

## **ZEISS ScanCobot**

Flexible. Efficient. Automated.



Seeing beyond

ZEISS ScanCobot

# Flexible. Efficient. Automated.

ZEISS ScanCobot is a mobile measuring station with a collaborative robot, a motorized rotation table and powerful software. Combined with the compact, high-precision ATOS sensor, the system is ideal for automated 3D measurements and, thanks to its small size, saves plenty on space. ZEISS ScanCobot can be moved directly to where the next measurement is needed.

The optical 3D sensor rapidly captures detailed information on the quality of small and medium-sized parts, which are placed on the motorized rotation table. To inspect the part completely, the ATOS sensor faces it from different directions. Measurement planning takes place fully automated in the virtual measuring room (VMR), a module of the inspection software ZEISS INSPECT.



## The advantages of the mobile measuring station at a glance

### Collaborative robot

Automated measurements  
Reduced user interaction  
Increased repeatability

### Mobile with low space requirement

Easy and fast transfer to the next place of use  
Small footprint  
Reduced weight

### ATOS Performance

High-speed fringe projection  
Fast data processing and high data throughput  
Short exposure times, even with shiny and dark surfaces

### Motorized rotation table

For small and medium-sized parts up to max. 50 kg  
Max. part size 500 mm  
Interaction with collaborative robot

### User-friendly inspection software

Complete measurement process in the virtual measuring room (VMR)  
Automated measurement and inspection processes  
Automatic creation of scan positions through Smart Teach





## **ZEISS ScanCobot**

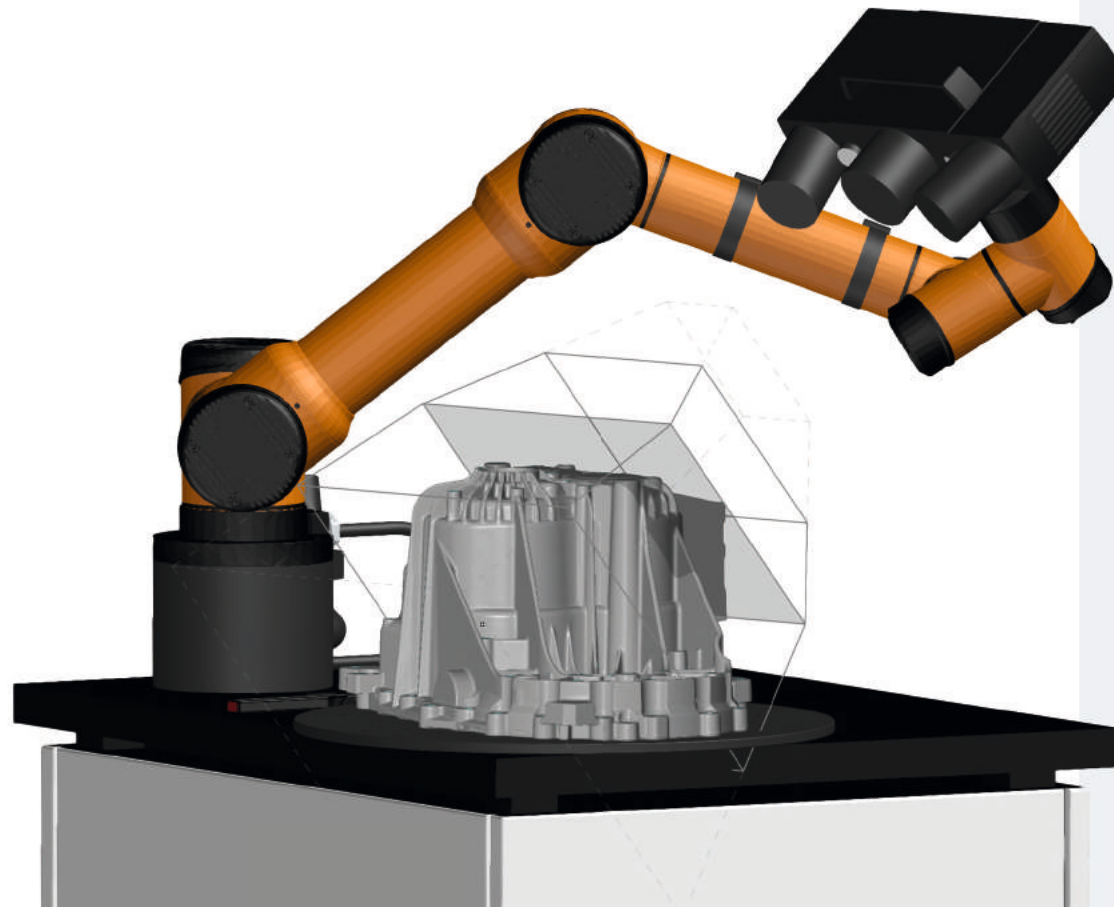
speeds up product  
development processes

ZEISS ScanCobot makes prototyping quick and easy. It facilitates toolmaking and testing and speeds up preproduction. This, in turn, optimizes the quality control and assurance of the final product. Small and medium-sized parts can be measured efficiently to swiftly identify, analyze and correct quality issues.

## User-friendly inspection software and easy robot programming in the virtual measuring room (VMR)

As the central control and measurement planning software, the VMR reproduces the entire measuring procedure: measurement planning, digitizing and inspection. The CAD data set for the part being inspected is imported into the software ZEISS INSPECT together with the corresponding measurement plan. The software automatically computes the necessary sensor positions and robot paths.

If no CAD data is available, the software uses the part's geometry to generate evenly spaced measurement positions. This is followed by the measurement, inspection and analysis – fully automated. The user does not require any special robotics skills.



## Advantages for the entire workflow

### Process reliable and runtime-optimized

Smart Teach functionality in the virtual measuring room simplifies the process of robot programming. Measurement positions are updated automatically, if the CAD or individual elements change.

### Burn-in process

The created measuring program is integrated through an automated process. For this, the robot moves to the measurement positions and determines individual measurement parameters on the real part.

### Serial measurement

The finished measurement programs can be used for additional component testing. Changes to the CAD data sets and inspection plan can be updated with a click of the mouse thanks to the software's parameter-based design.

### Reporting with one click

Once inspection is complete, the results can be compiled into a custom report with photos, tables, diagrams, text and graphics.

ZEISS ScanCobot

# Created for a wide range of tasks

The ZEISS ScanCobot can be used in many industries for the efficient quality control of parts made of materials such as plastics, metal or cast iron.

## **Additive manufacturing**

Speed up product development and product launch with high-resolution polygon meshes (STL files) for 3D printing, milling, additive manufacturing and dimensional inspection

## **Casting and forging**

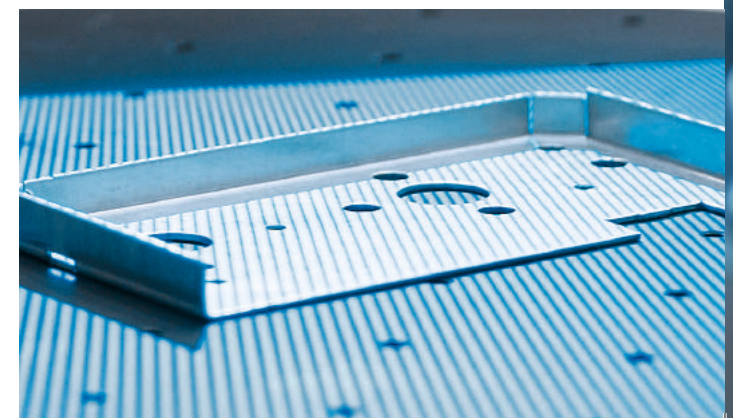
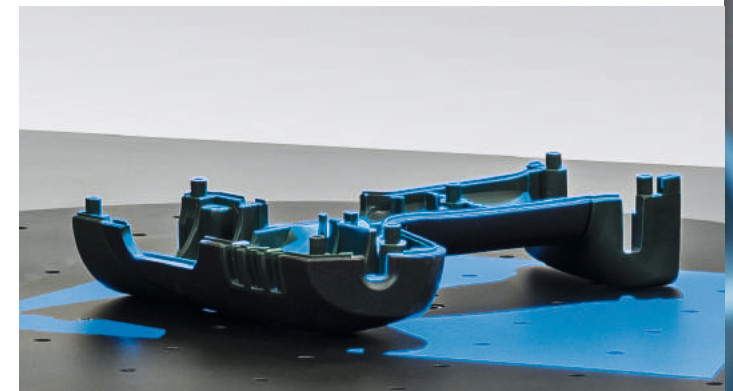
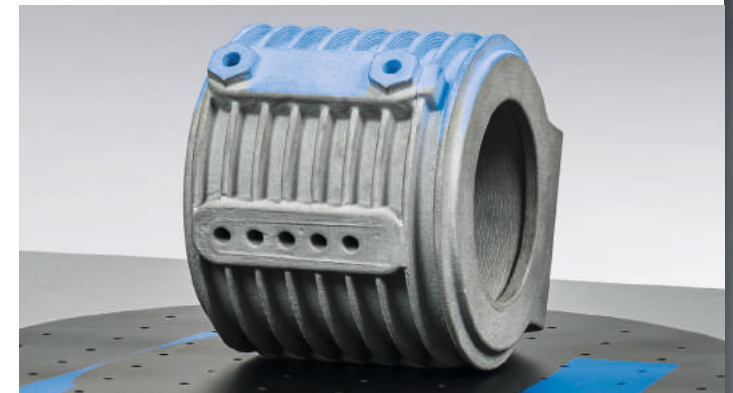
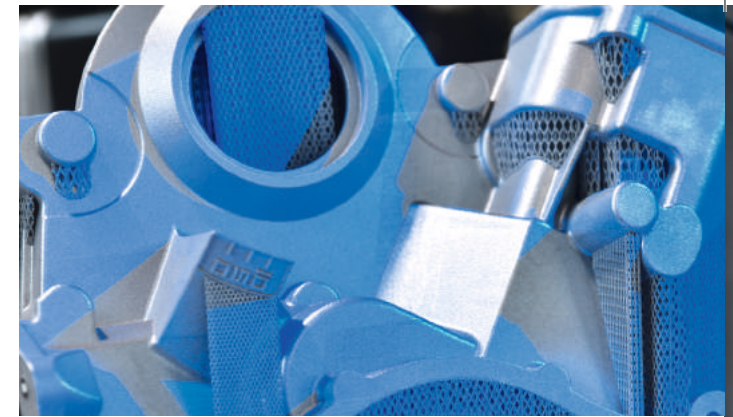
Shorter measurement and inspection times in sand casting, die casting and investment casting as well as in the forging industry

## **Injection molding**

Optimization in all phases of injection molding, blow molding and thermoforming

## **Metal forming**

Efficient quality control from toolmaking and testing, first article inspection and serial inspection to assembly





## Technical data

Set-up area [mm]	975 × 775
Working height [mm]	1,000
Power supply	Standard, 100 – 240 V (1-phase, 16 A)
Sensor compatibility	ATOS Q 8M, ATOS Q 12M
Safety housing dimensions* [mm]	1,650 × 1,650 × 2,340
Doorway dimensions [mm]	1,150
Safety housing material	Steel and transparent plastic panels

\* The system can be equipped with a standardized safety housing to comply with market-specific safety regulations. The generous doorway allows the ZEISS ScanCobot to be easily placed inside the safety housing.





# ATOS technology

The ATOS sensors are fully tailored to the metrological requirements of industrial users and provide absolute, accurate and traceable measuring data even under harsh conditions. The 3D scanners operate with structured blue light for contactless measurement.

## Triple Scan Principle

The Triple Scan Principle ensures precise and complete measuring data, even with complex geometries and uncooperative surfaces. The sensor's two high-resolution cameras and projection unit deliver different views of an object in each individual measurement. To accomplish this, the projection unit projects a fine fringe pattern onto the part surface, which is captured by two cameras operating on the stereo camera principle and used by the software to generate the digital geometric twin. The stereo camera setup gives the system a built-in, sensor-controlled feature to monitor process reliability during measurement.

The software gives the user continuous feedback on the calibration status, the transformation accuracy of the individual measurements, changes in the environment and part movements.

## High measuring speed

With each scan, ATOS sensors deliver full-field 3D coordinates within seconds. Each individual measurement consists of up to 12 million independent measuring points. This is made possible by the low noise level of the Blue Light Equalizer. This increases the brightness of the light source by a factor of 1.5, allowing for short exposure times.

# ATOS Q

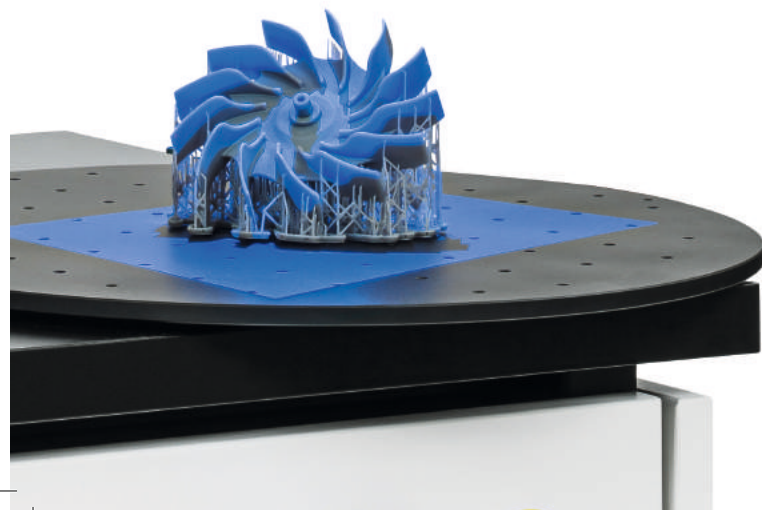
High-speed 3D scanner  
with superior data quality

ATOS Q generates a complete measurement dataset in a short time from detailed full-field 3D coordinates. Instead of point-based or linear data, the system delivers full-field data about deviations between the actual 3D coordinates and the CAD data.





ATOS Q is available in two different camera resolutions, 12 M and 8 M. The 3D scanners capture up to 2 × 12 million or 2 × 8 million coordinate points during scanning. The accuracy, resolution and the measuring area can be defined as desired. Five precision lenses are available, which cover measuring fields of different sizes: 100, 170, 270, 350, 500.



	<b>ATOS Q 8M</b>	<b>ATOS Q 12M</b>
Light source	LED	LED
Measuring points per scan	8 million	12 million
Measuring area [mm <sup>2</sup> ]	100 × 70 – 500 × 370	100 × 70 – 500 × 370
Point distance [mm]	0.04 – 0.15	0.03 – 0.12
Working distance [mm]	490	490
Weight	Approx. 4 kg	Approx. 4 kg
Dimensions	Approx. 340 mm × 240 mm × 83 mm	Approx. 340 mm × 240 mm × 83 mm
Cable length	10 m fiber optic cable	10 m fiber optic cable
Operating system	Windows 10	Windows 10
Measuring volumes	100, 170, 270, 350, 500	100, 170, 270, 350, 500

# All-in-one-Software

## **ZEISS INSPECT**

Scanning, inspection and reporting from a single source: The ZEISS ScanCobot is equipped with the ZEISS INSPECT software. CAD data can be imported, polygon meshes created from point clouds and 3D inspections can be performed.

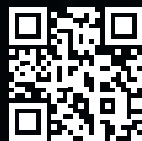
### **Tested inspection software**

The measuring accuracy of the software has been tested by NIST (National Institute of Standards and Technology) and PTB (National Metrology Institute of Germany). By comparing obtained results with reference results, the software has been put in the category of lowest measurement deviations (Class 1).

### **Free trial version**

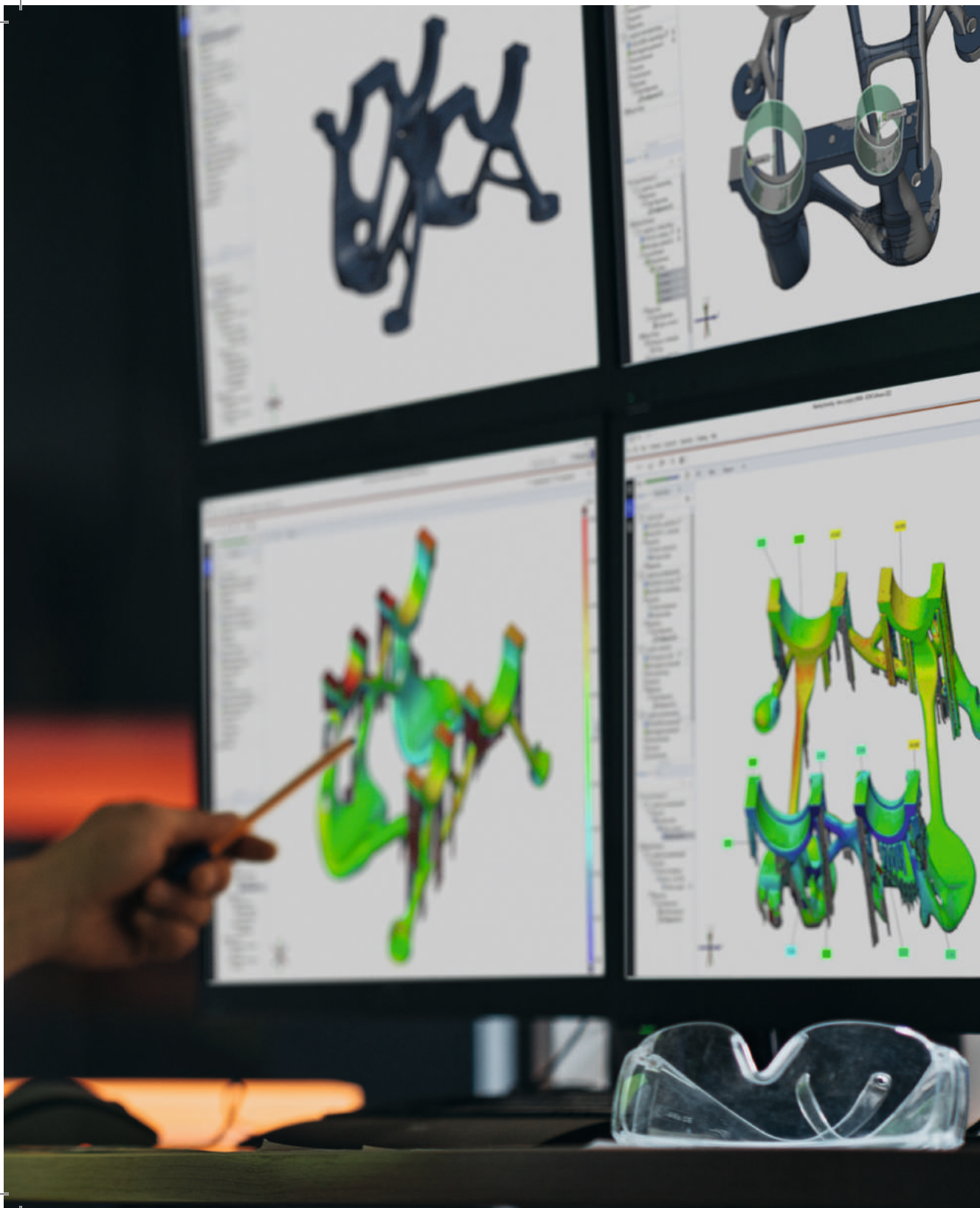
Get to know the numerous benefits of the software – free and without any contractual obligations for 14 days.

Start now: [zeiss.ly/foig](https://zeiss.ly/foig)



### **Parametric inspection**

The parameter-based design of the software allows every step of a process to be traced, repeated and edited. Trend analyses, statistical process control (SPC) and deformation analyses can be performed in one software. Even the full-field analysis of multiple identical parts in one project and statistical analytical values can be determined with ease.



### **Numerous CAD formats**

Time can be saved by importing native CAD formats such as CATIA, NX, SOLIDWORKS and Pro/E into the software.

### **Teaching by Doing**

Thanks to continuous buffering, the desired inspection steps can be transferred to subsequent parts without any programming effort.

### **Digital assembly**

Digital and virtual assembly allows for control of the alignment of parts to one other and the accuracy of fit, regardless of where the parts were manufactured.

### **Scripting**

A command recorder saves all executed operations as a Python script, which can then be repeatedly applied or varied for other measurements.

ZEISS INSPECT supports the measuring and inspection process with detailed analytical and reporting functions. The results are easily and clearly compiled.

# ZEISS Industrial Quality Solutions

ZEISS Industrial Quality Solutions is a leading manufacturer of multidimensional metrology solutions. These include coordinate measuring machines, optical and multi-sensor systems, microscopy systems for industrial quality assurance as well as metrology software for the automotive, aircraft, mechanical engineering, plastics and medical technology industries. Innovative technologies such as 3D X-ray metrology for quality assurance complete the portfolio.

In addition, ZEISS Industrial Quality Solutions offers a broad global spectrum of customer services with ZEISS Quality Excellence Centers close to its customers. The company is headquartered in Oberkochen. Production and development sites outside Germany are located in Minneapolis in the USA, Shanghai, China and Bangalore, India.

ZEISS Industrial Quality Solutions is part of the Industrial Quality & Research segment.



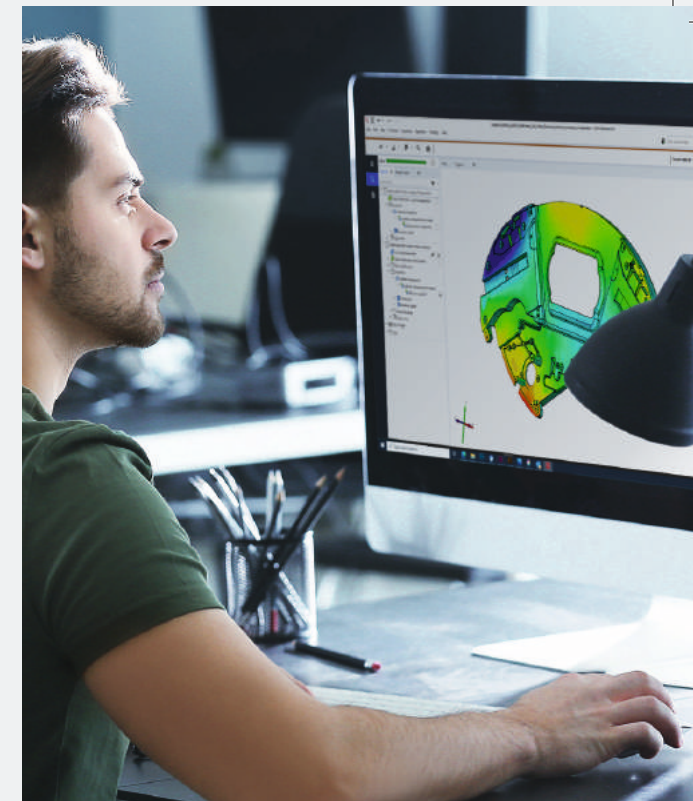
## Your holistic technology partner

Numerous services and training courses support you in your daily use of 3D measurement technology. Training courses and webinars help you to extend your knowledge about using the software and get to know more application fields for the measuring systems.

At conferences and application-based workshops, webinars and digital demos, ZEISS directly shares process and measurement technology know-how. In addition, support and services on a contractual basis are offered for all 3D measuring systems.

## Training

ZEISS training centers offer training and eLearning courses for all levels of expertise. The training courses follow an internationally standardized concept and are implemented by our certified partners in the corresponding national language. In addition to on-line training courses and scheduled courses in our training centers, customer-specific training courses on site are also available on request.



## Support and service

ZEISS provides support and services to assist you quickly and reliably if required. These are based on the following three pillars: Remote Assistance, Services and Contract Plans.



**Carl Zeiss GOM Metrology GmbH**

Schmitzstraße 2  
38122 Braunschweig  
Germany

Phone: +49 531 39029-0  
info.optical.metrology@zeiss.com  
www.zeiss.com/optical-metrology