

MICRON3D *color*

SMARTTECH3D
M E T R O L O G Y

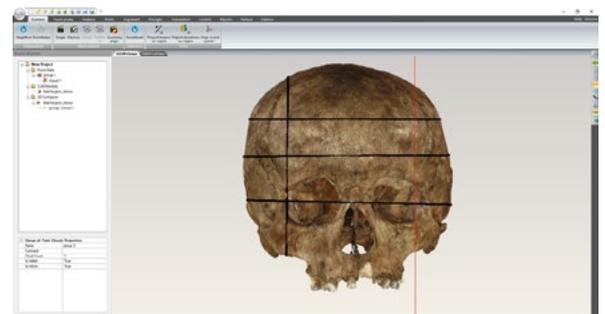
3D SCANNERS FOR DIGITALIZATION WITH REALISTIC COLOUR Create digital twin in colour



MICRON3D color is a 3D scanner created for the precise digitalization of 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 prototypes documentation.

The highest resolution available on the market allows for imaging objects with the highest level of detail is perfect for digitization of objects with the for example pottery ornaments, registering all small details like canvas damages or microfractures. Sensitive detector of the scanner ensures that both dark and shiny object can be scanned and integration with a shadeless lighting system provides high-quality, accurate color data.

MICRON3D color is equipped with a tripod with pan and tilt adjustment tripod, durable transport case and mobile workstation with 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.



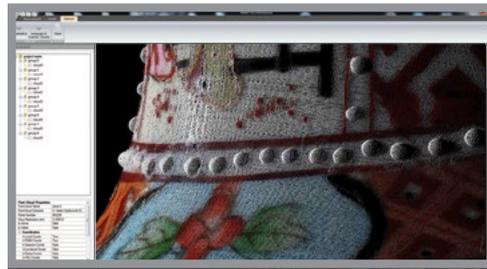
MICRON3D

color

The scanner does not require calibration and thanks to its „plug&scan” system can be used without 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 so that it can be operated by a person without specialized technical knowledge.

MICRON3D color 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. The 3D scanning technology using only white light, LED light guaranties measured artifacts safety (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 systems 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 to generating models that meet requirements of digital eternal documentation, MICRON3D color systems have been introduced in many of the Polish and foreign cultural institutions and museums. We have gained the trust of such institutions as: the National Museum of Prehistory in Taiwan, National Maritime Museum in Gdańsk, Museum of the City of Łódź, District Museum in Toruń, Museum of the Origins of the Polish State, Museum of Gas Industry in Paczków, and many others.



ARCHIVING. The result of scanning with MICRON3D color 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.



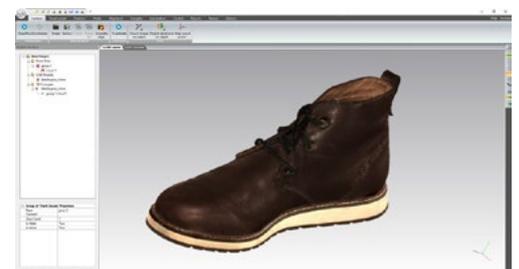
VIRTUAL RESEARCH. A digital twin obtained with the use of a MICRON3D scanner allows easy sharing of the results without the need of relocating valuable artifacts. SMARTTECH3Dmeasure software makes it possible to create virtual cross-sections, calculating the surface area and volume, conducting comparative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



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

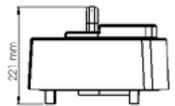
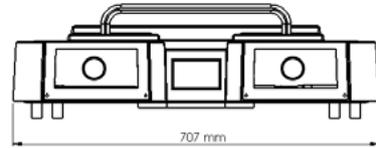


VIRTUAL DATABASES AND PROTOTYPING. Digitalization of prototypes in color is a unique example of visualization of company resources that allows to optimize storage costs and designers` work. Such a digital database of prototypes is used for example by the shoe industry for design and production processes.



The ideal shape and color reproduction
- perfect Digital Twin





Technical specification

Resolution	5 MP				10 MP			
Scanning technology	White LED structured light				White LED structured light			
Measuring field [mm ²]	150 x 200	200 x 300	300 x 400	400 x 600	150 x 200	200 x 300	300 x 400	400 x 600
Measuring depth [mm]	90	150	180	240	90	150	180	240
Distance between points [mm]	0,078	0,117	0,156	0,234	0,052	0,078	0,104	0,156
Sampling [points/mm ²]	164	73	41	18	369	164	92	41
Accuracy [µm]	25	40	60	80	25	40	60	80

Resolution	18 MP				24 MP			
Scanning technology	White LED structured light				White LED structured light			
Measuring field [mm ²]	150 x 200	200 x 300	300 x 400	400 x 600	150 x 200	200 x 300	300 x 400	400 x 600
Measuring depth [mm]	90	150	180	240	90	150	180	240
Distance between points [mm]	0,040	0,060	0,080	0,130	0,033	0,050	0,067	0,100
Sampling [points/mm ²]	600	250	150	65	900	400	225	100
Accuracy [µm]	25	40	60	80	40	50	70	100

Additional accessories:



Easy & fast change of measurement volume with exchangeable lenses



Automated rotary stages:
 - max load 15kg, 200mm diameter
 - max load 60kg, 500mm diameter
 - max load 300kg, 500mm diameter



An automatic Shadeless Lighting System



Waterproof transportation case

Our Clients:

