

The point cloud is the initial useable 3D output generated by 3D laser scanning. 3D scanners capture approximately 250,000 points per second, and a complete point cloud is made up of billions of points.

Each point is generated by the impact of the laser upon a surface. This light impact will provide information to the scanner on the following: the x, y and z coordinates of the point concerned, its reflectiveness (matt or gloss), luminosity (light or dark) and orientation (light direction). All the information associated with this point is stored in a data base.

For the constitution of a point cloud which represents a complete structure, Urbica will combine all the viewpoints recorded on site in a single data base (assembly).

As raster images relate to vectorized plans, point clouds represent the raw material of 3D models. Although equally accurate and reliable, they do not include all the "properties" delivered by conventional 3D models.



The majority of CAD softwares will allow these files to be read, provided that an appropriate module is added. For example, PDMS, PDS, SmartPlan, Autocad, Microstation, 3DSMax, etc. can import millions of points, with no difficulty, using a plug-in such as Pointools or Lasergen.

Depending upon the operating tool selected, the point cloud will allow the following:

- the display and manipulation of the digitized installation in three dimensions;
- the reading of distances between equipment (point to point) or the precise identification of pipe diameters;
- the segmentation of elements of the point cloud into "functional components" (pipes, civil engineering structures, instrumentation, structures, etc) ;
- the isolation of "layers" in the point cloud for the creation of sections, longitudinal profiles or 2D plan views;
- the detection, analysis, documentation and resolution of collisions between a 3D model and the point cloud, which reflects the actual situation.

Find out about our other services by visiting our website at urbica.net.

To request a demonstration on your premises, call us on +33 141 500 036.

