3D Scanning

What is 3D Scanning?

3D scanning is an advanced technique that allows the geometry and dimensions of an object or environment to be captured by creating a point cloud. This point cloud is transformed into a 3D model, which is used for inspection, analysis and product design. At Applus+ Laboratories, we use state-of-the-art technology to provide accurate solutions in various industrial sectors such as [automotive](#), [railway](#), [aerospace](#), and energy.

What Types of 3D Scanning Do We Perform?

We perform the following types of 3D scanning:

3D Scanning

3D scanning allows us to capture the exact shape and dimensions of parts or structures. This process is essential for the creation of digital models of physical objects, which can be used in engineering, design, simulation or for the creation of digital twins.

Applications

- Inspection of products and prototypes.
- Dimensional analysis with or without CAD
- Quality control and validation of parts.
- Integration in additive manufacturing processes.
- Digital documentation of historical or artistic objects.
- Reverse engineering for subsequent manufacturing up to 15 m.

Advantages

- Highly accurate detail capture.
- Flexibility to scan objects of any size and location.
- Compatible with a variety of CAD formats for further manipulation.

Reverse Engineering

Reverse engineering allows the digital reconstruction of physical parts without the need for prior drawings or CAD files. Through 3D scanning, we generate a three-dimensional model or point cloud that can be used to reproduce the part, optimise designs or make modifications.

Applications

- Reproduction of old or discontinued parts.
- Optimisation of products and manufacturing processes.
- Development of new components from a base model.

Advantages

- Eliminates the need to physically disassemble products.
- Saves time and resources in design and redesign.
- Reduction of errors in the reproduction of parts.

Benefits of 3D Scanning

3D scanning offers a number of significant advantages for companies looking to improve accuracy and efficiency in their manufacturing, design or maintenance processes:

- **High accuracy:** Captures data down to an accuracy of 0.02 mm, enabling stringent quality control.
- **Time and cost savings:** Enables fast, non-invasive inspection of parts without the need for physical contact.
- **Versatility:** Can be applied to objects of different materials and sizes, from small parts to large infrastructures.
- **Asset digitisation:** Facilitates the creation of digital twins for use in simulation, planning and project optimisation.
- **Error reduction:** Minimises the risk of production failures by providing accurate models for testing and modifications.

Why Choose Applus+ Laboratories for 3D Scanning?

Applus+ Laboratories is a leader in [metrology](#) and 3D scanning services, with years of experience in various sectors. Our solutions are designed to meet the needs of projects of any scale, with a focus on accuracy, speed and adaptation to client requirements.

- **Advanced technology:** We use state-of-the-art scanning equipment to ensure accurate results.
- **Qualified experts:** We have a team of engineers specialised in metrology and 3D scanning, trained to handle complex projects.
- **Customised solutions:** We tailor our 3D scanning services to the specific needs of each industry and project.
- **International coverage:** We offer both in-lab and on-site scanning services, allowing us to serve Clients anywhere in the world.

3D scanning at Applus+ Laboratories provides a complete and versatile solution for the capture and analysis of three-dimensional objects. We have the experience and resources to ensure quality and accuracy in every project.