	Pass: 30	Fail: 0	Warning: 0 Check: 0 Missing: 1 Extra: 0

Name	Instance	Entity	Datum	Type	Nominal	Measured	Deviation	Tolerance	Alignment	Status
A		Line	Line	Dist	250.000	249.951	-0.049	±0.400	Global	Pass
B		Circle		Dia	9.000	8.912	-0.088	±0.400	Global	Pass

These values will be saved within the .plr file.

Minor Updates

- Collection lines can be formed from a pair of arc midpoints.
- Multithreaded mesh decimation during the Align and Combine of OptiScan scan data. This is particularly useful with the new generation of OptiScan units with higher feature resolutions as the scan files are much larger.
- MMC inscribed circle fitting improvements
- Improvements in o-ring inspection speed
- Improvements in camera communication speed for high speed cameras
- Better number awareness when sorting items in the inspection report dialog list view
- AOI layer is included in the remove duplicates function
- Removed the standard deviation column from the inspection report dialog list view.
- Autogenerate report now references features rather than creating datum points.
- Autogenerate report now happens at the import stage to prevent report generation duplication.
- Improvements in the adaptive edge measurements to avoid noise in edge conditions.
- Autoimport of AOI layers can be triggered using a /area switch after the layer name.
- The AOI window now indicates that it is busy when it is calculating using the new settings.
- 3D scan data viewer improvements to the lighting
- Inspection items created using the SurfScan surface samples now populate the nominal value with the measured value to assist in dimension setup.
- Multiple perimeters can be selected during the creation of collection points.
- Opp files saved in the wrong units are detected using the marker positions in the opp file.
- Improved speed when loading and processing of plr files with SurfScan surface samples.
- Inspection report logos images now support alpha channels.
- Improved translation of some partially translated languages
- Adaptive black white split threshold exposed in component properties.
- Ability to delete a 3D position calibration scan added.

- Rename all inspection items sequentially after a change in arrangement or naming convention.
- Improvements to the navigation between reports and inspection items with the keyboard.
- AOI edge detection direction can be flipped for any type of item.
- During a manual CAD import, optionally save the current layer selection as default.
- The number of drift warning popups is reduced.
- Correct the scaling of printed report elements.
- Right-click to repeat extended to functions during a manual CAD import.
- Multipart deviation maps can use an alternate alignment.
- Log consumable events about the use of the system.
- Allow material condition for circle sizes in AutoGenerate.
- Explicit dimensions are defaulted on for new systems.

Fixes

- 2D reverse engineering mode flattens measurements to prevent osnaps at nonzero height.
- Restricted grippers next to the tabulated report prevent loss of association.
- Explicit dimension prompts appear in fewer cases.
- Manual Add prevents osnap to all dimensions.
- Wallpaper is shown only on the main display, not projectors.
- Print preview shows a clean white background.
- Improved importing of CAD blocks which interact with other layers.
- Implicit dimensions prioritise circles over arcs that share a center point.
- Reject arc/arc intersections to prevent misleading dimensions.
- Motorized 3D scans clear the scan viewer and file output folder.
- Reports are renamed with every inspection when the document/time option is on.
- Multipart AutoInspect shows a progress bar during snap.