

# XC65D(-LS) Cross Scanner

## Full 3D capture of complex features and surfaces



### Applications

- Inspection sheet metal features (slots, holes, etc.)
- Inspection of castings and complex surfaces
- Feature inspection
- Gap & flush inspection

Incorporating 3 lasers in a cross pattern, the XC65D captures all full 3D details of features, edges, pockets, ribs and freeform surfaces in a single scan. By digitizing complex features from 3 sides, the Cross Scanner acquires the complete 3D geometry of the features, driving the accurate extraction of positions and dimensions.

The Cross Scanner's entirely digital operation boosts scanning frequency and drives intelligent laser intensity adaptation to scan any surface without user interaction.

### Features

- Cross-pattern of 3 lasers to obtain full 3D view in one scan
- Drastically reduces time-consuming probe head indexing and eliminates C-axis
- Fast digital scanner operation including high-speed CMOS camera technology
- XC65D-LS longer stand-off variant for optimum capture of deep pockets and slots
- Accuracy 15µm (XC65D) and 20µm (XC65D-LS)



The XC65D is the scanner of choice for sheet metal, plastics and composites inspection applications.



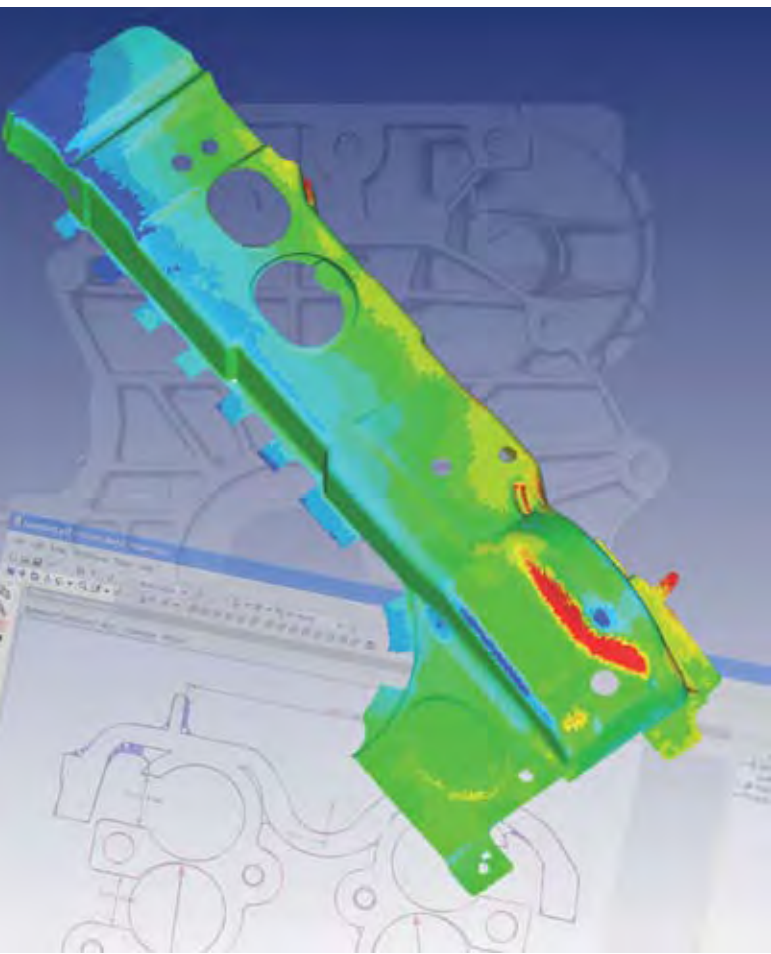
The scanner's high field of view depth results in major time savings when inspecting automotive cast parts.

## SCANNING

- Unique capability to measure freeform and fragile surfaces
  - Detailed description of freeform surfaces in short time interval
  - Non-contact measurement eliminates the need to touch fragile and delicate parts
  - Powerful reporting with colored CAD deviation maps
  - Input for reverse engineering, rapid prototyping, finite element calculations, and digital archiving

# Focus point cloud software

## Focus Inspection – The reference for point cloud processing



Focus Inspection is today's reference for point cloud inspection. The software offers stunning performance, an intuitive user-interface, and standard macro functionality to automate the entire inspection process.

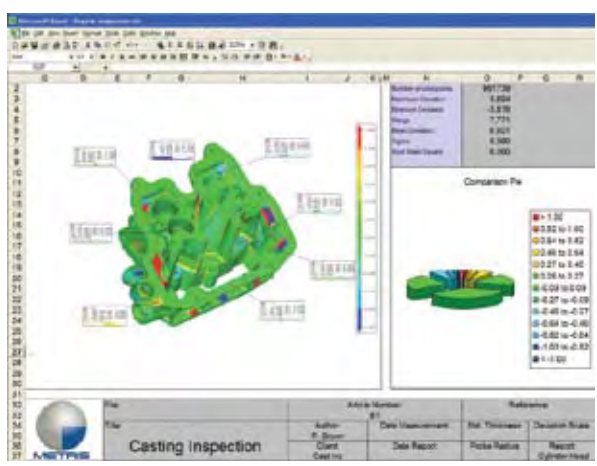
Focus Inspection provides feature and full part-to-CAD 3D inspection, starting from point cloud data or meshes from CMM scanners, handheld scanners or Computed Tomography (CT). Focus Inspection visualizes inspection results in easy-to-interpret, interactive graphics and reports.

### Features

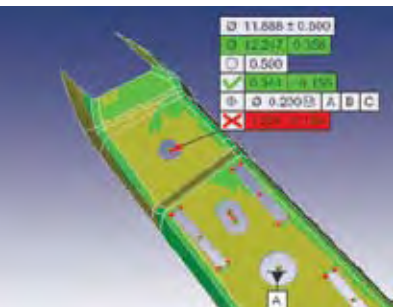
- Superior point clouding handling
  - Up to 100 million points
  - Powerful and automated feature detection algorithms
- Full inspection toolbox
  - Full part comparison to CAD or STL
  - Complete set of 2D and 3D features
  - GD&T (Geometric Dimensioning & Tolerancing)
  - Wall thickness, flush & gap, and directional comparison
- Flexible reporting and data sharing
- All inspection functions fully automatable
- Dedicated inspection modules (e.g. Turbine Blade Inspection)

### Benefits

- High productivity and data processing consistency with minimum effort
- Operator-independent results with accurate feature detection algorithms
- Designed for industrial use by operators and engineers
- Inspection automation without requiring programming skills
- Easy-to-interpret and interactive reporting to facilitate decision making



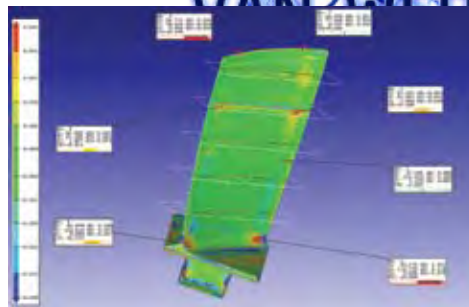
Color map reports clearly indicate local geometry deviations



Geometric dimensioning & tolerancing (GD&T)



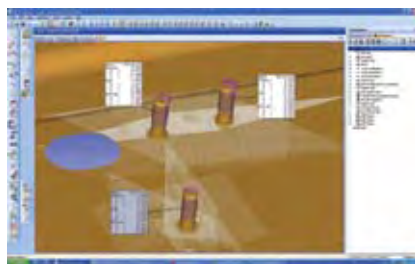
Gap & flush analysis



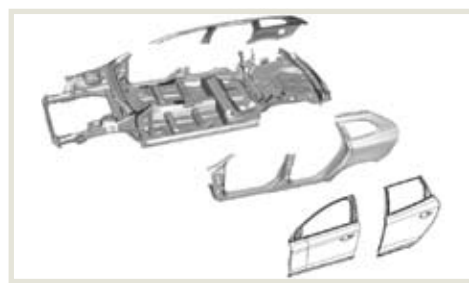
Turbine blade inspection



Inspection of features in automotive applications...



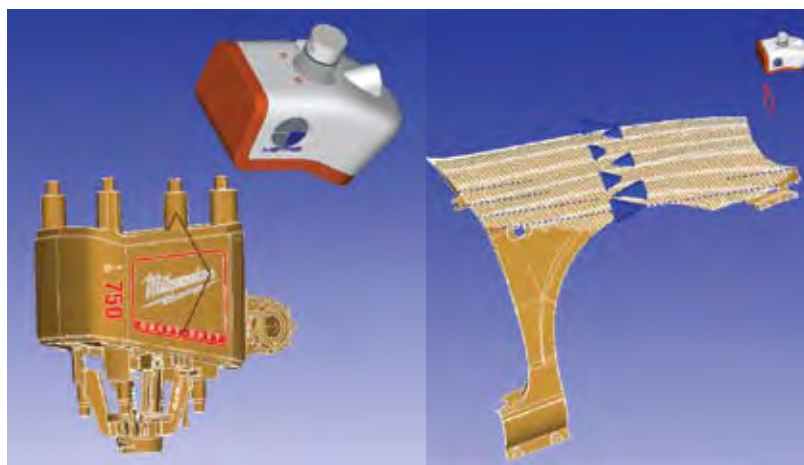
...are readily compared to CAD in Focus Inspection



Virtual assembly allows measured and CAD models to be built together to predict mating conflicts

## Focus Scan – Fast, easy and accurate data capture for CMM laser scanning

Focus Scan is the driver software for Nikon Metrology laser scanner integrations on CMMs. It provides off-line and on-line scanner path definition, and acquires and pre-processes the raw point cloud data. The software is fully integrated with Focus Inspection, Reverse Engineering and Automation. Focus Scan's off-line module enables users to create, modify and prove out part programs using 3D CAD models, allowing CMMs to be used exclusively for measurement.



Besides requiring simpler scanner motion paths, automatic scan path programming further reduces measurement preparation time.

A breakthrough in validating scan macros is the new point spray feature that simulates a point cloud as if the part is measured on the CMM.

## Focus RE Basics - Straightforward reverse engineering

Focus RE Basics quickly creates CAD surface models from individual point clouds using a straightforward workflow. Reverse engineering is typically applied when original CAD data is missing, to create CAD from handmade clay models, to update designs, or as input for rapid prototyping of freeform parts and products.

