3D SCANNERS
WITH FULL COLOR REPRODUCTION

MICRON3D *color*

Increasing demands of the archeological and conservation industry have inspired SMARTTECH3D engineers to invent a 3D scanner for a precise digitization of colorful objects. A scanner that can be used not only in a lab, but also on site.

Thanks to the high resolution and precision of 3D scanners produced by SMARTTECH user can collect information about complex structures that were difficult to scan until now, like ceramic ornaments, clothes, or oil paintings. Moreover, the sensitive detector allows for scanning of shiny or dark objects. Integration with shadeless lighting system provides the possibility to obtain actual color information in high resolution. All of these features make it possible to use the scanner for animation, computer games and 3D printing.

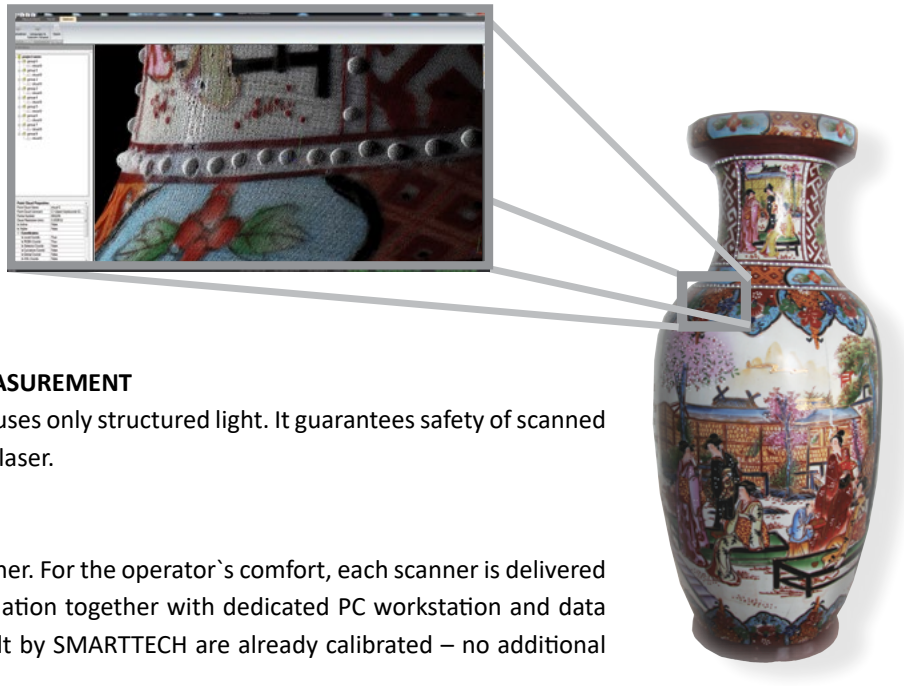
MICRON3D color set includes: a stable tripod with pan/tilt head, positioning lasers, and a transport case. What is more, the temperature-resistant casing made of carbon fibre and replaceable dustproof filters protect the scanner from any damage.

A mobile working station delivered with the scanner is equipped with special SMARTTECH3Dmeasure software. The function of measurement on a rotary table or with markers guarantees the full automation of measurement process regardless of the object`s size. The automatic data processing module guarantees the high quality image.

MICRON3D
color

Thanks to the “plug and scan” function, the scanner does not require calibration and is ready to use right after plugging it in. Despite the hi-tech measuring system, it can be operated by a user without a technical knowledge.

MICRON3D color is currently the only scanner on the market with such a great scanning quality and the option to capture color information.



GUARANTEE OF NON-INVASIVE MEASUREMENT

A technology applied in 3D scanners uses only structured light. It guarantees safety of scanned objects, as the system does not use any laser.

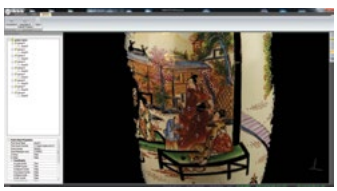
COMFORT AND EASY OPERATION

MICRON3D color is a mobile 3D scanner. For the operator`s comfort, each scanner is delivered and installed in the final place of destination together with dedicated PC workstation and data processing application. 3D scanners built by SMARTTECH are already calibrated – no additional action is required from the user.

A SPECIALISATION FOR MUSEUMS` REQUIREMENTS

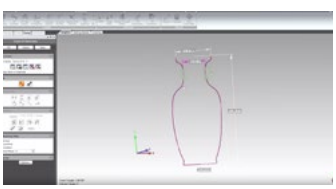
Over 20 years long experience in production of 3D scanners and cooperation with museums helped us to implement additional improvements in the equipment specialized to carry out national heritage objects measurements. We offer CNC – controlled rotary tables for measurement automation, and fully compatible, professional shadeless lighting system that is triggered by the scanner and allows for a uniform mapping of the whole object`s texture and color. The integrated shadeless lighting system in MICRON3D color scanner is a unique solution on the market. We provide professional repair service, technical assistance and complete trainings on scanning and data processing.

3D scanning process using the shadowless system



The result in the form of point clouds (x, y, z, RGB)

Made automatically mesh of triangles - .stl



Virtual cross-sections and dimensioning

MICRON3D color

REFERENCES

The MICRON3D color systems have been implemented in many Polish and foreign culture institutions and museums. Wherever they were implemented, they needed to fulfill the most restrictive safety standards, and generate data of the highest quality and precision. Thanks to our experience in the industry and professional attitude, we gained the trust of institutions, such as The National Maritime Museum in Gdańsk, Museum of Toruń, Museum of the Polish Country Origins in Gniezno, Museum of Gas Industry in Paczków, Centre of Contemporary Art in Warsaw, Centre of Polish Sculpture in Orońsko, Museum of Coal Mining in Zabrze, and many others.

ARCHIVING

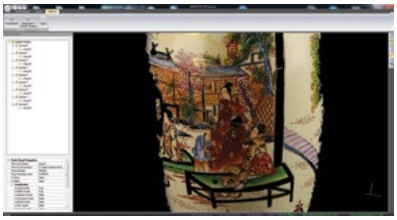
The technology used in MICRON3D color allows for simultaneous measurement of the object`s surface into the cloud of points with XYZ spatial coordinates and RGB color value assigned. This way each measurement is a best quality colored cloud of points that precisely reflects the characteristics of the scanned object`s surface. The collected data is saved into universal formats possible to load in all professional applications for editing measured data.

VIRTUAL RESEARCH

The measurements of 3D MICRON3D color scanner generate a dense cloud of points that represent the object`s surface and its structure. The cloud of points can be than transformed into a triangle mesh, which creates a continuous surface, almost identical to the object. This surface can be used for calculating the surface area, cross-sections, dimensioning, surfaces comparing, evaluating changes in time etc.

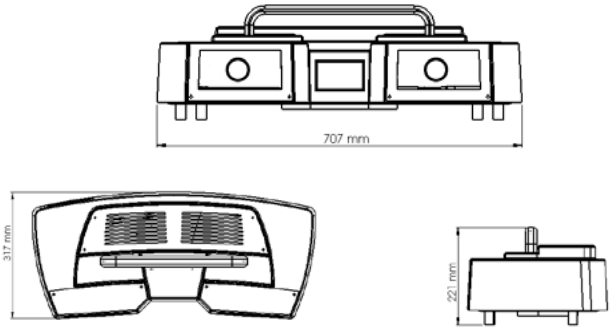
VISUALISATION

Generating of a triangle mesh along with the texture color information, which is saved in each point (texture measurement) allows for creating realistic 3D models. 3D models generated this way can be archived for the purpose of visualization. Visualizations prepared correctly can be used for developing virtual museums available online, or for exceptional quality presentations.



Perfect color reproduction thanks to the use of RGB color space

Technical data:



Technical specification

Resolution	5 Mpix				10 Mpix			
Scanning technology	White LED structured light				White LED structured light			
Measuring field [mm2]	150 x 200	200 x 300	300 x 400	400 x 600	150 x 200	200 x 300	300 x 400	400 x 600
Distance between points [mm]	0,078	0,117	0,156	0,234	0,052	0,078	0,104	0,156
Sampling [points/mm2]	164	73	41	18	369	164	92	41
Accuracy [µm]	25	40	60	80	25	40	60	80

Resolution	18 Mpix				24 Mpix			
Scanning technology	White LED structured light				White LED structured light			
Measuring field [mm2]	150 x 200	200 x 300	300 x 400	400 x 600	150 x 200	200 x 300	300 x 400	400 x 600
Distance between points [mm]	0,040	0,060	0,080	0,130	0,033	0,050	0,067	0,100
Sampling [points/mm2]	600	250	150	65	900	400	225	100
Accuracy [µm]	25	40	60	80	40	50	70	100

Optional accesories:

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

Automatic Shadeless Lighting System

Waterproof transportation case

Our Clients:

Military Police

國立臺灣史前文化博物館 NATIONAL MUSEUM OF PREHISTORY

BOEING

Central Office of Measures

NASA

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