

zSnapper *portable*

3D scanner



The small and lightweight zSnapper *portable* is a 3D scanner designed to scan objects fast and precisely. The zSnapper products reflect the company's long-term experience in full-field optical metrology. In particular, ViALUX' well proven concept of pixel-by-pixel fringe phase measurement is combined with the advantages of DLP® micro mirror

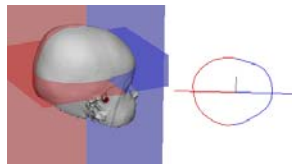
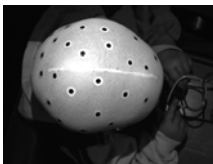
technology and high-power monochrome LED light sources. Unique hardware design and sophisticated software algorithms yield outstanding 3D scanner performance. The zSnapper 3D scanners are laser-free and eye-safe. Due to full-field operation, the 3D object shape is captured in one shot which gives intrinsic reliability and accuracy compared to any line scan devices. zSnapper *portable* is a versatile solution for a variety of applications. The device is not only suited for point-and-click 3D snapshots from one single viewing direction but multiple views of the same object can be merged automatically. Advanced technology guarantees that all snapshots taken fit together instantly and a real-time display of the merged 3D model can be observed during recording.

Hand-held scanner operation is typical for medical scanning applications. The operator takes the lightweight camera, aims at the object and pushes the button – each 3D snapshot is instantly displayed on the connected laptop PC. Automatic generation of 360° complete shape is implemented in different ways. Using pre-defined reference targets around the object is the most comfortable option which can be applied frequently. The scanner software calculates the position of the scan unit for each snapshot and generates the global 3D model in real-time. Random dots may also serve as targets; 3D snapshots are taken from all the different views needed and afterwards, the scanner software merges the partial measurements automatically. Finally, merging without any targets is realized by stitching the partial scans based upon best fit of shape as supported in the post-processing software. As a supplement to standard ASCII data output, ViALUX has implemented the specific AOP format of cylindrical coordinates for the use in orthotics and prosthetics.

Merging with reference targets

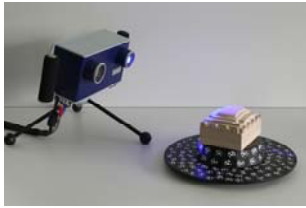


Merging with random targets



Merging without targets



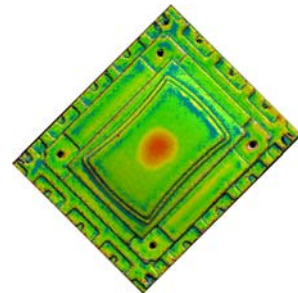
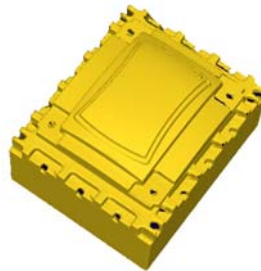
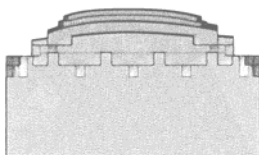


Highest scanning precision is achieved by combining the zScanner portable with a hand-operated turntable with pre-defined reference targets. All partial scans from various perspective views are merged instantly and the result is shown in real-time. This approach fits to customer needs in reverse engineering as well as in industrial shape inspection. ViALUX offers complete packages for digitizing or inspection including post-processing software with point cloud transformation to common CAD data formats (STL, IGES).

3D digitizing



3D inspection



Specifications

zScanner portable

Field of view	350 mm
Recording time	22 ms hand-held, 200 ms on tripod

Scan results

Point cloud	300 000 independent (x,y,z) coordinates per view on tripod, 80 000 hand-held
Precision	20-50 µm depending upon surface properties
Accuracy	40 µm on tripod, 300 µm hand-held
Data output	ASCII (i,j, x,y,z, gray), AOP and other CAD formats with post-processing option

Interface

Computer	Laptop PC, MS Windows® OS
Power	17W@12-30V

General

Dimensions	230 x 130 x 115 [mm]
Weight	2300 g
Case	All-in-one, flight cabin dimensions
Operating temperature	10°C to 40°C
Storage temperature	-10°C to 50°C

