MICRON3D color stereo

SMARTTECH 3D METROLOGY

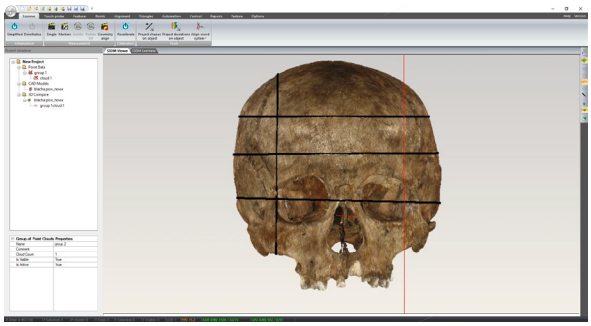
3D SCANNERS FOR DIGITALIZATION WITH REALISTIC COLOUR

Create digital twin in color

MICRON3D color stereo is a 3D scanner created to precisely digitalize colorful objects. This unique touchless measuring system is a perfect tool for creating a Digital Twin of real objects both for archiving valuable artifacts and creating virtual prototypes in any industry.

The highest resolution available on the market allows for imaging objects with the highest level of detail, which makes it a perfect tool for digitization of objects such as: pottery with ornaments. The newest technology allows for registering all small details like canvas damages or microfractures. Sensitive detectors of the scanner ensure that both dark and shiny objects can be scanned. Integration with a shadeless lighting system provides high-quality, accurate color data.

MICRON3D color stereo is equipped with an adjustable tripod transport case, and SMARTTECH3Dmeasure software. Measuring automatization and processing functions guarantee the high quality of shape and color information. Thanks to the temperature-resistant, carbon-fiber casing, and replaceable dustproof filters, it can be used also during excavations.

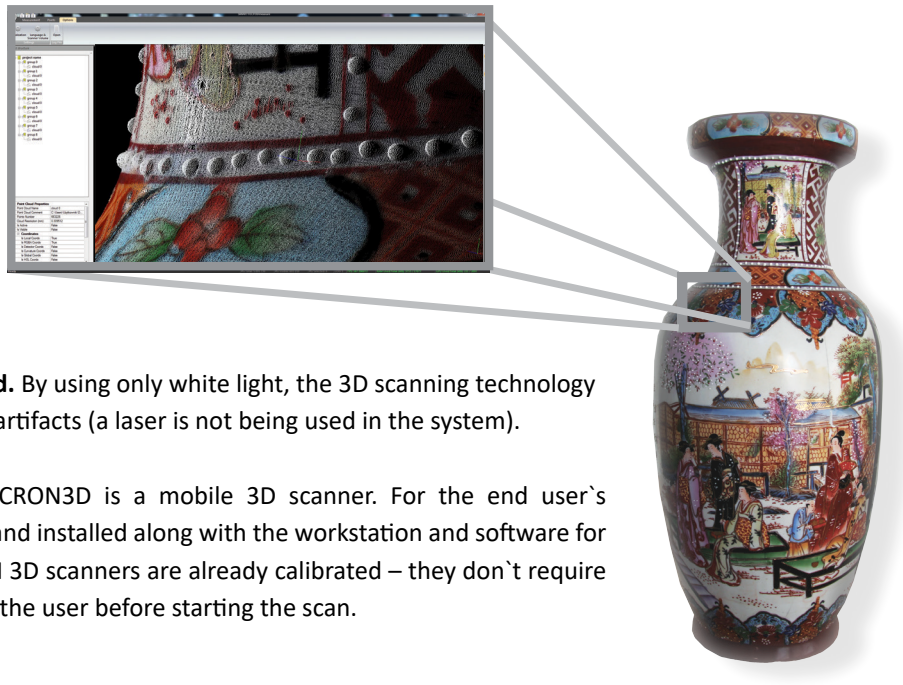


MICRON3D
color stereo

The scanner does not require calibration and thanks to its „plug&scan" system can be used without a long preparatory process. It is ready to use right after being plugged in. Despite the advanced measuring technology the usage of the scanner has been simplified to be operatable for a person without specialized technical knowledge.

MICRON3D color stereo is currently the one and only scanner with such a high scanning resolution, which at the same time obtains information about the color of the object.

The result of the measurement:
a dense cloud of points
(X, Y, Z with RGB)



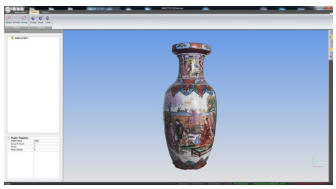
Non-invasive technology guaranteed. By using only white light, the 3D scanning technology guarantees safety for the measured artifacts (a laser is not being used in the system).

Convenience and ease of use. MICRON3D is a mobile 3D scanner. For the end user`s convenience, each scanner is delivered and installed along with the workstation and software for measuring data processing. SMARTTECH 3D scanners are already calibrated – they don`t require any additional calibration performed by the user before starting the scan.

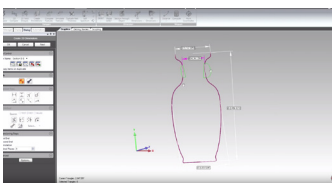
Specialization of the scanner for the needs of museum measurements. Over 20 years-long experience in 3D scanners production and cooperation with museums helped us to introduce additional improvements and equipment specialized for the measuring of national heritage objects. Among others, we offer numerical controlled rotary stages for measurement automatization and a fully integrated, professional shadeless lighting system triggered by a 3D scanner. It ensures uniform reproduction of texture and color throughout the entire object. The shadeless lighting system integrated with MICRON3D color scanners is the only such solution on the market. We provide professional service, technical support, and comprehensive training in 3D scanning and data processing.

3D scanning process
using the shadeless system

The result of 3D scanning
clouds of point (X, Y, Z with RGB)



Triangle mesh
(STL - created automatically)



Virtual sections
and dimensioning

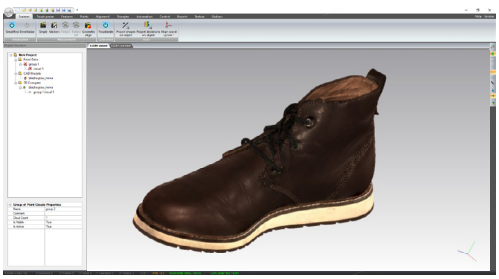
REFERENCES. Thanks to the compliance with strict safety standards for the artifacts and generating models that meet the requirements of digital eternal documentation, MICRON3D color stereo systems have been introduced in the Polish and foreign cultural institutions and museums. We have gained the trust of: the National Museum of Prehistory in Taiwan, the National Maritime Museum in Gdańsk, the Museum of the City of Łódź, the District Museum in Toruń, the Museum of the Origins of the Polish State, the Museum of Gas Industry in Paczków, and many others.

ARCHIVING. The result of scanning with MICRON3D color stereo is a cloud of points with X, Y, Z coordinates and RGB color information. The color cloud of points is considered the most convenient way of archiving due to the lack of distortions related to further data processing, and, for example, the necessity of projecting the texture on the model. Thanks to the highest resolution, measuring data can be used for research purposes, as well as can be simplified for popularization.

VIRTUAL RESEARCH. A digital twin obtained with the use of a MICRON3D scanner allows easy sharing of the results without the need of relocating valuable artifacts. SMARTTECH3Dmeasure software makes it possible to create virtual cross-sections, calculate the surface area and volume, and conduct comparative studies of objects or their changes over time.

VISUALISATION. SMARTTECH3Dmeasure gives the possibility for the automatic generation of realistic mesh models with texture, that can be used for creating virtual museums available online, exceptionally high-quality presentations, and visualizations.

VIRTUAL DATABASES AND PROTOTYPING. Digitalization of prototypes in color allows optimizing storage costs and designers` work. Such a digital database of prototypes is used for example by the shoe industry for design and production processes.



The ideal shape and color reproduction - perfect Digital Twin

Technical specification

Resolution	6-6 MP			
Scanning Technology	Structural white LED light			
Measuring field* [mm2]	200x133	300x200	400x266	600x400
Measuring depth* [mm]	60	120	180	240
Sampling * [pts/mm^2]	230	100	60	25
Accuracy[µm]	21	30	43	63

Resolution	12-12 MP			
Scanning Technology	Structural white LED light			
Measuring field* [mm2]	200x150	300x225	400x300	600x455
Measuring depth* [mm]	60	120	180	240
Sampling * [pts/mm^2]	402	178	100	45
Accuracy[µm]	21	30	43	63

Resolution	20-20 MP			
Scanning Technology	Structural white LED light			
Measuring field* [mm2]	200x135	300x200	400x260	600x400
Measuring depth* [mm]	60	120	180	240
Sampling * [pts/mm^2]	755	335	189	84
Accuracy[µm]	21	30	43	63

* +/- 10% value

Additional accessories:

Easy & fast change of measurement volume with exchangeable lenses

Automated rotary stages:
- max load 15kg, 200mm diameter
- max load 80kg, 500mm diameter
- max load 300kg, 500mm diameter

Some of our customers:

Military Police

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BOEING

Central Office of Measures

NASA

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