Precise 3D scan data with high-resolution color texture

„The CMHI chose this scanner model [smartSCAN] for its speed, resolution, accuracy, and portability. The light weight of the scanner (4 kg) and its relatively faithful recording of color were also important.“

3D Imaging Report CMHI of the Peabody Museum, Harvard University

Our Philosophy

Efficient and high-precision production monitoring, quality control, inspection and relieable reverse engineering are absolutely essential to be competitive in a global market.

In the field of industrial metrology and beyond, optical and portable non-contact 3D measuring systems become more and more important. We offer optimized solutions around your inspection and digitization tasks to keep the quality of your products always at the maximum level.

MEASURE THE ADVANTAGE

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3D Scanner

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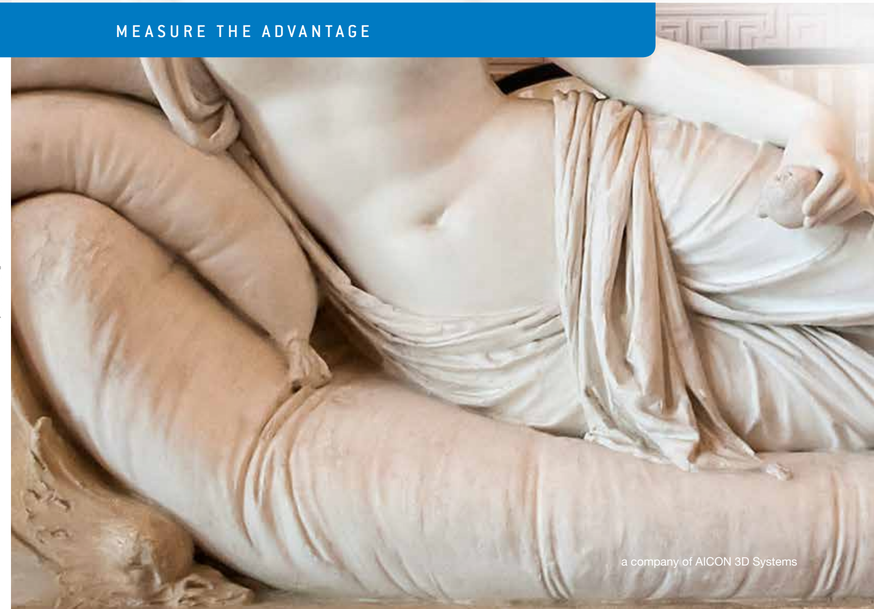
3D SCANNING SOLUTIONS FOR
Arts & Culture

MEASURE THE ADVANTAGE



a company of AICON 3D Systems

Arts & Culture

In the course of its evolution mankind has created magnificent works of arts whose heritage must be preserved for both present and future generations. The digital acquisition and documentation of these master pieces with state-of-the-art 3D scanning technology are therefore increasingly gaining in importance — be it in architecture, fine arts, archaeology or paleontology. The contact-free scanning process can be carried out in the museum as well as at the archaeological site, allows for delicate objects to be handled with the utmost care and provides detailed 3D data with high-resolution color textures for thorough studies without using the original.

RANGE OF USE

- Optimum protection of the object thanks to contact-free data capture
- Flexible, location-independent 3D scanning
- Digital images for precise analyses
- Data for virtual reconstructions
- Time-saving documentation and easy archiving
- 3D data for the creation of true-to-original replicas

VIRTUAL RESEARCH & DOCUMENTATION

Reliable data acquisition on-site or in the museum

Digital 3D models for archaeology even under extreme conditions.

Be it in the exhibition room of a museum or directly at the site of the find – the smart*SCAN* captures valuable objects ranging from a few millimeters to several meters in size at any given and occasionally unusual or remote location. The system operates reliably even under the most demanding climate conditions (heat, cold, humidity); the time-saving 3D scanning of the finds complemented by hand drawings provides objective representations in any desired perspective and illumination.

The generated 3D data are of valuable support for detailed examination, evaluation, modeling and archiving. The models can be optionally visualized with or without texture, whereby the structure in the 3D data is in most cases more clearly visible when screening out any discolorations (staining, weathering marks).

Virtual search for evolutionary traces

Precise scan data for paleontological and anthropological studies.

Digitizing teeth and bone finds reduces the need for repeated physical handling of the sensitive object. Even tiny objects are captured in minutest detail, including its original color. Using Breuckmann's software OPTOCAT, the generated 3D data is aligned in reference to the object's anatomic criteria. These virtual images serve, for example, as the basis for the reconstruction of skull finds or for the creation of functional wear patterns of the teeth.

For international project groups, three-dimensional scan data of their finds offer significant facilitation of their research work as they are easily and future-proof archived; using online databases, they can also be processed jointly or even simultaneously.

Digital "fingerprints" of works of art

Detailed structures with high-resolution color textures.

Be it for the documentation of the current condition, the analysis of the brush work or the creation of a comprehensive digital archive: The fast and contact-free scanning protects the delicate master pieces and captures even irregular shapes or smallest height profiles.

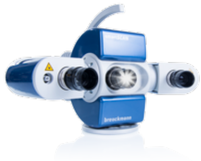
The generated 3D models often reveal fine details or individual working techniques which are difficult to detect at the original. Furthermore, by applying the OPTOCAT software module 'Texture Mapping' photographs can be transferred onto the 3D data at sub-pixel accuracy, regardless of whether these images have been generated by the scanner or taken with any external camera: The optimum synergy of high-resolution 3D data with high-resolution color textures.

True-to-original replicas in 3D

3D digitization for replicas and mold making.

Using scan data widens the scope of scientific work in all aspects of the original: The third dimension of a work of art not only constitutes a detailed foundation for its studies, it also facilitates its professional restoration or reconstruction.

The virtual image is scalable to any size and serves as the basis for model and mold making or rapid prototyping in any desired dimension. Based on the digital templates, true-to-original copies are created with the aid of cast molds or 3D printers. These replicas can then be used in a variety of applications, e.g. for exhibition purposes or in educational material.



Elaborate measuring solutions down to the last detail
Thanks to three different triangulation angles (10°, 20°, 30°), even deep indentations are measured in every detail and represented in the 3D model in selectable perspectives. To achieve optimum illumination, Breuckmann's software OPTOCAT allows setting several light sources; the color textures can be faded in or out as required.

ADVANTAGES

- High-resolution, detailed 3D data
- Low weight, suitable for mobile use
- Easily changeable measuring fields
- Three triangulation angles (10°, 20°, 30°)
- Black-and-white or color cameras
- Texture Mapping module for 3D data with high-resolution color texture
- Extendable with turn/tilt unit, photogrammetry and tracking