

KUBE

Data sheet



METRIS

Reliable and Innovative Metrology Solutions

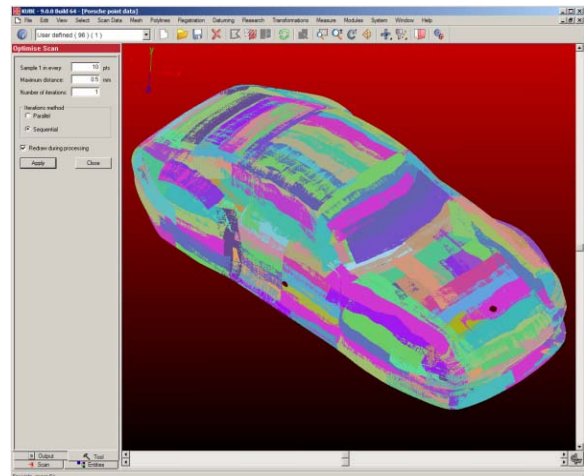
KUBE

KUBE is the product of over 14 years software development dedicated specifically to data capture and data processing for hand-held laser line scanners. The end result is the most intuitive 3D scan data package on the market. It comes loaded with easy to use features to help you make the most of your 3D scanner.

KUBE was developed as a dedicated data capture software for laser line scanners, rather than a general purpose point cloud data processing package for every type of 3D scanner. KUBE is therefore optimized to capture and process data organized as scan lines which means that processed data quality is better. With KUBE you benefit from over 14 years of software development dedicated to maximizing the ease-of-use and productivity of hand-held laser line scanners.

KUBE Scan

- User friendly data capture with ESP / ESP2* (enhanced sensor performance - tracking of scan surface and automated optimization of sensor settings for each stripe / point)
- Real-time rendered scan visualization
- Localizer (arm or K-Scan probe) driven scan menu
- Point processing
- Offline point filtering * ESP2: only available on MMD sensors



DATA CAPTURE

KUBE software provides the user with an array of simple to use data capture tools, including:

- Automatic tracking and adjustment of the sensor settings to ensure that optimum scanning performance is always achieved.
- A localizer-driven menu system that enables the user to control the scanner remotely, eliminating the need for the user to return to the computer during the scanning process. By simply moving the arm up or down, the menu choices are highlighted. The arm buttons are then used to select the desired menu item.
- 'Real-time rendering' which makes point data look like a mesh in real-time as it is being captured, enables the operator to see precisely what they have or have not scanned. Other packages that only display the points make scan data visualization difficult.

DATA PREPARATION

Laser scanners capture data very quickly. Because most scan jobs do not require the scanner's maximum resolution across the entire surface raw data often requires some degree of pre-processing to increase the speed of downstream processing.

Data preparation tools include 1D & 2D sampling, filtering of angled and reverse scans. 2D sampled data can be filtered in both U and V directions as defined by the user, providing maximum scanning efficiency without feature loss. Data reduction can reduce the size of a raw scan file by 50-90% without any significant feature loss.

KUBE Tools+

- Advanced datuming & coordinate system creation
- Data set registration
- Advanced online and offline point processing
- Mesh creation, mesh tools and cross sectioning

DATUMING AND REGISTRATION

Having good quality scan data is often not enough, it is also necessary to know where the data is located in relation to a fixed 3D reference system. KUBE provides powerful tools for quick and easy coordinate system creation.

Advanced interactive datum tools enable the user to create entities such as points, lines, planes, circles, spheres, cylinders, cones and slots. Both the contact probe and laser stripe can be used for datuming.

KUBE also offers interactive registration tools to enable the user to 'snap' and 'best fit' corresponding areas of overlapping scan data sets. This is particularly useful if no reference points are available on the scan part.

ON-LINE DATA PREPARATION

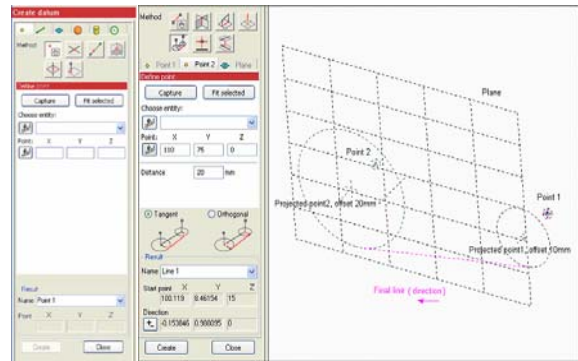
KUBE's automated tools can pre-process data in real-time during scanning. In other 3D software data preparation is often a lengthy manual process.

Users can also pre-define the characteristics of the data they want before scanning as a 'Scanning Profile'. These profiles allow rapidly changing the scanning parameters during scanning to make sure the optimal settings are used for every part of the scanned object.

MESH CREATION (MERGE), AND MESH PROCESSING TOOLS

Merge processes all the overlapping raw scan data patches into a single, unified polygon mesh. Merge is a combination of several sub-processes (2D Sampling, Optimise & Polygon reduction) which can all either be performed individually or automated during the process. Optimize was developed to reduce overlap errors in the different scan patches, introduced into scan data by portable CMM arms.

KUBE's algorithms have been specifically designed for meshing laser stripe data, (unlike other 3D packages which are required to mesh point data from a wide range of 3D scanners), this means that with KUBE there is no compromise, you get the highest quality and accuracy raw mesh possible from your laser line scanner. It also offers powerful mesh processing tools such as: hole filling, noise reduction, feature enhancement, polygon reduction and so on.



KUBE Inspect+

- Import of CAD model (through Rhino software)
- Surface & section to reference (CAD) inspection
- Feature measurement and dimensioning
- Color plot report generation with fly-outs

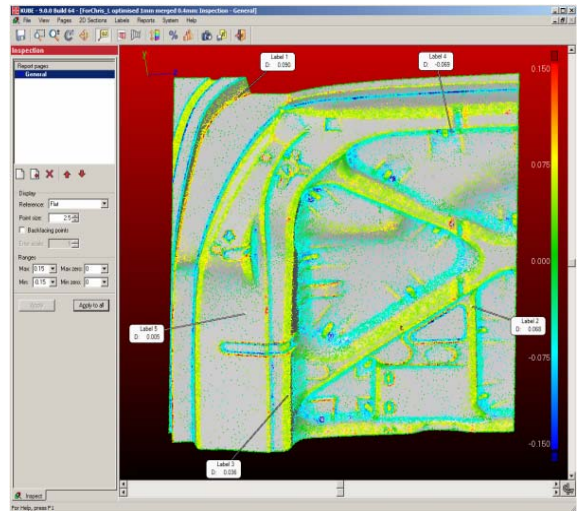
SCAN DATA TO CAD INSPECTION

Users who require scan to CAD inspection, especially those on the shop-floor, often do not require all the high-level functionality found in dedicated inspection software packages. KUBE inspection has been developed with this in mind and is designed to provide only the essential inspection functions in an easy to use format.

KUBE inspection is a simple to use 'shop-floor' software tool developed for basic surface inspection and can either be used on-line, to give an immediate visual inspection result, or off-line to generate an electronic or printed report.

KUBE inspection provides tools for the following:

- CAD import through Rhino supporting DWG/DXF (AutoCAD 200x, 14, 13, and 12), SAT (ACIS), X_T (Parasolid), STL, OBJ, STEP, VDA, IGES (and more)
- Rapid Scan to CAD comparison with a clear rainbow-plot display
- Quick bitmap generating 'snapshot' function
- Pick point error flags displaying user formatted deviation details
- Coloured sectional inspection with 'whisker' style graphical output
- Histogram display and other statistical data
- Generate a PDF or HTML report to a user defined template with one button click



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