When the inside matters

ZEISS METROTOM 1

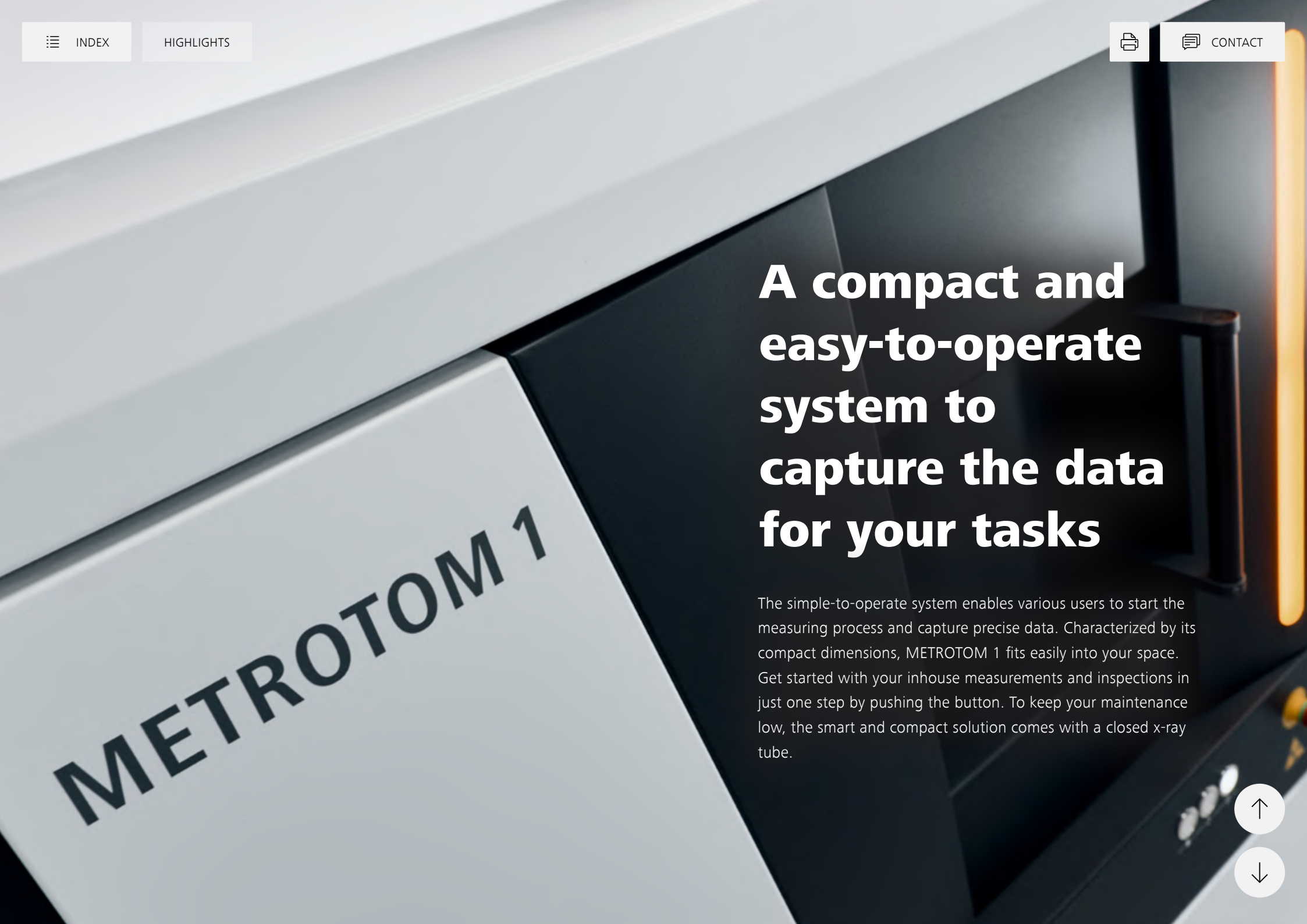
zeiss.com

Click to navigate


INDEX
CONTACT
Quality control from the outside in

One scan, deep insights Fast, intuitive and highly precise

ZEISS METROTOM 1 is your fast way forward: Capture precise 3D data without any part preparation. Powered with computed tomography technology, you can scan parts non-destructively and look inside. Measure, analyze and inspect hidden defects and inner structures. In combination with the software ZEISS INSPECT, it reaches a new dimension to simplify your quality control.

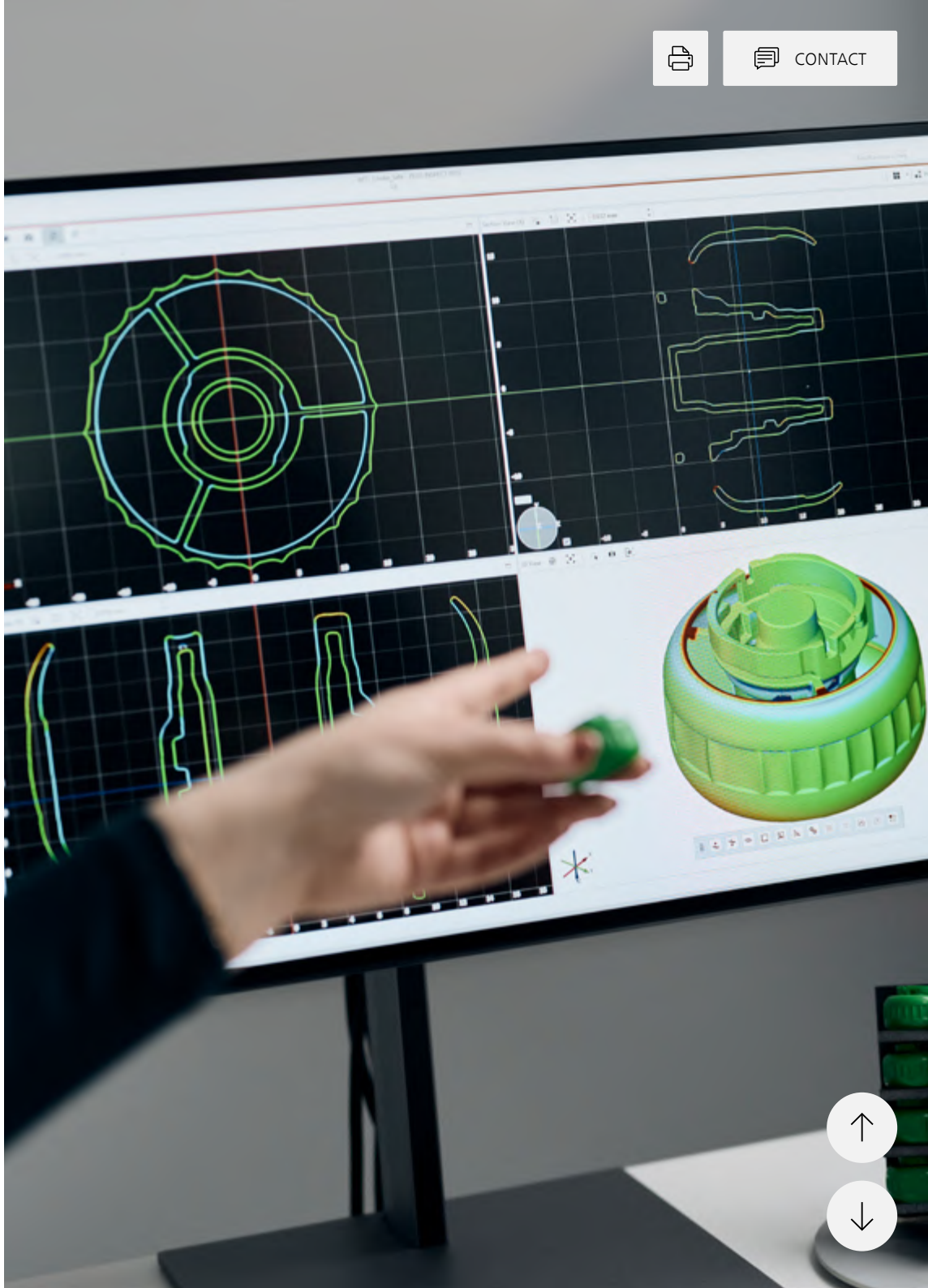


A compact and easy-to-operate system to capture the data for your tasks

The simple-to-operate system enables various users to start the measuring process and capture precise data. Characterized by its compact dimensions, METROTOM 1 fits easily into your space. Get started with your inhouse measurements and inspections in just one step by pushing the button. To keep your maintenance low, the smart and compact solution comes with a closed x-ray tube.

Capture 3D data without part preparation

With METROTOM 1 you can inspect internal structures and defects using non-destructive scanning. No part preparation is needed before starting the measurement process. While you scan the next part, you can inspect or reverse engineer the previous one.



Multiple part scanning

Measuring multiple parts at the same time is one of the most efficient features of METROTOM 1. The formula is simple: high quantities with optimum use of the measuring volume. The result: faster scanning time per part without compromising on quality. ZEISS INSPECT automatically separates and evaluates the individual parts so that results are quickly available as a report.

3D digitalization of plastic components

Check internal structures and defects

METROTOM 1 with ZEISS INSPECT guides you step-by-step through the measurement process. With volume visualization and inspection of your scan data, you can discover all dimensions of your parts, even the hidden ones. By scanning all internal and external structures, parts can be easily reversed.
Easy and efficient. With just one scan. METROTOM 1 supports you with:

- 3D scanning of small to medium components
- Accurate measurement
- Quality inspection and assurance
- Deep analysis of rejects
- Checking components against their CAD

A smart all-in-one concept

Voltage, power, exposure time and number of steps are some of the important measurement parameters for computed tomography (CT). Operated with ZEISS INSPECT, ZEISS METROTOM 1 comes with an automated parameter determination for these values. The software provides you with optimal starting values to reduce the complexity of setting up your scan. METROTOM 1 relies on simple operation, fast acquisition, and intuitive evaluation functions. An all-in-one concept you can rely on.

Active temperature balancing for precise results

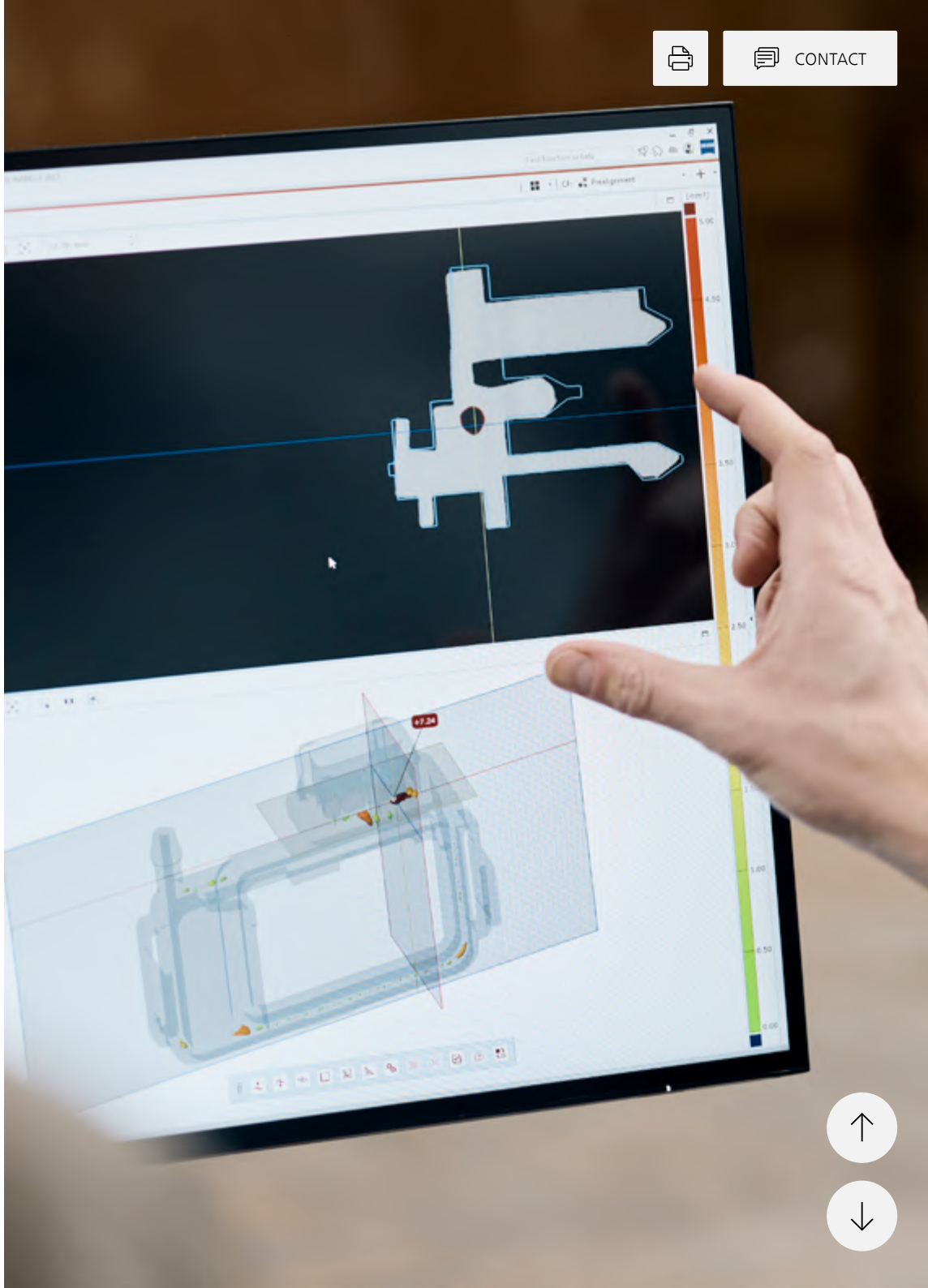
METROTOM 1 is developed for many conditions. In addition to its robust design, it is also protected against internal temperature fluctuations. The active cooling system keeps your system running: It ensures the exact same temperature inside and outside of the system to prevent any thermal expansion of your parts. METROTOM 1 is a stable, heavy-duty system filled with cutting-edge technology.

Digitally guided by ZEISS INSPECT for optimal results

METROTOM 1 operates with ZEISS INSPECT, the all-in-one, user-centered software solution and established standard in 3D metrology. Powerful functions like volume visualization and inspection, dimensional metrology, trend analyses and comparisons, defect detection and inspection make it the perfect tool to use the capabilities of the system.

Different applications have different requirements

Measure everything easily within a measuring volume of 165 x 140 mm. The measuring volume can be fine-tuned digitally. At the same time, you can adjust the resolution to speed up your process resulting in fast scanning times according to your needs.



Highly accurate measurement results

Every METOROTOM 1 is checked for accuracy – during production and additionally after the on-site installation. The accuracy check is done using a calibrated and DAkkS-certified acceptance artifact. The scanner can be recalibrated by you at any time using the calibration object on site.

Intuitive ease of use

Inside the ZEISS METROTOM 1

The compact system is packed with:

- **Calibration object** – For a recalibration of the system anytime – no on-site service required.
- **Active temperature control** – To make sure system and part are always at the same stable temperature.
- **Continuous scan mode** – A continuous rotation of the part will improve measurement times significantly.
- **Operation station** – The package contains a powerful PC for system operation, reconstruction and inspection.
- **ZEISS Inspect** – A continuous software from measurement to inspection reports.
- **2.5k detector developed by ZEISS** – ZEISS METROTOM 1 comes with a 2.5k x 2.5k detector.
- **160 kV X-ray source** – For measurements of plastic parts and light weight metals.
- **Temperature controlled cabinet** – Fully protected and secure air conditioning.
- **360 Degree Automatic Rotation Table** – 5kg part capacity

Limitless use cases

Whether medium-sized or small plastic parts – with METROTOM 1 there are no limits to your possibilities: connectors, plastic caps, wax cores from the aerospace industry, whatever you want. It is the ideal solution for companies that need to inspect small to medium-sized batches. Powerful and versatile.

A wide range of applications

Quality control and inspection

- Nominal-actual CAD-to-part comparison
- Dimensional measurements
- Section inspection at any depth of the part
- Analyse wall thickness distribution
- Functional dimensioning for first article

Tool and mold making

- Ensure correct first part by scanning multiple samples produced with different parameters
- Reducing the number of iterations in your process
- Monitor production process with fast inspection of multiple parts
- Actual capture following tool approval
- Warpage compensation of component

Product development and design

- Examine even high demanding products like transparent objects and soft polymers
- Functional and error analysis of assemblies
- Non-destructive material defect analysis e.g. blowholes, pores or cracks
- Reverse engineering of existing parts or part geometries
- Validate engineered designs

Technical data

METROTOM 1	
X-ray source	160 kV
X-ray detector (pixels)	2.5 k (2,500 x 2,500)
Measuring volume	165 x 140 mm
Metrology specification (MPE SD)	5 µm +L/100
Dimensions	1750 mm (W) x 1820 mm (H) x 870 mm (D)
Weight	2100 kg
Software	ZEISS INSPECT
Voxelsize	down to 32,6 µm

Carl Zeiss
GOM Metrology GmbH

Schmitzstraße 2
38122 Braunschweig
Germany
Phone: +49 531 390290
support@handsonmetrology.com

Check out the go-to for 3D scanning:
HandsOnMetrology.com