metrios
by VICIVISION

OPTICAL MEASURING MACHINES

VICI&C

60
million
in revenue

260
employees
worldwide

06
branches
worldwide

40
specialized
centers

10
patents
filed

100%
renewable
energy

38
average
age

2 partners
Pecchioli research
Gre snc

VICIVISION

SINCE 1977 SPECIALISTS IN INDUSTRIAL AUTOMATION

VICIVISION is a brand of VICI & C. S.p.A., a family-run industrial company with a strong international presence.

Founded with the aim of offering advanced technological solutions, the company began its operations by assembling electronic boards, then specialized, starting in the late 1980s, in the design and construction of automated lines for the automotive sector.

In the following years, the growing demand for optical measurement systems in the industrial field led to a new strategic development: **in 1999, VICIVISION was established**, a brand of optical measuring machines dedicated to the dimensional inspection of shafts and turned components in the industrial sector.

Expansion continued in 2015 with the creation of Metrios, a brand focused on optical measuring machines for quality control in the production processes of plastic components.

Over the years, the company has transformed industrial metrology into a fast, automated process that is directly accessible on the production floor. Today, VICIVISION and METRIOS by VICIVISION represent a global benchmark in optical measurement for turned and plastic components, integrating precision, speed, and intelligent automation.

PRECISION AND SPEED, WITHOUT COMPROMISE

VICIVISION

VICIVISION machines are designed for those who produce cylindrical and rotational components and require speed, precision

and continuous control.

FAST AND EASY

Measure turned parts in just a few seconds

with a single click.

RELIABLE
Goodbye human errors: results are always repeatable.

VERSATILE AND COMPLETE
All dimensional inspections in a single machine.

DIRECTLY ON THE PRODUCTION FLOOR
100% guaranteed quality without leaving the workshop.

REDUCED DOWNTIME, SCRAP, AND WASTE

With VICIVISION, measuring in the workshop becomes easy and reliable. Every machine delivers fast results with exceptional accuracy, integrating directly into the production cycle.

"VICIVISION represented a turning point for our entire company, and therefore for all our staff. Its versatility is such that it allows operators at Bavieri to independently check, at any moment during production, the performance of the machine. Measuring the part and its diameter guarantees tolerances below one hundredth of a millimeter. We can also continuously check roundness, cylindricity, and coaxiality of all turned components. Vici performs all these operations in just 34 seconds."
Bavieri Alfeo s.r.l. – Italy

"Today, five VICIVISION systems directly support our production. We operate various cold forming, threading, rolling, and machining machines, and we have reduced measurement times to just 30 to 50 seconds depending on the type of part. Thanks to the dimensional inspections carried out with VICIVISION, we guarantee complete traceability of the process, from the first to the last component."
Panelfisa - Toulouse, Spain

QUALITY CONTROL SIMPLIFIED

AUTOMATIC MEASUREMENT.
IMMEDIATE RESULTS.
ZERO ERRORS.
FORGET MANUAL INSTRUMENTS AND COMPLEX TRAINING.

metrios
by VICIVISION

METRIOS is designed for those who produce prismatic components, thin parts, micro-components, molded parts, surface components, and mixed batches with high turnover.

FAST & EASY
Capture even complex measurements in just a few seconds.

ROBUST & RELIABLE
Steel construction, specifically designed for use in any production environment.

MULTI-PART MEASUREMENT IN AN INSTANT
Measure dozens of components of different sizes simultaneously.

USER-FRIENDLY INTERFACE
Equipped with an intuitive touchscreen interface, Metrios is designed to be easy to use for operators of any skill level while delivering powerful measurement capabilities.

DIRECTLY ON THE SHOP FLOOR
Guarantee 100% quality control without leaving the production line.

"Now I measure seven parts simultaneously. I know that the quick response times have simplified the programming and rapid setup with which Metrios operates. It is very intuitive to use thanks to its profile viewer: just tap the measurement to perform it. Simply position the part on the Metrios table and start the inspection. Our work has become faster and more efficient, whereas inspections that would have been much more complex with other instruments now provide immediate results.
To inspect the internal features of the components we produce, we can view the drawings directly on the touchscreen. Finding the controls on the screen has also become intuitive."
Gai Giacomo S.r.l. - Italy

THE FUTURE OF DIGITAL MEASUREMENT

THE EVOLUTION OF THE PROFILE PROJECTOR

Metrios measuring machines represent the new generation of optical dimensional inspection for prismatic components. Designed to operate directly on the production floor, Metrios enables the fast and precise verification of components with complex geometries, including plates, gears, punches, stamped parts, and multi-surface machined components.

Thanks to its high-resolution optical acquisition system and automatic analysis software, Metrios performs complete and repeatable measurements in just a few seconds, eliminating subjective errors and setup times. Its intuitive interface and robust construction make it ideal for production environments, where reliability and speed make all the difference.

APPLICATIONS

AUTOMOTIVE

Machined or molded automotive components, such as brackets, supports, gears, and plastic injection-molded parts for vehicles

TYPICAL CHALLENGE

Speeding up the dimensional inspection of geometrically complex parts (multiple holes, irregular profiles) produced in high volumes, without the need for dedicated fixtures.

SOLUTION

Metrios enables the measurement of multiple dimensions on several parts simultaneously with a single click, drastically reducing inspection times in production (measuring 5 to 10 flat parts together in just a few seconds).

AEROSPACE & DEFENSE

Complex-profile machined components (such as plates with precision holes, blades, or aircraft engine parts), aerospace injection-molded parts, cartridge cases, and ammunition

TYPICAL CHALLENGE

Measuring complex 2D dimensions and hole positions according to strict GD&T requirements on difficult materials, including composites and lightweight alloys, while ensuring repeatability and compensating for thermal variations.

SOLUTION

As a digital optical system with internal calibration and thermal compensation, Metrios provides reliable and consistent measurements directly on the shop floor, even for these critical components, with the ability to evaluate GD&T tolerances (such as true position) directly within the software.

MEDICAL & PHARMACEUTICAL

Injection-molded plastic components (e.g., syringes, Luer connectors, medical device parts), flat surgical instruments, and pharmaceutical blister packs.

TYPICAL CHALLENGE

Ensuring 100% accuracy and documentation on often disposable, mass-produced parts by recording every measurement for compliance purposes.

SOLUTION

Metrios enables rapid inspections on large sample groups (for example, measuring 10 syringe components simultaneously for statistical analysis), with automatic report generation for traceability. In addition, its intuitive interface allows even line operators to perform immediate spot checks (such as dimensional verification of vial batches) without interrupting production.

MOLDING & PLASTICS

Components produced through plastic molding or die casting, including plastic gears, molded connectors, appliance components, and parts for consumer electronic devices.

TYPICAL CHALLENGE

Measuring complex geometries or deformations (shrinkage, flash) on plastic or die-cast parts while ensuring their functionality.

SOLUTION

Metrios verifies geometries, profiles, flash, and deformations typical of molded or die-cast parts in just a few seconds, even on multiple parts simultaneously and without dedicated fixtures. Immediate comparison with nominal dimensions helps quickly identify shrinkage, dimensional deviations, and molding defects, making quality control faster, more repeatable, and more effective directly on the production floor.

ELECTRONICS & CONNECTORS

Micro-connectors, printed circuit boards with holes and cut-outs, plastic-molded electronic components (such as multi-pole connectors), and metal components

TYPICAL CHALLENGE

Inspecting small and intricate dimensions (pin pitches, alignments, terminal thicknesses) on large production batches, where manual inspection would be too slow.

SOLUTION

Metrios captures images of multiple parts simultaneously on the measuring stage and automatically measures extremely small alignments and center distances, ensuring the immediate identification of out-of-tolerance parts without requiring a specialized operator.

MICROMECHANICS & WATCHMAKING

Very small, high-precision flat or turned components, such as watch gears, stamped sheet-metal parts for micromechanics, and miniature connector components.

TYPICAL CHALLENGE

Measuring micro-profiles (such as gear teeth and micro-holes) requires high optical magnification and often multiple dedicated instruments.

SOLUTION

Metrios offers high-definition optics (HD model) capable of measuring even the smallest geometries, and the software allows the profile to be overlaid onto the CAD drawing (DXF) to quickly verify any differences compared to the nominal design.

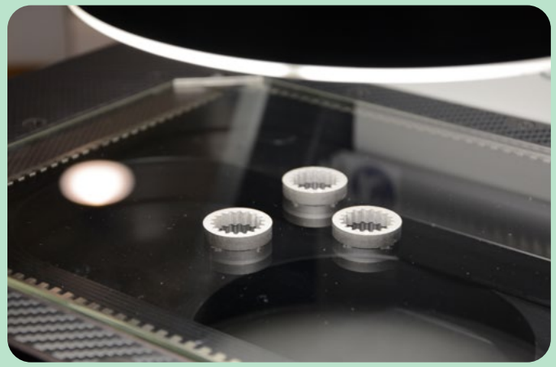
FAST

Save time, increase productivity

Traditional measuring instruments require time to orient, clamp, and position each part. Metrios, on the other hand, allows components to be freely placed on the measuring stage, automatically detecting, orienting, and measuring them.
Multiple components can be measured simultaneously, with no limits on the number of parts and without the need for expensive clamping devices.
The system captures the entire measuring area at high resolution, analyzing even very small features. Metrios automatically recognizes, counts, and measures every element, delivering reliable, production-ready results in just a few seconds.

Automatic recognition and continuous measurement

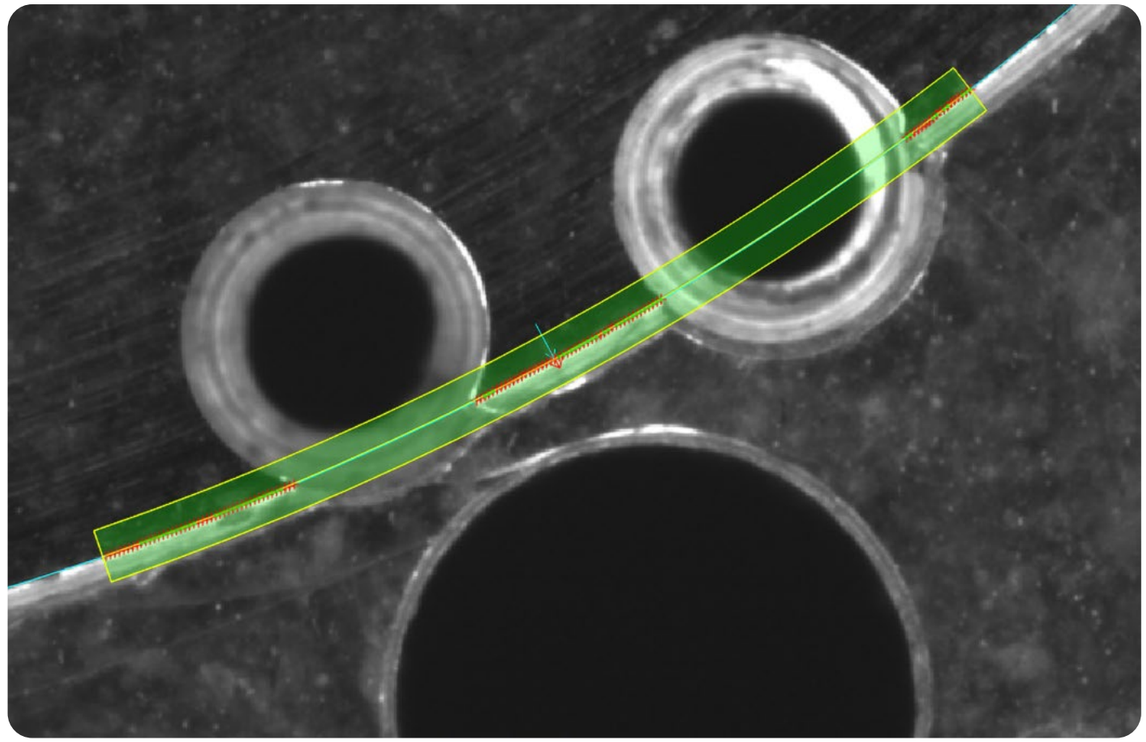
With Metrios, there is no need to search for the right program anymore: the system automatically recognizes the part placed on the measuring stage and loads the corresponding measurement program. This feature is ideal when managing multiple machines or different production runs within the same department, eliminating errors and saving valuable time. If company procedures do not allow automatic recognition, a barcode or Data Matrix reader can be used to achieve the same level of automation. For repetitive measurements, the Autoplay function automatically starts the cycle as soon as the part is positioned, ensuring fast, sequential measurements without operator intervention.

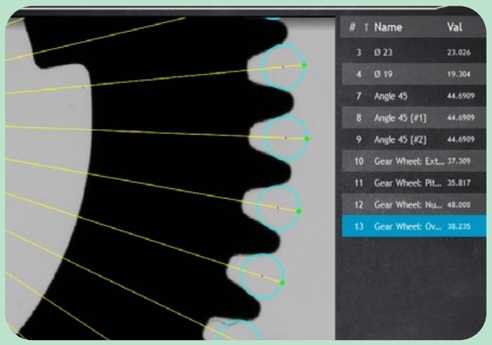


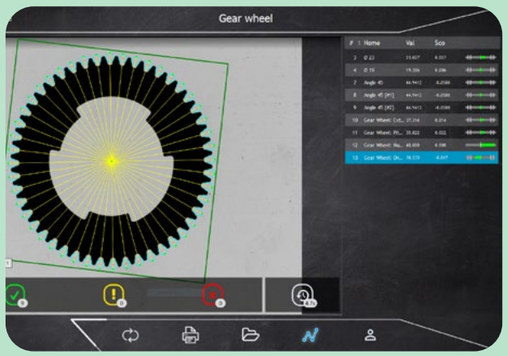
EASY

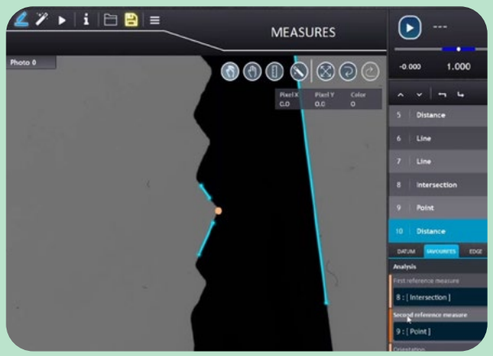
See what you measure, measure what you see

With Metrios, you can measure a single part without programming: simply place it on the measuring stage, acquire the image, and use the touch functions to instantly obtain the desired dimensions. As powerful as a measuring machine, as intuitive as a smartphone.
Quickly create measurement routines starting from the real image of the part or from a DXF file, using dedicated macros that simplify every step of the process. The large multitouch display allows you to zoom in, analyze, and accurately select the profiles to be measured. Free offline programming makes it possible to create and modify routines remotely, without interrupting production. For training purposes, the Training Arena provides tutorials and guides that are always up to date. And if complex routines or start-up assistance are needed, our technicians are ready to support you.





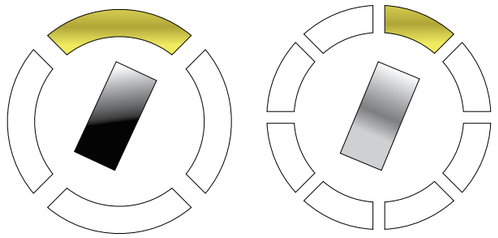


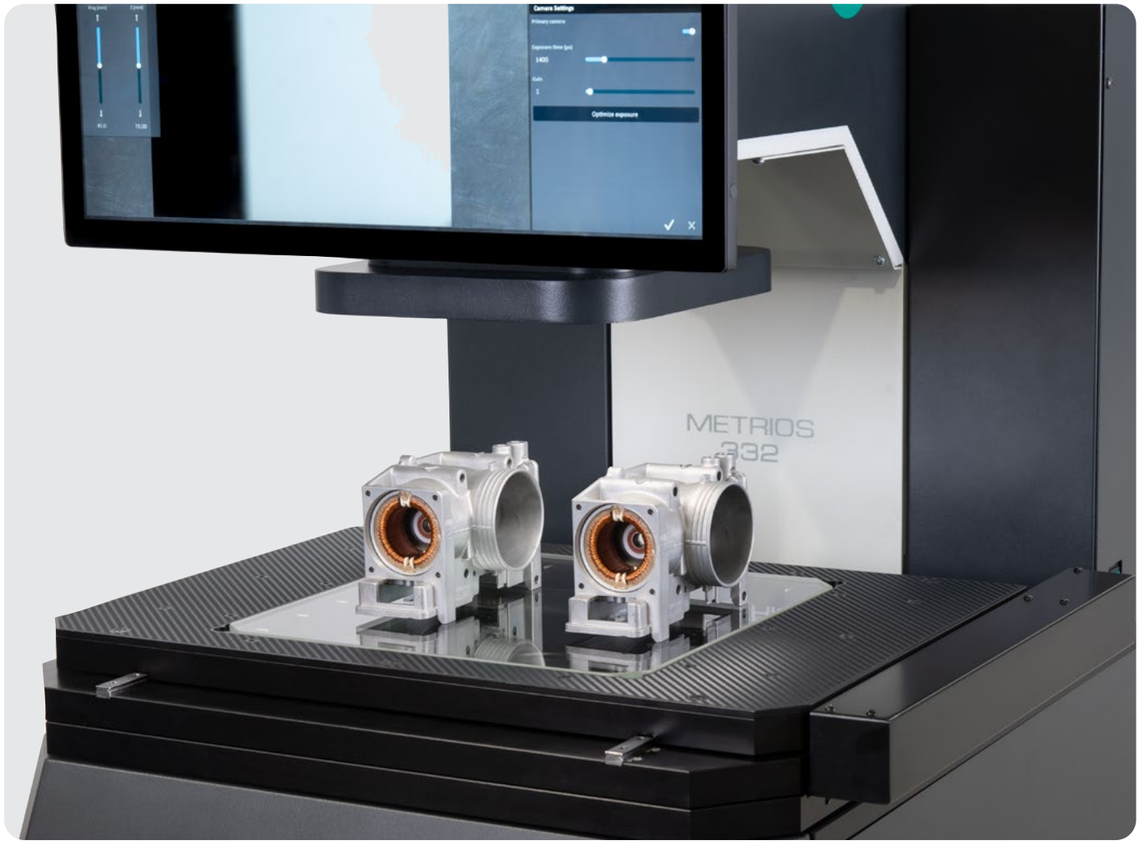


STABLE

Objective measurements, not just in the metrology room

Metrios automates dimensional inspection, making it objective, fast, and repeatable. With a single command, the machine performs the complete inspection of the part, eliminating human error and ensuring reliable results for production setups, incoming goods acceptance, and final testing.
In addition, while temperatures may fluctuate on the shop floor, precision remains constant: Metrios is equipped with an integrated step master and three temperature sensors that ensure consistently optimal performance.

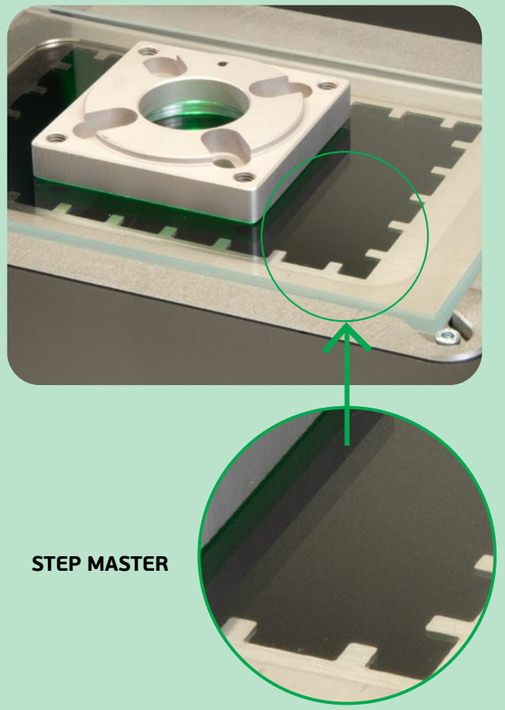


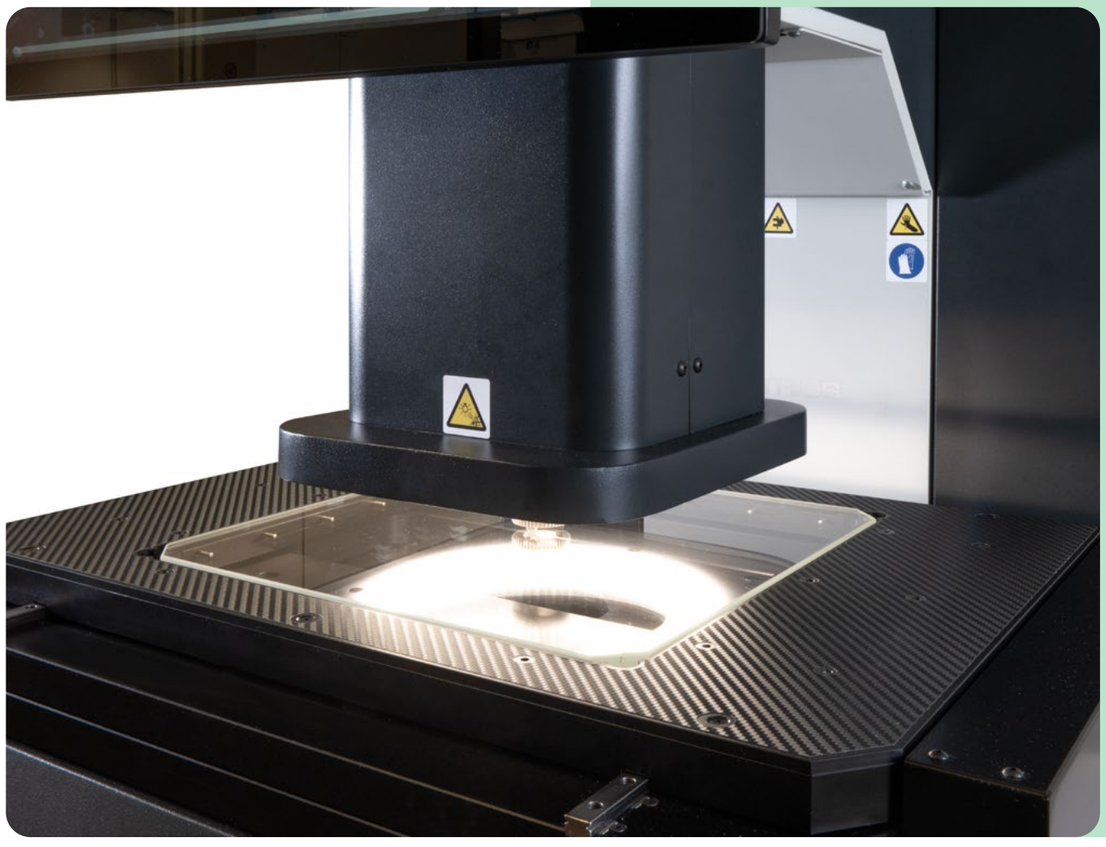


Intelligent lighting and precision from every angle

The exclusive vertically moving lighting system isolates the part from variations in ambient light, maintaining stable measurements even in uncontrolled environments. The Eagle Eye function automatically centers the detail to be analyzed and reproduces the same lighting conditions in every cycle, improving repeatability.

The eight-sector optical system adapts the lighting to the orientation of the part, providing a uniform view and consistent results even when components are positioned manually.





THE METRIOS RANGE

METRIOS

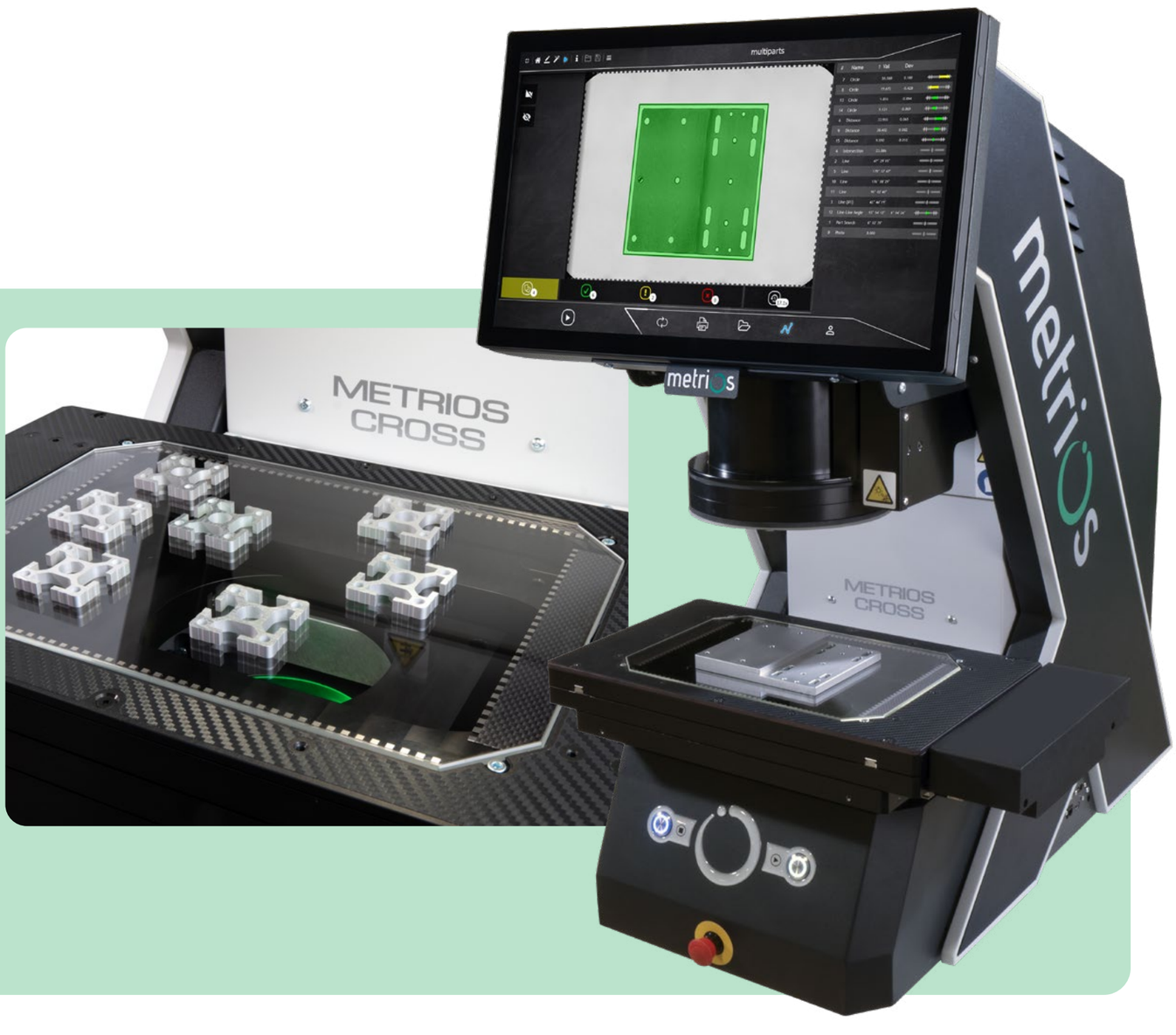
The evolution of the profile projector,
a complete and intuitive solution.

Measurement area: 95×65 mm

METRIOS CROSS

Ideal for measuring dozens of parts in just a few seconds,
with maximum precision and repeatability

Measurement area: 265x200 mm



THE METRIOS RANGE

METRIOS HD

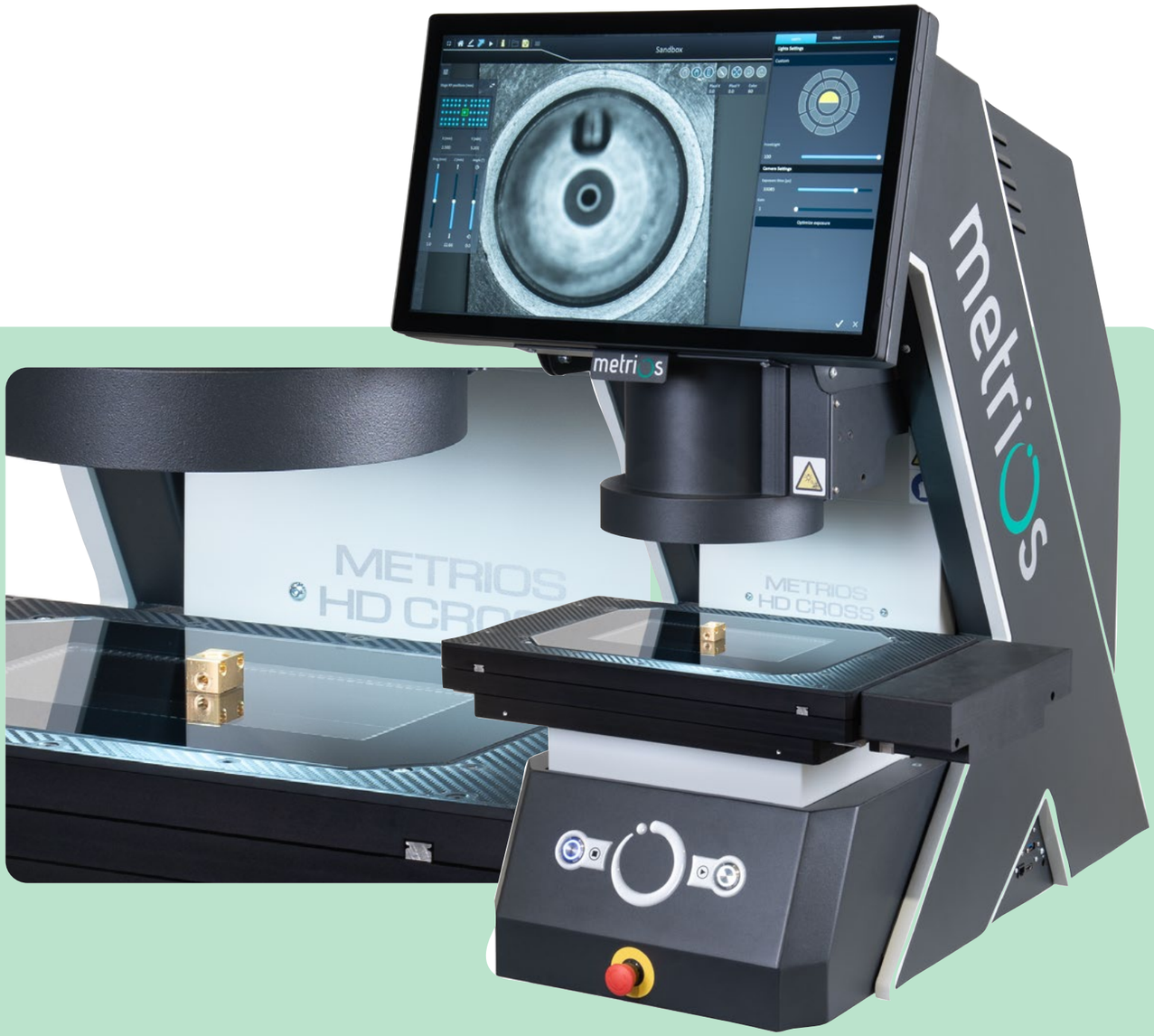
Optimized to ensure extreme precision and reliability, it integrates advanced technology and maximum accuracy for the dimensional inspection of micro-components.

Measurement area: 23×23 mm

METRIOS HD CROSS

A large measurement area that enables even the smallest details to be detected with precision.

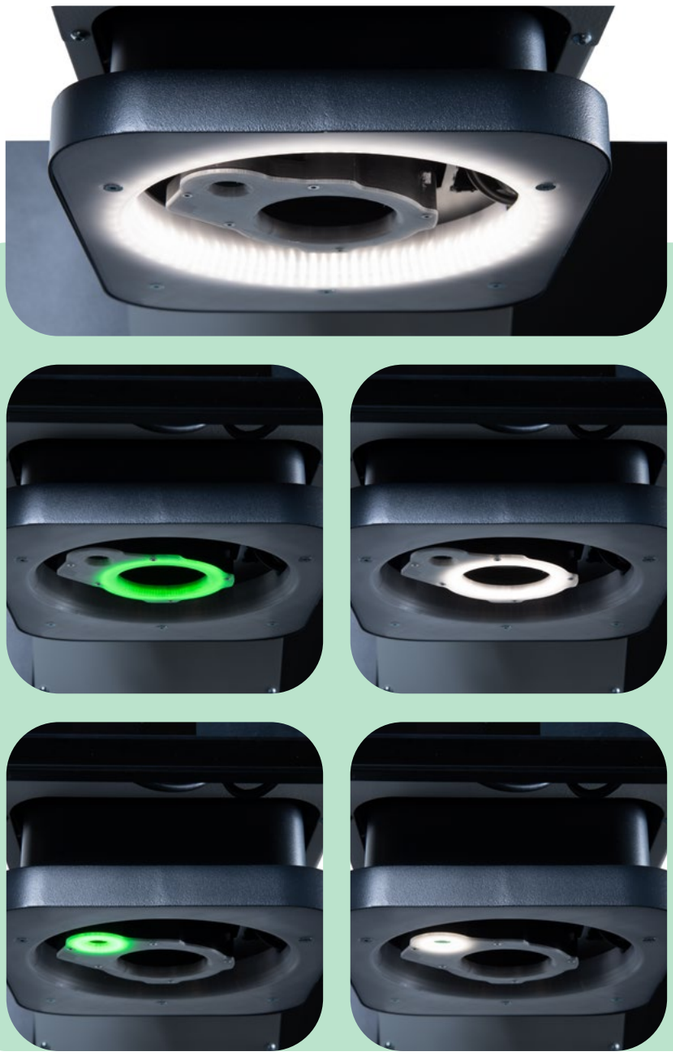
Measurement area: 200×100 mm with Z-axis

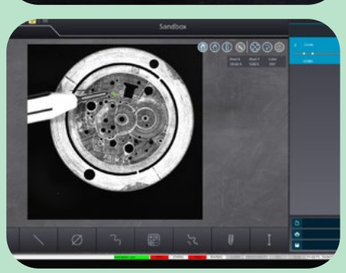


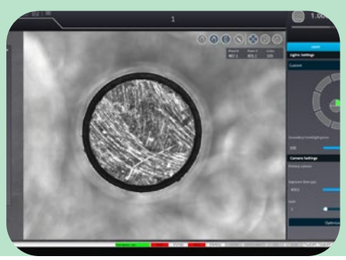
METRIOS 332

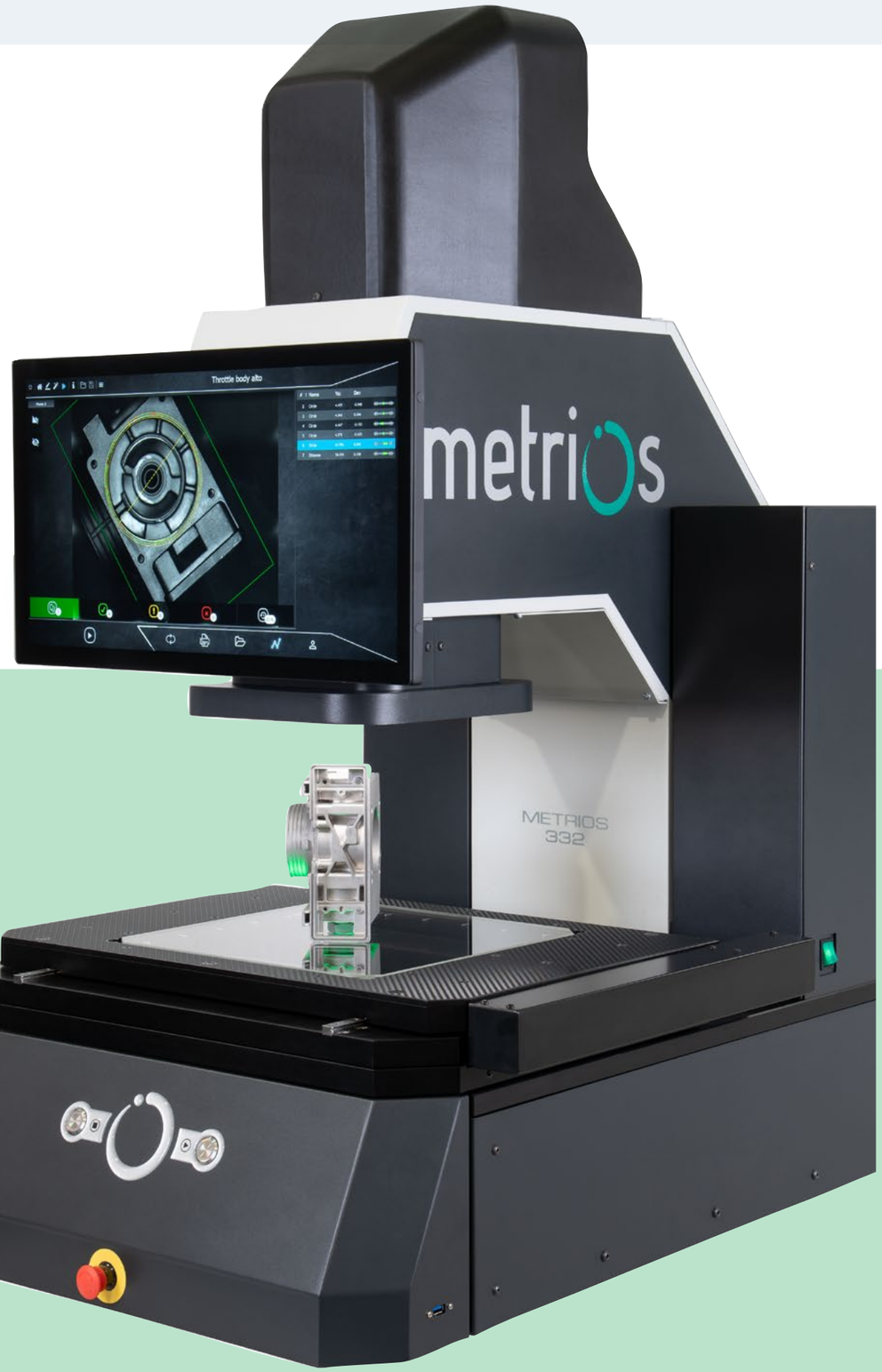
Designed for large, heavy, and complex parts, as well as multi-part measurements. It combines a large measurement field with a next-generation multi-sensor system and comprehensive illumination to deliver maximum precision.

Measurement area: 300×300×200 mm with Z-axis





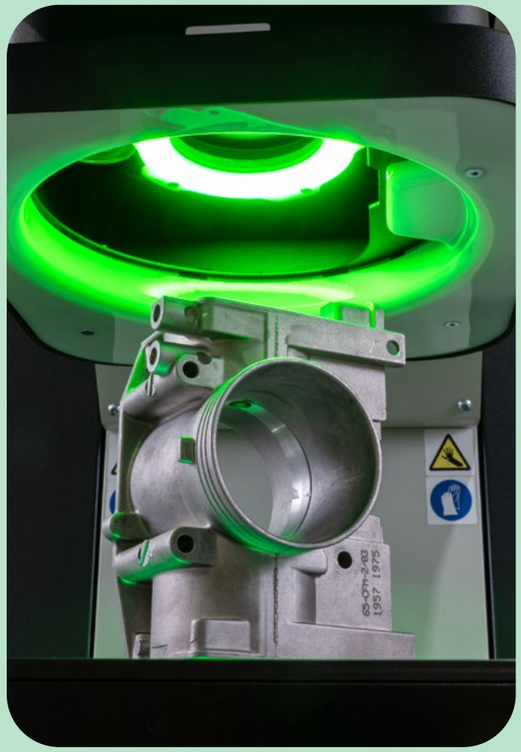


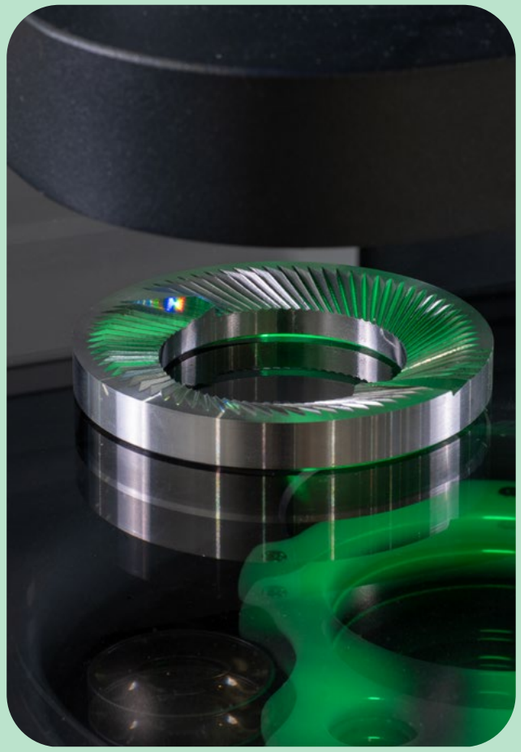


METRIOS 532

Designed for large, heavy, and complex components,
Metrios 532 offers an even larger field of view, making it ideal
for measuring oversized parts or handling a greater number
of components in a single acquisition.
Thanks to the same advanced architecture and next-generation
multi-sensor system featured in the 332 model, it ensures
high precision and repeatability under any operating conditions.
Its comprehensive and intelligent lighting system enables
extremely reliable analysis of surfaces, edges, and complex details.

Measurement area: 500×300×200 mm
with Z-axis





CONFOCAL

The confocal sensor integrated into the METRIOS 332 and 532 optical measuring machines enhances dimensional inspection by introducing high-precision three-dimensional measurement directly on the production floor, with a significant increase in speed.

Non-contact measurement, faster and more efficient

Instant detection of height dimensions without the risk of deforming the part, reducing cycle times and increasing productivity.

High-accuracy and rapid three-dimensional analysis

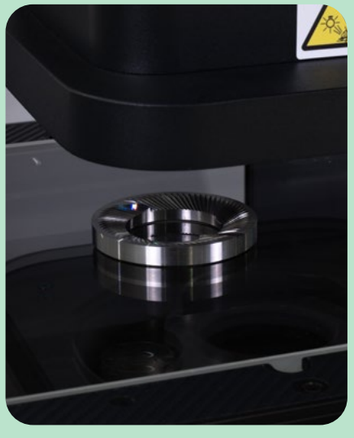
Fast measurement of steps, depths, planes, and complex profiles with micrometric resolution, improving efficiency compared to the traditional Z-axis measurement already available on the machine.

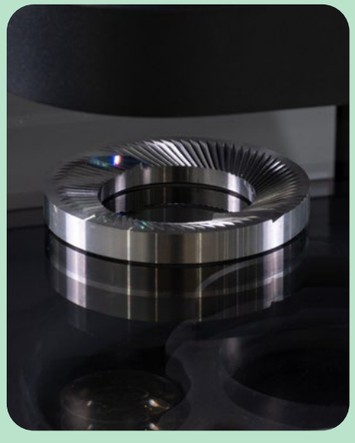
High performance even on challenging surfaces

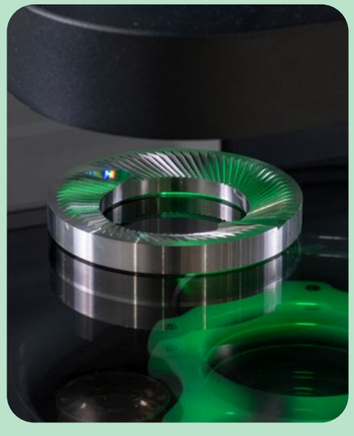
Reliable operation on reflective, glossy materials or components with complex geometries, maintaining precision and stability even under the most demanding conditions.

Complete integration into the inspection cycle

Combined 2D optical measurement and three-dimensional analysis in a single solution, without repositioning and with optimized inspection times.







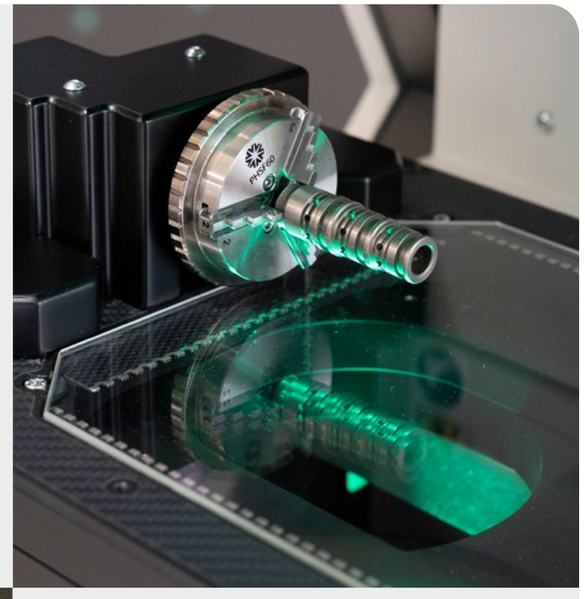
RE-LIGHT

Measure every side of the part in a single cycle

- Count on a predictable cycle time
- Get all your measurement results in a single report

Two solutions in one: Flat and cylindrical parts on the same measuring system

- METRIOS automatically identifies the reference feature to correctly orient the measurement
- Eliminates positioning errors caused by manual setup
- Saves time
- Can be removed to provide full access to the measuring stage



The METRIOS tailstock, the evolution of the re-light rotary axis

The METRIOS tailstock is designed to ensure stable measurement of long, slender components such as shafts, pins, and turned parts up to 300 mm in length. It securely supports the workpiece without adding operational complexity or slowing down the inspection process.

**Optional feature available for METRIOS 332 and 532.*

WHAT MAKES IT UNIQUE

Metrios combines automation and manual intervention, allowing precise measurements even when poorly defined edges, reflective surfaces, or high variability prevent automatic recognition.
Thanks to the touchscreen interface, operators can select the measurement points directly on the real image of the part.
The system integrates advanced OCR technology that reads and verifies characters and serial numbers on the component, improving traceability and quality control.
It also supports GD&T inspections, including True Position using Maximum Material Condition (MMC) and Minimum Material Condition (LMC) criteria.
Thanks to advanced tools, gear measurement becomes simple and effective, enabling the inspection of both standard gears and complex multi-level profiles.
Programming can be carried out either from an image or from a DXF file, with the possibility of exporting the acquired profile for reverse engineering activities.

Functions such as Sub-Part Finder make it possible to identify micro-surface details within the image.
Profile detection is optimized: unlike other systems, Metrios displays every acquired point, ensuring complete visual inspection.
The actual profile can be compared with the theoretical DXF through a clear graphical analysis, which can be divided into sectors for more targeted investigations.
The software provides statistical tools such as trend analysis, Cp, and Cpk, and generates immediate, customizable reports in PDF format.
Data collection is performed automatically and can be exported in various formats, reducing human error and facilitating analysis of the production process.

Metrios is not just a measuring machine, but a system that combines operational flexibility, advanced profile inspection, and structured data management.

APPLICATIONS

SPRINGS

GASKETS

CONNECTORS

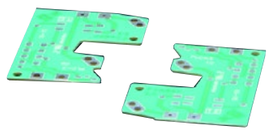
PUNCHED PARTS

GEARS

MECHANICAL COMPONENTS

RING GEARS

WATCH COMPONENTS



PRINTED CIRCUIT BOARDS (PCBs)

MEDICAL COMPONENTS

O - RINGS

MILLED PARTS

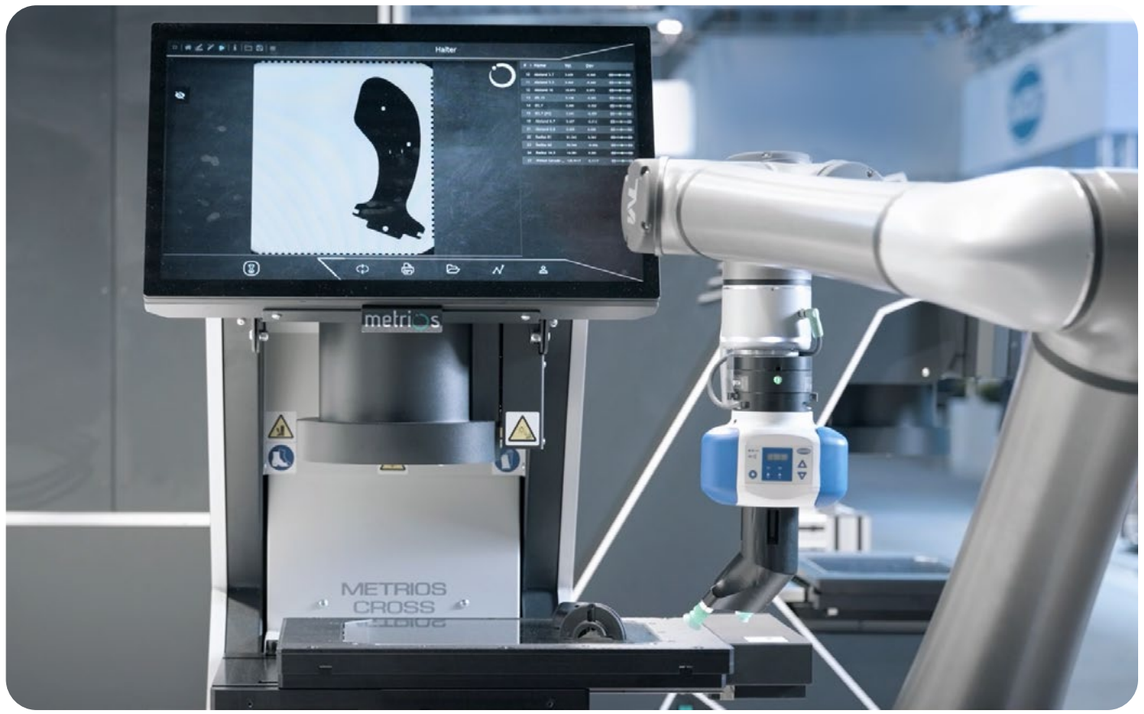
MEASURE, CONNECT, AUTOMATE

Integration and connectivity are essential in manufacturing environments.
Metrios leverages connectivity to transform data into predictions.

Robotic integration
Delegate loading and unloading operations to automation. Install Metrios directly on the production line and take advantage of communication protocols (Profinet or Profibus) for easy robotic integration.

More than just a measuring machine: a data collection station
Metrios collects data from external instruments via USB. This makes it possible to include in the measurement report results that cannot be obtained with an optical measuring system alone, such as weight, surface roughness, or any other data generated by external instruments.

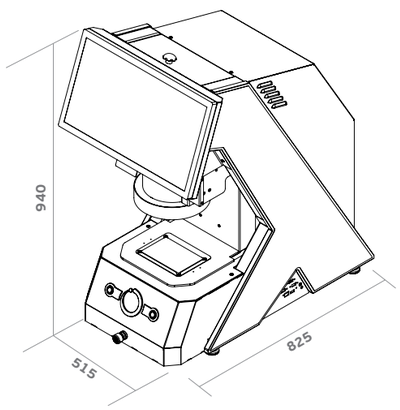
Data for statistics or process correction
Metrios can generate basic statistical analyses or export data to external management systems. Datas are available through fieldbus communication, in CSV format, or in the native Q-DAS format.
Metrios can also be used to correct the production process, for example in machining applications involving material removal. Through the additional VV-linx software, Metrios can calculate the tool correction parameters to be sent to the machine tool and make them available through the communication node (Profibus or Profinet).



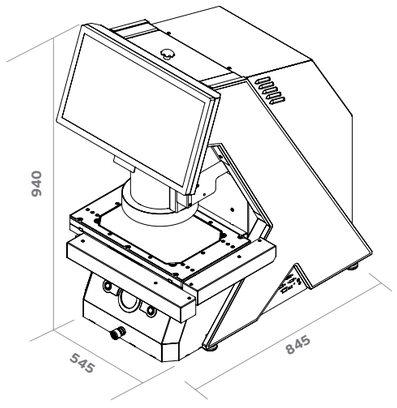
		Metrios	Metrios Cross	Metrios HD	Metrios HD Cross		Metrios 332			Metrios 532		
							Main camera	Ultra HD sensor	Confocal	Main camera	Ultra HD sensor	Confocal
Field of view size	Camera field of view	95x65 mm	95x65 mm	23x23 mm	23x23 mm		47x47 mm	3x2mm		47x47 mm	3x2 mm	-
	Measuring area	95x65 mm	265x200 mm	23x23 mm	200x200 mm		305x305 mm	235 x 235 mm covered by all sensors	235 x 235 mm covered by all sensors	505 x 305 mm	435 x 235 mm covered by all sensors	435 x 235 mm covered by all sensors
X Y Repeatability (2σ)	Inside camera's field of view	(2+0,01L[mm]) µm	(2+0,01 L[mm]) µm	(1,5+0,01 L[mm]) µm	(1,5+0,01 L[mm]) µm		1 µm	0,2 µm		1 µm	0,2 µm	-
	In the entire stage (X/Y axis)	(2+0,01L[mm]) µm	(3+0,01 L[mm]) µm	(1,5+0,01 L[mm]) µm	(2,5+0,01 L[mm]) µm		2,5 µm	-	-	2,5 µm	-	-
X Y Measurement accuracy (2σ) *(1)	Inside camera's field of view	(5+0,01L[mm]) µm	(5+0,01 L[mm]) µm	(2,5+0,01 L[mm]) µm	(2,5+0,01 L[mm]) µm		(2,5+0,01L[mm]) µm	-	-	(2,5+0,01L[mm]) µm	-	-
	In the entire stage (X/Y axis)	(5+0,01L[mm]) µm	(7+0,01 L[mm]) µm	(2,5+0,01 L[mm]) µm	(3,5+0,01 L[mm]) µm		(3,5+0,01L[mm]) µm	-	-	(3,5+0,01L[mm]) µm	-	-
Z measurement *(2)	Repeatability (2σ)	Not available			3 (µm)		-	3 µm	1,5 µm	-	3 µm	1,5 µm
	Accuracy	-	-	-	-		-	(6+0,01L[mm]) µm	(3+0,01L[mm]) µm	-	(6+0,01L[mm]) µm	(3+0,01L[mm]) µm
Environmental resistance	Operating ambient temperature	+10 to 45°C							-	-	-	-
Illumination system	Back light	Telecentric green LED illumination										
	Top light	Green LED illumination inside the optic		White top illumiator			White and green top light	Secondary white and green top light	-	White and green top light	Secondary white and green top light	-
	Surface / incident / grazing light	Motorized adjustable ring light (Ligth Dome) covering the part from enviromental lights										
	Nr of Rings	2					1			1		
	Sectors each ring	8 independent sectors following part orientation for each ring										
Max Loading Load capacity Z mm		100 mm	80 mm	100 mm	80 mm		200 mm	200 mm	-	200 mm	200 mm	
Max Loading capacity kg *(3)		5 kg	3 kg	5 kg	3 kg		20 kg			20 kg		
Rotary axis function		Not available	Optional	Not available	Optional		Optional			Optional		
Resolution	X-Y-Z	0,0001 mm										
Machine Weight		110 Kg					250 kg			250 kg		

*(1) Data comply with ISO 10360-7 standards, at an ambient temperature of +20°C ±1°C.
*(2) The surface material and/or finish may affect the measurement results.
*(3) The load weight and/or imbalance of the workpiece may affect the measurement results.

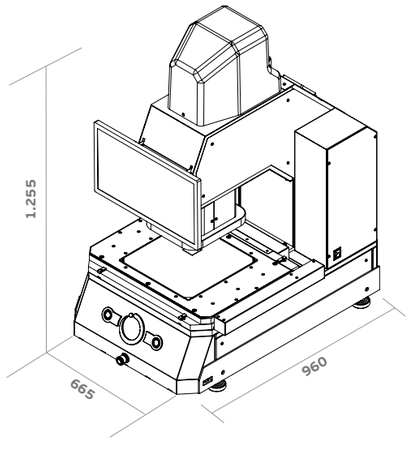
Metrios
Metrios HD



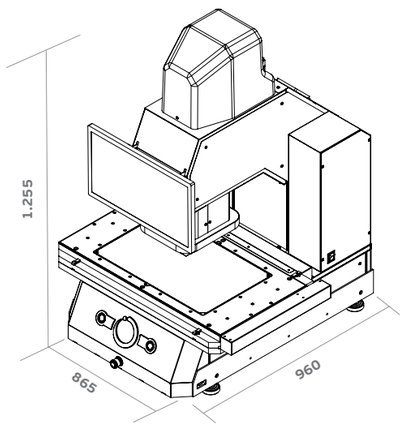
Metrios Cross
Metrios HD Cross



Metrios 332



Metrios 532



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