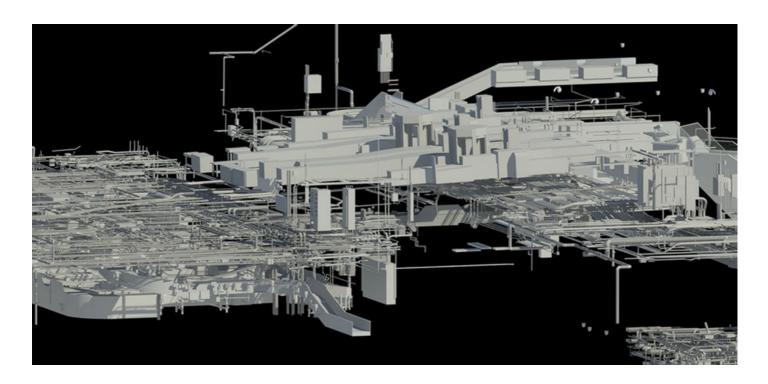


## Know The Working Principle of 3D Laser Scanning Modelling

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 <u>reverse engineering services in California</u>. The company will serve you after having close interaction with you.