



Know The Working Principle of 3D Laser Scanning Modelling

3D laser scanning is a contactless non-destructive technology, which digitally takes the images of physical objects' shapes with the use of a line of laser light. Machines, scanners, used for scanning build *point clouds* of data from an object surface. In simple words, 3D laser scanning is a medium/process to click and take the images of an object as per its actual shape and size onto the Internet as a 3D representation.



3D Laser Scanners, the machines used in the scanning process, do measurement and image clicking fast to build precise point clouds. The modelling, especially [3D laser scanning modelling](#), is suitable for the inspection and measurement of complex geometries and contoured surfaces that need huge data for their correct description.

The process of 3D laser scanning

- **Data acquisition** – In the 3D laser scanning process, an item going to be scanned is put on the digitiser bed. Specific software takes the laser probe just above the item/object surface. It projects a laser light lane onto the surface. At the same time, two sensor cameras constantly track the changing laser line shape and distance in three dimensions when it sweeps the item.

- **Data resulting** – The object shape seems like millions of points, acknowledged as a *point cloud*, on the monitor of a desktop/laptop when the laser goes around the object shape surface for image capturing. This process is fast and gathers around 750 000 points a second.
- **Point cloud data for inspection** – The technicians compare the CAD nominal data done by a designer before the inspection of the data. They deliver the outcome of the comparison process in a *colour map deviation report* in PDF format. It explains the differences between the CAD data and the scanned data in the picture form.
- **Application-based modelling choice** – after the creation of huge point data files, the experts register and merge the same into a 3D object representation and post-processed via several software packages that are ideal for a particular application.

CAD model for reverse engineering

3D laser scanning is the most accurate, fastest, and automated process to obtain three-dimensional digital data for the purpose of reverse engineering. With the use of specific software, technicians use the point cloud data for the creation of a three-dimensional CAD model of the geometry of a part/object. The CAD model ensures the accurate reproduction of the scanned product. Or it corrects the imperfections of an object. For your need, you can consult a reputed provider of [reverse engineering services in California](#). The company will serve you after having close interaction with you.