

ATOS Compact Scan

Mobile 3D Scanner for a Wide Range of Applications



Optical 3D Measuring Technology

In Industrial Quality Control

Optical 3D coordinate measuring machines are replacing tactile measuring systems and gages in many areas of industry. They capture more detailed and easier to interpret quality information about an object with significantly shorter measuring times.

While mechanical measuring systems capture data in a point-based or linear manner, optical measuring systems provide full-field data about deviations between the actual 3D coordinates and the CAD data. As this measuring data contains all the object information, in addition to the surface deviations from the CAD, the software also automatically derives detailed information such as GD&T, trimming or hole positions.

The accuracy of optical measuring machines is not due to expensive and high-maintenance precision mechanics, but is rather based on state-of-the-art optoelectronics, precise image processing and mathematical algorithms. A few precision standards and calibration that can be performed by the customer ensure the accuracy of the machine. This also means no loss of accuracy due to wear under harsh conditions. As with the tactile machines, measuring uncertainty is certified with the help of ball bars or step gages.

Over 17,000 GOM measuring systems worldwide ensure the dimensional quality of automotive, sheet-metal, cast and injection molded products as well as turbine blades and wheels. In most cases, the detailed analyses are not used for a simple "OK"/"not OK" evaluation, but form the basis for the optimization of production and machine parameters as part of a value-added measuring procedure.

ATOS Compact Scan

The Compact Class

With the ATOS Compact Scan, GOM presents a portable 3D scanner for full-field measurement and inspection. This lightweight and compact overall solution opens up complete new application areas and offers the user various possibilities for 3D digitizing and analyses of parts, tools and systems. Even in cramped spaces or interiors, the compact solution of the ATOS series allows fast and precise measuring of surface geometries.

In addition to innovative hardware, the complete package includes integrated, high-performance software for all scan and inspection tasks. Furthermore, users benefit from practice-oriented hardware and software training as well as unrestricted access to the reliable and worldwide support network.

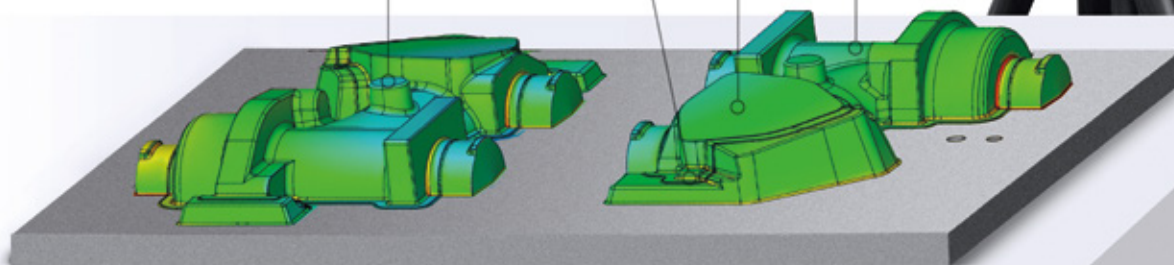
The ATOS Compact Scan comes with the proven technologies of the ATOS series. Thanks to a stereo camera setup, the system is self-monitoring and generates accurate and reliable measuring data. Furthermore, Blue Light Technology allows measurements to be made independent of ambient light conditions.

The ATOS Compact Scan offers:

- The proven high-end technology of GOM
- A portable system of low weight
- Optical and tactile measurement in one system
- Easy handling independent of the environment
- High-resolution measurement for small and large components
- Complex measurement and inspection tasks

Pattern Displacement				
	Nominal	Actual	Dev.	Check
X'	+0.00	-0.08	-0.08	
Y'	+0.00	-0.01	-0.01	
Z'	+0.00	+0.13	+0.13	

+0.28 +0.03 -0.13





Variable Use on Site

Companies must inspect tools, systems and components even during ongoing production, so as to introduce corrections as quickly as possible. Therefore, with the ATOS Compact Scan, GOM provides a portable measuring system, which can be used immediately during the manufacturing process.

ATOS sensors have proven in practice to be successful due to their flexibility and precision. Instead of removing the component from the running process and transporting it to the measuring room, the compact solution of the ATOS series is used directly on the production line or on the measuring object. This way, errors which would otherwise only show up in the final product can be identified directly at the site where they occur. This also avoids a lengthy search for the source of the error.

The portable scan kit widens the flexible possibilities of the ATOS Compact Scan. The complete system including sensor head, stand, calibration body, cable and rotation table fits into one standard suitcase.

- System, stand, measuring volume and manual rotation table in one suitcase
- Complete system in travel size
- Portable, high-performance computer
- Industrial, portable and easy to transport

ATOS Technology

The ATOS sensor technology has been continuously developed and refined by GOM since its introduction in 1995. Due to their proven measuring technology, the ATOS systems from GOM have established themselves as the preferred measuring system in virtually all industries. In addition to the innovative hardware, all ATOS systems include integrated, high-performance software for all scan and inspection tasks.

Blue Light Technology – The GOM projection technology works with narrow-band blue light, which means that interfering ambient light during image acquisition can be filtered out. The light sources are so powerful that short measuring times can be achieved even on uncooperative surfaces.

Live tracking – The online measurement is used for the selective alignment and positioning of components to the CAD. For example, components can be aligned in their nominal position in such a way that online positioning is possible within the assembly.

GOM Adapter – The GOM adapters provide expanded possibilities for live measurement such as component alignment or the measurement of regular geometries and edges.

Self-monitoring system – The ATOS Compact Scan is a self-monitoring system. The sensor recognizes changing ambient conditions during operation and is able to compensate these changes.

Photogrammetry – For high global accuracy and process reliability, regardless of the object size and complexity, the ATOS Compact Scan can be extended with photogrammetry.

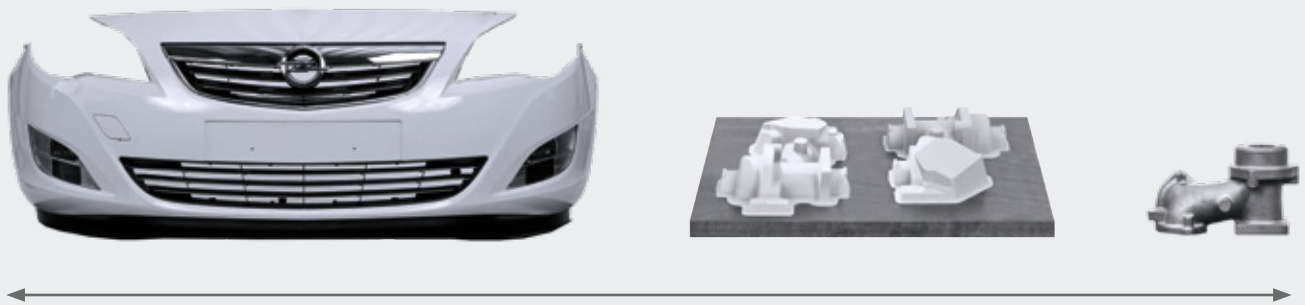


Mobile 3D Scanner

For Tools – Systems – Components

Scalable Measuring Areas

In contrast to other measuring methods, the technology of the ATOS Compact Scan can be optimally used for all measuring tasks and for all object sizes. Whether a high level of detail resolution, highest accuracy or fast scanning of large measuring areas: The scalable measuring area of the 3D scanner allows perfect adjustment to each measuring task. With only one sensor head, each required precision, detail resolution and velocity is possible.



For measuring areas from 40 mm² to 1,200 mm², the ATOS Compact Scan digitizes all component and object sizes with highest accuracy.

To capture also large objects of several meters in optimal workflows, the ATOS Compact Scan can be easily combined with digital photogrammetry of GOM's optical 3D coordinate measuring machine TRITOP.

- Adaptable accuracy, resolution and speed
- Complete component analysis
- Digitizing small to large parts with one sensor head
- Digitizing very large measuring objects of several meters

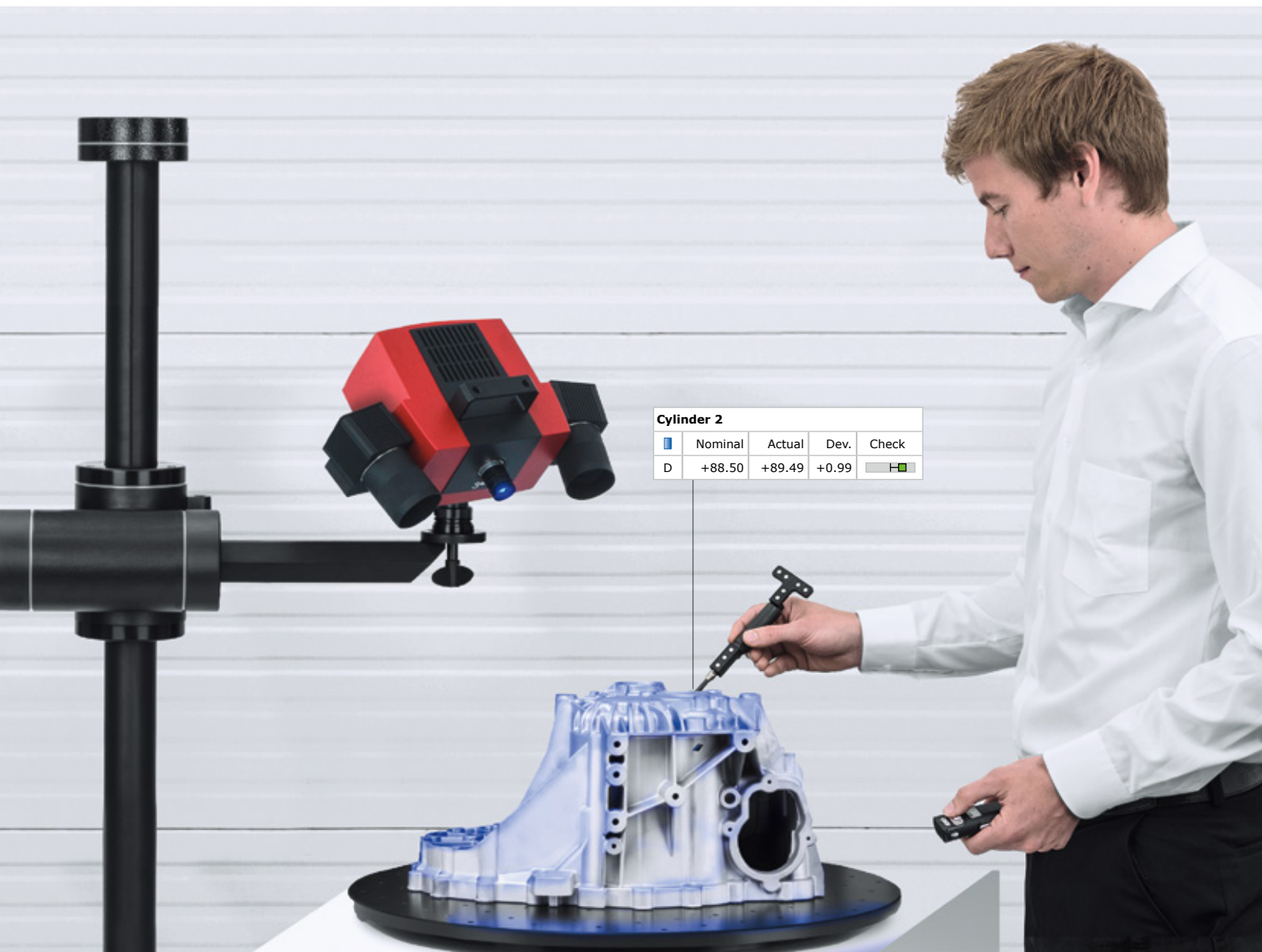
Scan and Probe

When digitizing deep pockets, bore holes or areas that cannot be accessed optically, all conventional devices reach their limits. The ATOS Compact Scan combines high-resolution scanning with the hand-operated, wireless measurement via optically tracked touch probe. Using the ATOS Compact Scan, practically all components can be digitized and analyzed within the shortest of times.

GOM Touch Probe – The GOM Touch Probe combines full-field ATOS measurements with tactile 3D measurements of individual measuring points. That enables the selective measurement of areas that are difficult to access optically, the measurement of regular geometries and their direct comparison with CAD data.

Industrial applications require process-reliable measuring data. The stereo camera systems of GOM are able to provide high-quality and precise measuring data by constantly monitoring the sensor and the environment as well as by direct feedback from the operator.

- Quick change between scanning and probing
- Measurement of optically difficult-to-access areas, bore holes, deep pockets ...
- Fast measurement of single points
- Online alignments
- Adjustment processes for equipment





Camera frame 300
 MV600: $600 \times 500 \text{ mm}^2$
 MV350: $350 \times 250 \text{ mm}^2$
 MV170: $170 \times 130 \text{ mm}^2$



Camera frame 500
 MV1200: $1200 \times 1000 \text{ mm}^2$
 MV700: $700 \times 500 \text{ mm}^2$



Small objects
 MV170: $170 \times 130 \text{ mm}^2$
 MV80: $80 \times 60 \text{ mm}^2$
 MV45: $45 \times 35 \text{ mm}^2$

ATOS Compact Scan

Technical Data

Due to its compact design, its low weight and its immunity against ambient light, the ATOS Compact Scan offers various measurement applications. Because of the scalable measuring areas, it is very easy to handle the ATOS Compact Scan when measuring small components up to large systems and tools.

	8M	12M
Measuring Points per Scan	8 million	12 million
Measuring Area [mm ²]	45–1,200	
Sensor Dimensions [mm]	360×150×240	
Cable Length [m]	up to 10	
Part Positioning	manual or automatic rotation table	
Computer	laptop or desktop system	
Software	data capture, processing and complete inspection	
Temperature Range	+5 °C to +40 °C, non-condensing	
Power Supply	90–230 V AC	

High-Performance Software

for Measurement and Inspection

ATOS Software

The ATOS software guides the user through the complete scanning procedure and provides support for setting up new measuring tasks using guided project creation.

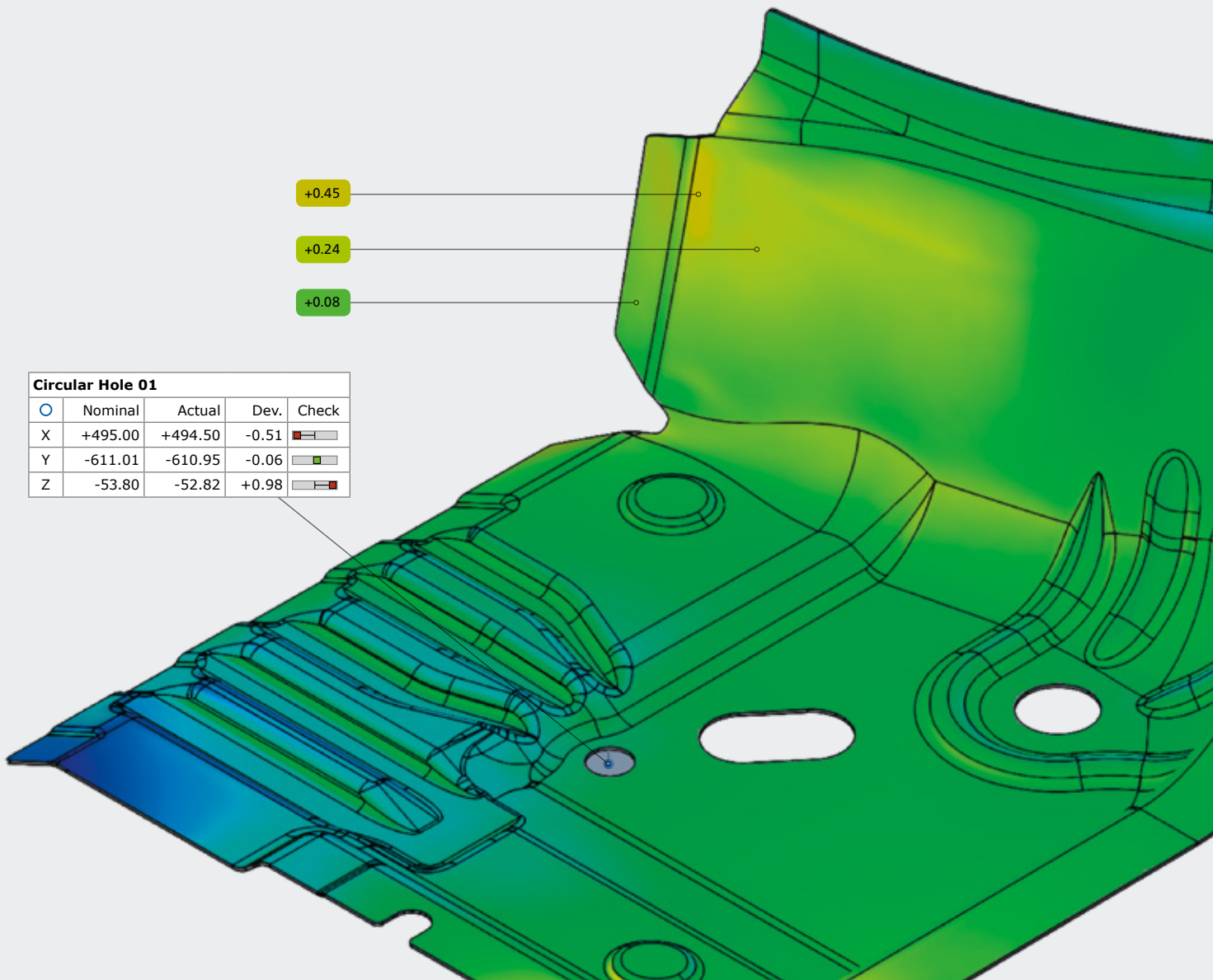
The ATOS software is used to run the sensor head, to process the 3D point cloud and to edit and post-process the data. The simple graphical user interface helps to support today's demanding tasks in quality control, manufacturing processes and reverse engineering.

GOM Inspect

The inspection software for 3D measuring data allows a shape and dimension analysis, 3D inspection and mesh editing of 3D point clouds and CAD data. 3D measuring data from fringe projection scanners, laser scanners, coordinate measuring machines (CMM) and other measuring machines can be checked.

Using the free 3D viewer, data sets and measuring reports can be easily shared with project participants, customers or suppliers.

Free version under www.gom.com/inspect





GOM

Precise Industrial 3D Metrology

GOM develops, produces and distributes software, machines and systems for industrial and automated 3D coordinate measuring technology, 3D computed tomography and 3D testing based on innovative technologies. By continuously developing hardware and software, GOM sets new standards in industrial metrology.

Today, more than 17,000 system installations improve product quality and accelerate product development and manufacturing processes for international companies in the automotive, aerospace and consumer goods industries, their suppliers as well as many research institutes and universities.

Worldwide Competence

The worldwide GOM Metrology Network comprises more than 60 sites on five continents. The research and development, production, communication and administration departments are located at the headquarters in Braunschweig. In the research and development departments, engineers, mathematicians and scientists work on the measuring technology of the present and the future.

The certified partners of the network represent GOM worldwide. With more than 1,200 metrology experts, the GOM Metrology Network provides profound advice as well as professional support and service to operators

on site in their local languages. At three GOM hubs in Europe, Asia and America, GOM service experts give advice to the partner network and global customers.



Holistic Technology Partner

Numerous services and training courses support the users with their daily work when using 3D measurement technology. Training courses and webinars deepen the knowledge about the software and show further application fields of the measuring systems.

The online portal provides instructions, tutorials and frequently asked questions and answers for the user. Furthermore, there is an application forum for exchanging ideas and supporting each other.

At conferences and application-based workshops, GOM directly shares knowledge on processes and measurement technology. The new GOM Care offer combines support and service for 3D measuring systems from GOM on a contractual basis.



GOM Care

With GOM Care, GOM offers fast and reliable customer support and services when necessary. The GOM Care support and services is based on three pillars: Remote Assistance, Services and Contract Plans.



GOM Training

The GOM training concept is based on practice-oriented training courses for different levels: basic and advanced training as well as expert courses. The modules can be combined and are based on each other.

