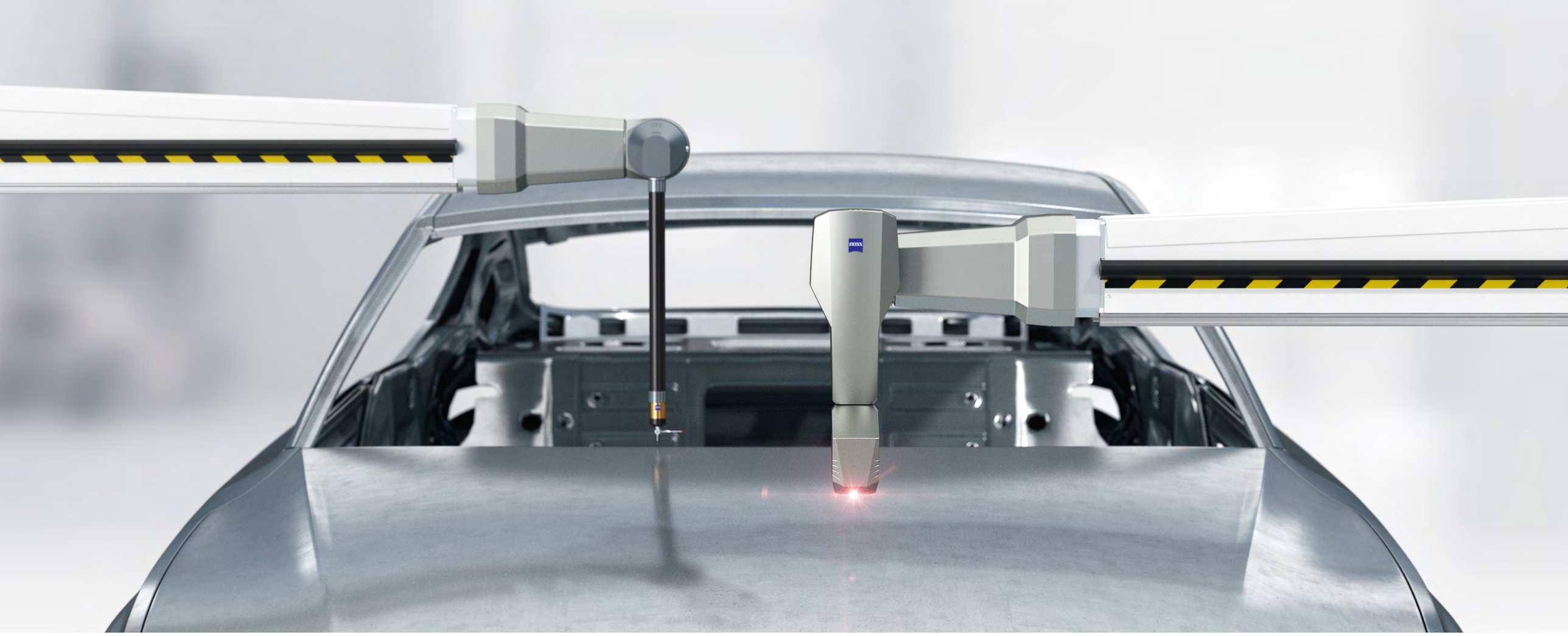


ZEISS CALENO Hambot

More than a robot. The Hambot.

Seeing beyond

Table of contents

ZEISS CALENO

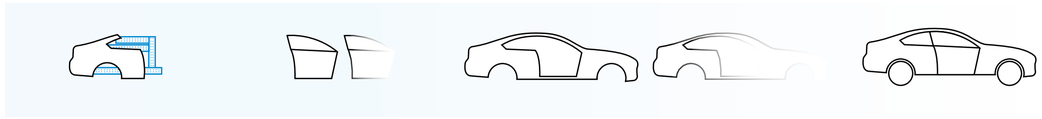
Hambot

When it comes to being able to perform as many body measurement tasks as possible on one system, there is a superior solution from ZEISS: the ZEISS CALENO Hambot. It is extremely versatile and offers top performance in all measuring disciplines.

The combination of the best optical and tactile sensor technology ensures maximum productivity and precision – not only in the measuring room, but also close to production.

And another important advantage: thanks to exemplary safety equipment the operator can work in and around the ZEISS CALENO Hambot.

Possible uses of the ZEISS CALENO Hambot in the car body construction process



Preparation and INITIAL production phase

Series production Attachment parts

Series production Body-in-white

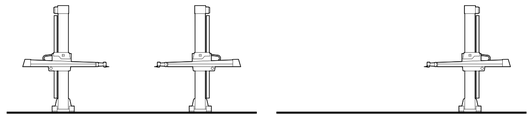
Analysis of the finished vehicle

Overview

Features & highlights

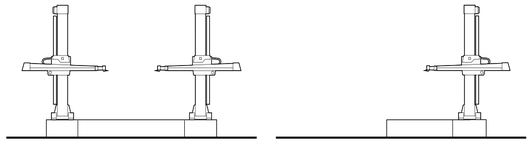
ZEISS CALENO flush-to-floor

Flush-to-floor installation
In the flush-to-floor design, ZEISS CALENO is optimally accessible and can be moved with floor-level conveyors. For all work on and with the measuring system, the floor-level variant offers the best possible ergonomics and productivity – ideal for high measuring volumes and short time frames. A dedicated foundation is required for installation.



ZEISS CALENO flush-to-floor as a duplex and a single-arm system

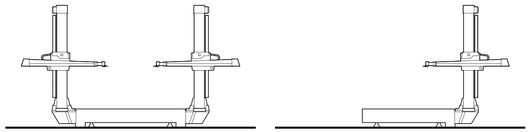
On-floor installation
To satisfy special requirements, the ZEISS CALENO flush-to-floor design is also suitable for on-floor installation.



ZEISS CALENO on-floor as a duplex and a single-arm system

ZEISS CALENO T

ZEISS CALENO T tabletop construction
The ZEISS CALENO T tabletop construction usually does not require any work on the foundation and is less expensive than the flush-to-floor variant – with the same outstanding precision. The measuring table and the measuring columns form an intrinsically rigid unit in the table construction. This makes the measuring system more robust with regard to its installation site. That is why ZEISS CALENO T is ideal as a retrofit installation for shop-floor use. With optionally available air damping, the system is also simple to decouple from the foundation.

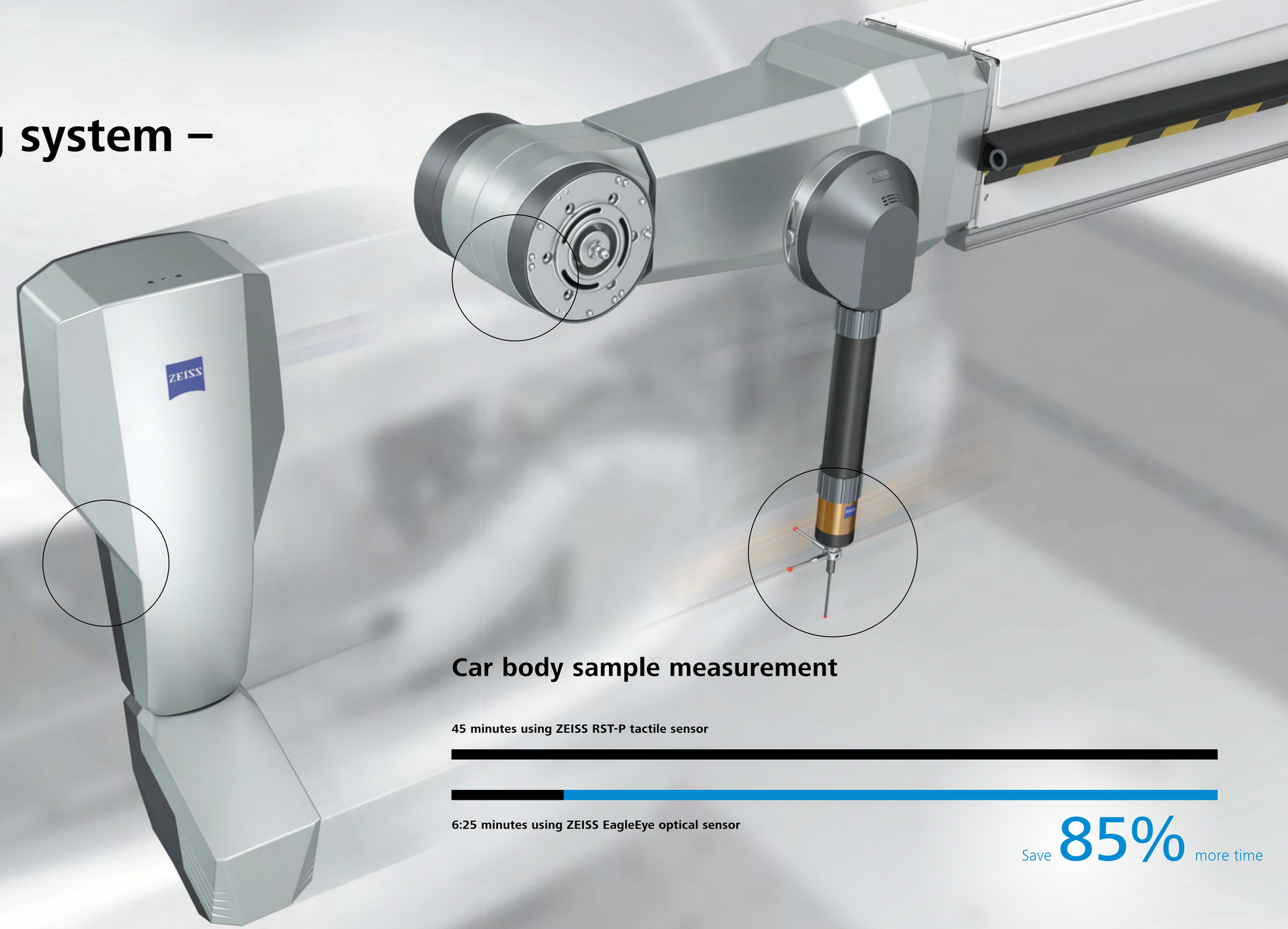


ZEISS CALENO T as a duplex and a single-arm system

One measuring system – all tasks

Measure geometrical features in record time with ZEISS EagleEye, then digitize large free-form surfaces using the same sensor. Use the automatically exchangeable tactile sensor to take optimally accurate reference measurements, e.g. for correlation measurements. Capture difficult-to-access features by tactile means using ZEISS ThermoFit extensions of up to 800 mm. All on the same system. All without wasting time.

Watch video



Car body sample measurement

45 minutes using ZEISS RST-P tactile sensor

6:25 minutes using ZEISS EagleEye optical sensor

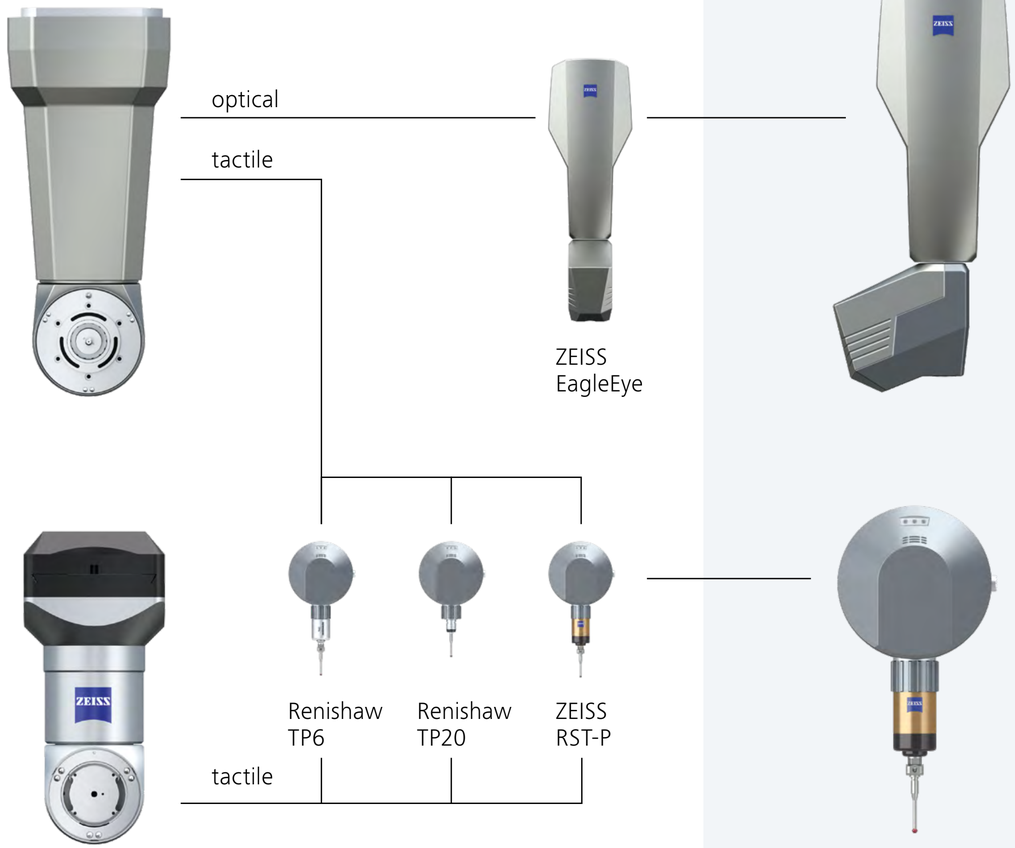
Save 85% more time

ZEISS articulating probe holders

Fast and precise positioning

ZEISS DSC
Both optical and tactile sensors can be changed over automatically using the ZEISS DSC articulating probe holder. Its high dynamics and torque as well as its excellent precision are the basis for a wide range of measurement tasks. The sensor carrier has spring-mounted collision protection for the sensor as standard. Optional additional collision protection of the articulating probe holder is also available. The passive probe changer requires neither compressed air nor electricity.

ZEISS RDS-C6 CAA
Will the ZEISS CALENO Hambot be used in an area where only tactile measurements are taken? Are stylus extensions of up to 400 mm sufficient? If so, ZEISS offers a high-performance and cost-effective alternative to the ZEISS DSC: the RDS-C6 CAA articulating probe holder.



ZEISS sensors

The benchmark – optical and tactile

ZEISS EagleEye
Compared to measurements with a tactile sensor, the ZEISS EagleEye significantly shortens the measurement time. With ZEISS EagleEye, ZEISS LinLog image processing ensures that even difficult-to-capture shapes and surfaces are represented precisely. With just three settings – standard, bright, and dark – the exposure can be easily optimized to suit the material to be measured and the lighting conditions. And because the laser line in ZEISS EagleEye is generated using optical lenses, the measuring sensor manages without any moving parts at all.

ZEISS RST-P
ZEISS RST-P offers remarkable advantages over widespread standard measurement probes: more stable results quality, a service life up to five times longer, and greater safety reserves in the event of a collision. One of the reasons for this is its unique Piezo technology. Before the usual mechanical deflection of the stylus, a Piezo sensor has already captured the measurement impulse using minimum measurement force. Therefore, the scanning angle and scanning power have hardly any influence on accuracy, so ZEISS RST-P measures with equal accuracy under all scanning conditions.

Technical specifications

Top performance in any form

The CMM specifications only apply when using original ZEISS accessories. The specified parameters are observed in the application of the internal test instructions for acceptance testing and in the use of the released standards in accordance with the ISO 10360 series.

	ZEISS CALENO flush-to-floor			ZEISS CALENO T		
Many sizes for measuring volumes up to	**X (mm)**	**Y (mm)**	**Z (mm)**	**X (mm)**	**Y (mm)**	**Z (mm)**
Single	7000	1800	3000	7250	1800	2500
Duplex	7000	3086	3000	7000	2800	2500
	Other measuring ranges on request			Other measuring ranges on request		

Length measurement error (size 16/25, single arm)	**Temperature range**	**E in µm**	**Temperature range**	**E in µm**
Standard	16 – 24 °C	27 + L/80 ≤ 70	16 – 24 °C	27 + L/80 ≤ 70
High-accuracy option	18 – 22 °C	18 + L/125 ≤ 50	18 – 22 °C	18 + L/125 ≤ 50

Maximum speed and acceleration	**V in space**	**A in space**	**V in space**	**A in space**
Standard	260 mm/s	1000 mm/s^2	260 mm/s	1000 mm/s^2
Performance option with light barrier	866 mm/s	1500 mm/s^2	866 mm/s	1500 mm/s^2

Digital transformation made by ZEISS

ZEISS software

ZEISS supports you in the transition to increasingly digital, data-based, networked production: with software products that harmonize with your ZEISS measuring systems in a highly efficient way. With digital solutions that open up new areas of potential for advanced quality and productivity.

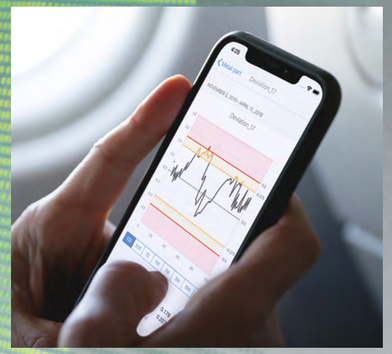
ZEISS CALIGO – Specialist for freeform surfaces
The modern software architecture enables efficient processing of large volumes of data such as optical scans of entire car bodies. The highly developed ZEISS feature extraction function enables reliable optical evaluation of the most difficult elements such as threaded bolts.

Users are supported in the digitization of complete components by functions such as curvature-dependent point cloud thinning. The extensive simulation enables multi-sensor measurements to be optimized without using real CMMs as well as the creation of test plans that are robust and measurement time-optimized.

Thanks to detailed simulation, collisions can be recognized and eliminated during offline programming. Direct interface from ZEISS CALIGO to ZEISS INSPECT for enhanced evaluation as flush& gap, design lines, digital assembly and photorealistic rendering.

Learn more

ZEISS PiWeb – Transform quality data into meaningful results
ZEISS PiWeb is a scalable IT solution for quality data management. ZEISS PiWeb reporting is contained in ZEISS CALIGO. The database-supported versions ZEISS PiWeb sbs and ZEISS PiWeb enterprise save quality data on a central server. The data can be accessed in real time from any location and displayed in the form of reports via a secure Internet connection. This makes quality data from a wide range of measuring machines from different manufacturers available on a global scale. And with the ZEISS PiWeb app, you also have remote access to your measurement data at all times.



Learn more

Learn more

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.

Industrial Microscopy

CMM

Optical 3D

X-Ray

ZEISS Software

Your holistic technology partner

Numerous services and training courses support you in your daily work with 3D measuring 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.

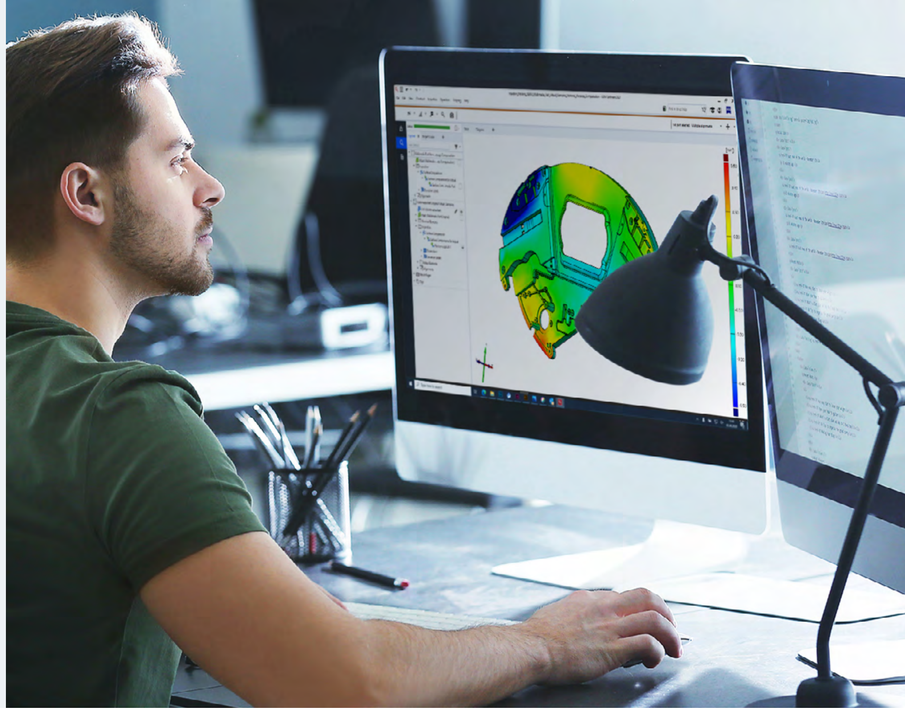
The ZEISS Quality Suite supports you with instructions, tutorials and frequently asked questions and answers. Moreover, the user forum offers a platform for mutual exchange and support.

At conferences and application-based workshops, webinars and digital demos, ZEISS directly shares process and measurement technology know-how. In addition, contractual support and services for all measuring solutions are available.

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 online training courses and scheduled courses in our training centers, customer-specific on-site training courses are also available on request.

Learn more



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.

Learn more

Want to learn more about ZEISS CALENO?

Contact us for a free demonstration –
on site or online.

Contact us

ZEISS Industrial Quality Solutions
Carl Zeiss IQS Deutschland GmbH
Carl-Zeiss-Straße 22
73447 Oberkochen
Germany

Sales
Phone: +49 7364 20 6337
E-Mail: sales.metrology.de@zeiss.com

Service
Phone: +49 7364 20 6337
E-Mail: info.metrology.de@zeiss.com

Carl Zeiss Industrial Quality Solutions, LLC
6250 Sycamore Lane North
Maple Grove, MN 55369
USA

Phone: +1 800 327-9735
Fax: +1 763 533-0219
Email: info.metrology.us@zeiss.com

www.zeiss.com/metrology

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