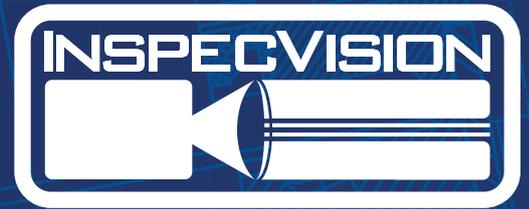


PLANAR



High Speed Integrated 2D & 3D Measurement System
Inspection & Reverse Engineering



Speed, accuracy & reliability

PLANAR - ONE SYSTEM FOR ALL YOUR MEASURING REQUIREMENTS

Planar is the world's fastest 2D measurement and reverse engineering system.

Designed specifically for quick, accurate first article inspection, quality reporting and reverse engineering, Planar is ideal for shop floor use, requires minimal operator input and is proven to increase production throughput across a wide range of applications including:

- Flat and folded/formed sheet metal components
- Gaskets and seals
- Laminations
- O-Rings
- Paper acetate and electronic drawings
- Other opaque and semi-transparent flat materials

Typical customers include sheet metal fabricators using X/Y CNC, laser, plasma, punch, water jet cutting and forming machines who supply to a wide variety of industries such as automotive, aerospace, electronics and communications. The Planar is used in over 30 countries worldwide from small job shops to multi-billion dollar turnover companies.

To extend the Planar to 2.5D, our SurfScan module can be retrofitted. For full 3D capability simply add our Opti-Scan 3D. With the complete system, parts can be checked at every stage of the production process.



THE TECHNOLOGY -2D INSPECTION

Parts are placed on a backlit glass surface. With a single click or scan of a barcode, over 40 million edge measurements are taken in 0.1 seconds using a high resolution camera.

Within seconds Planar will:

- Import the CAD file for the part
- Extract the relevant profile data
- Extract all dimensions and tolerance data from the layers
- Measure the part
- Generate reports automatically including measured data, nominal data, tolerance information and indicate all PASS/FAIL items
- Display/Print a colour deviation diagram comparing CAD data to measurement data
- Project deviations back onto the part using Augmented Reality
- Output SPC data for analysis

The 2D process can measure every feature completely and produce multiple report types automatically with minimal input from the operator.

Planar can be fully integrated with QC Calc SPC software enabling automatic creation of documents and traceability to meet requirements for QC reporting.

The system includes O-ring inspection as standard, enables multiple O rings to be measured in 0.1 seconds and quick identification of the failed parts.

2D REVERSE ENGINEERING

2D reverse engineering is a standard feature with every Planar system. Existing parts can be reverse engineered in seconds creating dxf or dwg CAD files. The software allows the user to edit and clean the data such as standardisation of hole sizes and clean edges and eliminates the need for hand measurement and CAD programming.

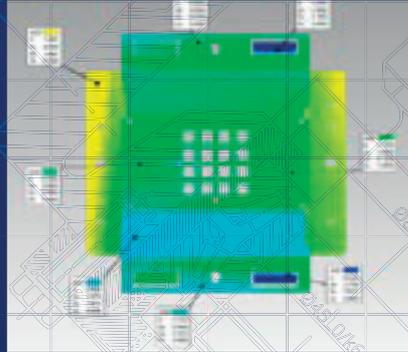
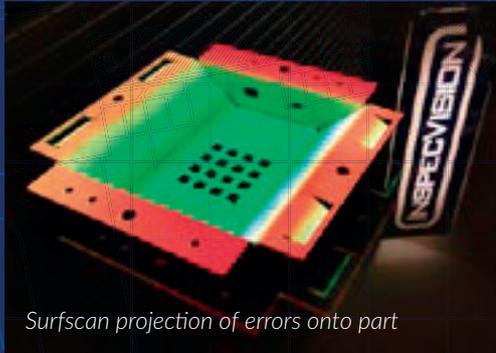
Physical parts or even paper, acetate or electronic image files can be reverse engineered to create CAD files. There is no comparable system on the market today which can offer this capability with such speed and ease of use. Reverse engineering processes can also be carried out in 3D using the optional 3D modules.



SURFSCAN – 2.5D ADD-ON OPTION FOR PLANAR

Many punching machines do not produce completely 2D parts. The parts have forms, louvres, small bends, pins etc. The SurfScan integrates seamlessly with the Planar 2D automatic inspection software to allow accurate inspection of both the parts 2D shape and its 2.5D features with a single click.

The SurfScan is a high resolution projector which mounts onto the existing Planar vertical column. The projector shines structured lights onto the part which are then imaged by the Planar's camera to create a 3D scan of the upper surface of the part, providing a powerful, yet easy to use 3D or 2.5D inspection capability.



The point clouds or meshes created by the system can then be loaded into free and readily available 3D inspection software for comparison against a 3D solid CAD model, such as step or iges.

The point clouds are also compatible with packages like Geomagic Control, Control X, Polyworks etc. Parts with complex geometry can be scanned from several angles to create a complete scan of all visible surfaces

OPTI-SCAN 3D - 3D ADD-ON OPTION FOR PLANAR

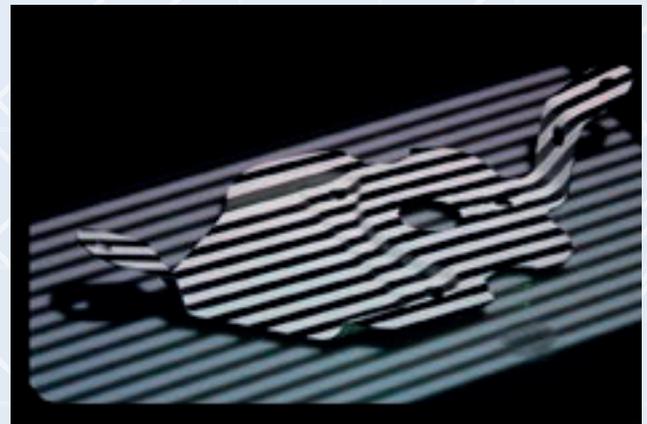


Opti-Scan 3D is the world's first 3D inspection system that can measure surfaces and edges in 3D. This non-contact white light scanning system uses a high speed, high resolution camera and an LED DLP projector to scan the surfaces of an object.

Patterns of light are beamed from the projector onto the part, these patterns are recorded by the camera and used to create a 3D point cloud of the scanned surface.

The Opti-Scan 3D outputs the ultra high resolution point clouds into a number of different file types which can be used in virtually any 3D inspection or reverse engineering software package.

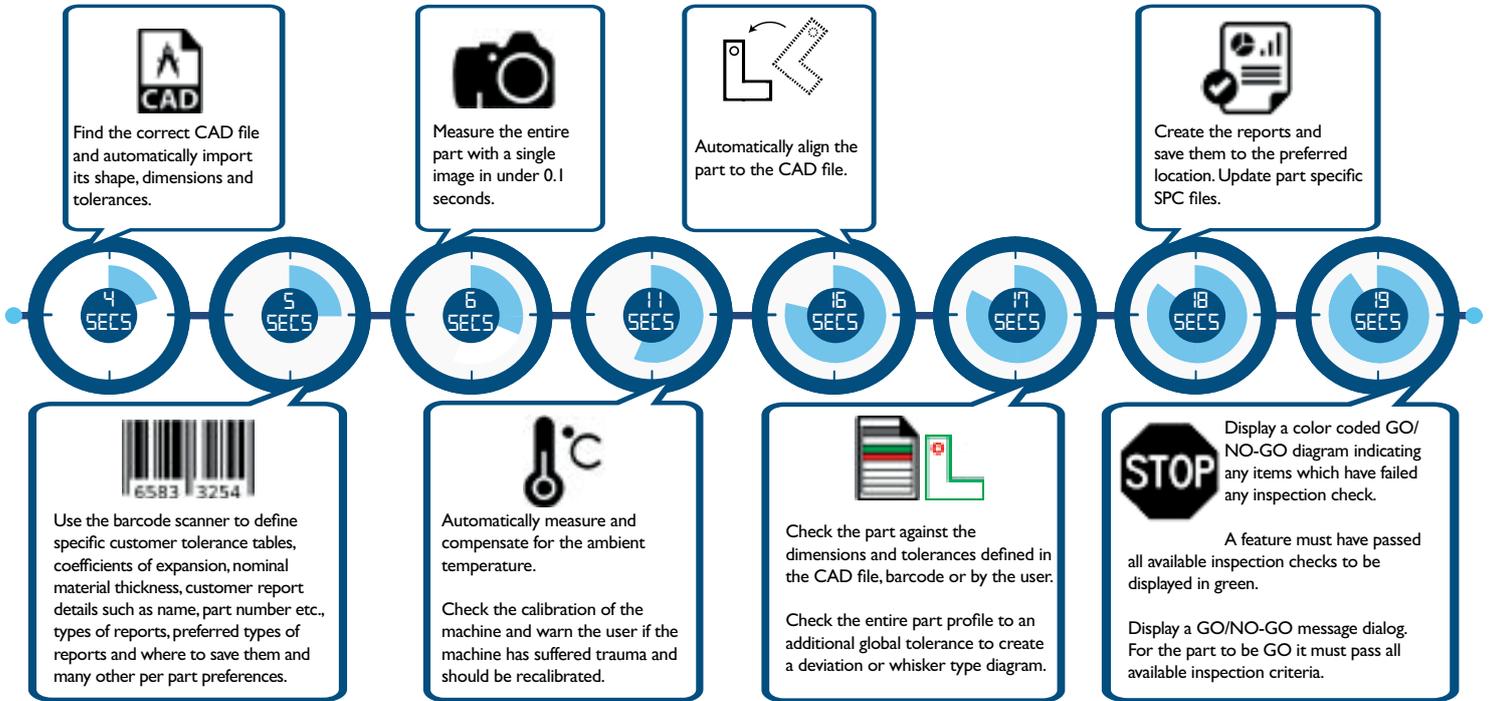
Opti-Scan 3D can be added to existing Planar systems transforming Planar into a complete 2D and 3D measurement system.



Key Features

- Single click automated inspection
- White light Scanning Technology
- 3D Surface and Edge Measurements -the world's only system that can measure edges in 3D.
- Texture mapping -can create a fully texture mapped point cloud in full colour.
- Speed and accuracy – scans objects at a rate of approx. 250,000 measurements per second.
- Retrofit and use with Planar 2D

Planar 2D -Typical Inspection Timeline



WHY CHOOSE PLANAR?

- World's fastest 2D inspection and reverse engineering system
- Fully automated one click inspection
- Machine sizes range from 500mm to 3000mm
- Accuracy from 12 microns
- No moving parts
- Scratch resistant
- Designed for shop floor use
- Simple calibration and minimal maintenance
- Minimal training required
- Easily retrofitted with full 3D scanning.
- Rapid return on investment

WHAT OUR CUSTOMERS HAVE TO SAY.....

"The greatest benefits for us are the accuracy, the user interface and the speed in which we can inspect parts"

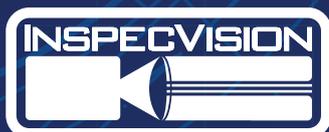
Stephen Burnett, Sr. Project Engineer
Sub-Zero Group Inc, Wisconsin, USA

"Due to the reliability of the machine we have not had the need to request support often...but support has always been excellent whenever it has been requested"

Operations Director
Whitwam Precision Components Ltd, Lancashire, UK

"The Planar machine has reduced our inspection time by 80%. We inspect about 90% more parts than before."

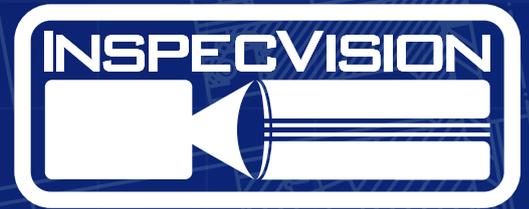
Quality Manager,
Siemens, Jiangsu Province, China



InspecVision Ltd
10 Trench Road, Mallusk
Co. Antrim, BT36 4TY
Northern Ireland

Telephone: +44 (0) 2890 844012
Email: sales@inspecvision.com
Web: www.inspecvision.com

OPTI-SCAN 3D



3D White Light Scanning System

3D Inspection and Reverse Engineering



Accuracy in every dimension

Opti-Scan3D

Opti-Scan 3D is the world's first 3D inspection system that can measure surfaces and edges in 3D. This non-contact white light scanning system uses a high speed, high resolution camera and an LED DLP projector to scan the surfaces of an object.

Patterns of light are beamed from the projector onto the part, these patterns are recorded by the camera and used to create a 3D point cloud of the scanned surface.

The Opti-Scan 3D outputs the ultra high resolution point clouds into a number of different file types which can be used in virtually any 3D inspection or reverse engineering software package.

Opti-Scan 3D can be used as a stand alone system or added to existing Planar systems transforming Planar into a complete 2D and 3D measurement system.



3D INSPECTION & REVERSE ENGINEERING

Scans are generated by projecting patterns of light onto the part. The patterns are recorded by the camera and our innovative software then analyses the data to produce a 3D point cloud of the scanned surface. Each scan can contain up to 40 million edge measurements and 20 million surface measurements. Any area of the part that can be seen by the camera can be measured.

The point cloud data can be outputted into a number of different file types which can be used in virtually any 3D inspection or reverse engineering software package allowing the user to:

- Compare the measurements to the nominal CAD model and create a colour coded deviation map of the errors in 3D
- Measure and compare the size of 2D and/or 3D positions of features such as holes, slots and cylinders against CAD nominals
- Measure bend angles in sheet metal parts and lengths of folded tabs etc.
- Create and analyse cross sections of the part
- Perform GD&T analysis
- Create customised formatted inspection reports
- Reverse engineer free-form surfaces and geometric entities from the point cloud data back to a variety of native CAD formats.



SOFTWARE COMPATIBILITY

Opti-Scan 3D is software neutral. It outputs a variety of universally compatible file formats that can be used by any 3D inspection or reverse engineering software packages such as:

- Geomagic Control X
- Polyworks
- GOM Inspect
- Solidworks Scan to 3D

SPECIALISTS IN EDGE MEASUREMENT

InspecVision are specialists in edge measurement and hold the patent for edge measurement using a backlight. Other 3D scanning systems can scan surfaces but they cannot effectively measure edges. Therefore they are unable to measure parts such as sheet metal components, whose shape is defined by their edges rather than their surface.



AUTOMATION AS STANDARD

With the Opti-Scan 3D a part can be measured and inspected with the click of a button or the scan of a bar code. Within 3-4 minutes the system can automatically:

- Convert bar codes into CAD file locations
- Scan the part from multiple viewing angles within the viewing hemisphere
- Output the scan data as point clouds
- Align the point clouds to the CAD model
- Create and print a colour coded deviation map
- Create and print an inspection report containing GD&T data and user defined critical dimensions.



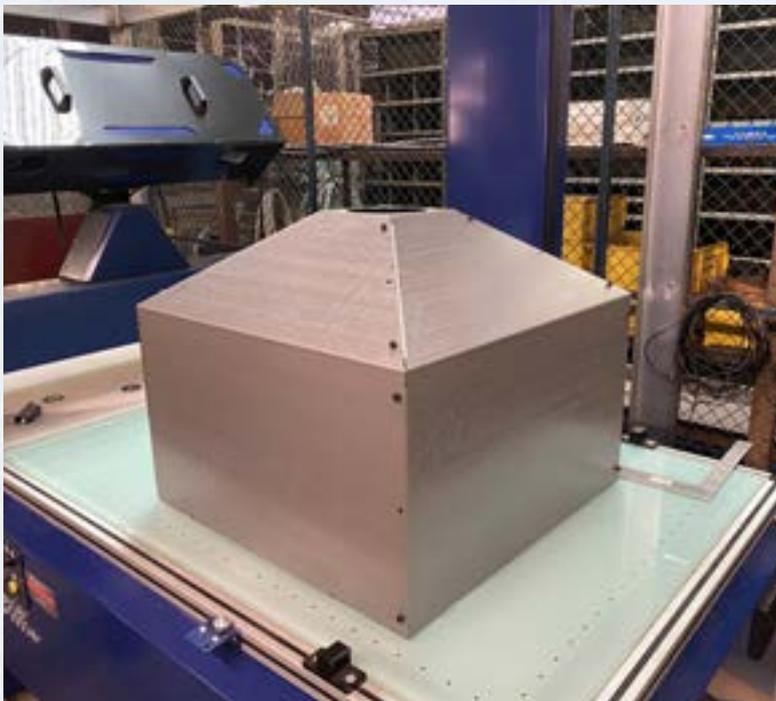
MOBILE LARGE VOLUME SCANNING

The Opti-Scan 3D can also be used as a portable 3D scanner by placing the scanning head on a tripod.

Large objects can be measured by attaching repositioning markers to the surface of the part or to a measuring bench or area. These markers are then used to automatically stitch the scans together. In this configuration almost any size of object can be measured.

WHY CHOOSE OPTI-SCAN 3D?

- Single click automated inspection
- White light scanning technology
- 3D surface and edge measurements - the world's only system that can measure edges in 3D
- 20MP camera as standard-competing products are typically 5MP or less.
- Texture mapping -can create a fully texture mapped point cloud in full colour
- Speed - scans objects at a rate of approx. 250,000 measurements per second
- Certified accuracy
- Designed for factory floor conditions
- Retrofit and use with Planar 2D
- Wide range of scanning sizes and accuracies available



WHAT OUR CUSTOMERS HAVE TO SAY.....

"We have been very pleased with our experience with both the machine and customer service at InspecVision. It has been a talking point of shop tours and customers have been very impressed."

Meredith Barnes, MarketingManager, US Metal Crafters

"The Opti-Scan has a good price to performance ratio and it is very fast to check the dimensional quality of a component."

**ThomasDuell, MeasurementEngineer
Auto Heinen (Scherer Group)**