HEXAGON

OPTIV S

Optical coordinate measuring machines





Measuring a complex part on separate devices means repositioning it again and again – accumulating error, consuming programming time and forcing repeated fixture changes. Deep holes, inner walls and reflective curves often cannot be captured accurately at all, leaving irregular surfaces impossible to evaluate as a whole.

OPTIV S

Application flexibility and measurement cycle efficiency

OPTIV S brings the capabilities of different contact and non-contact sensor technologies together within a single machine.

A multi-sensor optical CMM measures the geometric characteristics of the most complex components more completely than possible on any other measurement system. When many different parts need to be measured, manufacturers benefit from the quick availability of sensors ready for varying feature sizes, dimensional tolerances, surface finishes and accuracy requirements.

The best-suited sensor for the measurement task at hand is automatically deployed in an automated routine setup for the specific part to be measured, resulting in highly efficient measurement cycles and improved manufacturing productivity - the fundamental benefits of OPTIV S.

The benefits of OPTIV S



Cut capital and operating expenses by integrating the functions of multiple specialised measuring systems into one machine.



Fixture the part once and get all measurements from an automatic measurement cycle with no operator intervention.



Increase accuracy by applying the most appropriate sensor technology for the part feature to be measured.



Gain operational simplicity with PC-DMIS metrology software that tightly integrates all the sensors and consolidates the data into a single measurement report.

Built for versatile accuracy at speed

Every element of the OPTIV S – granite frame, dual sensor axes, optional rotary table – works towards one outcome: measurements you can trust at production speed.

OPTIV Dual Z technology

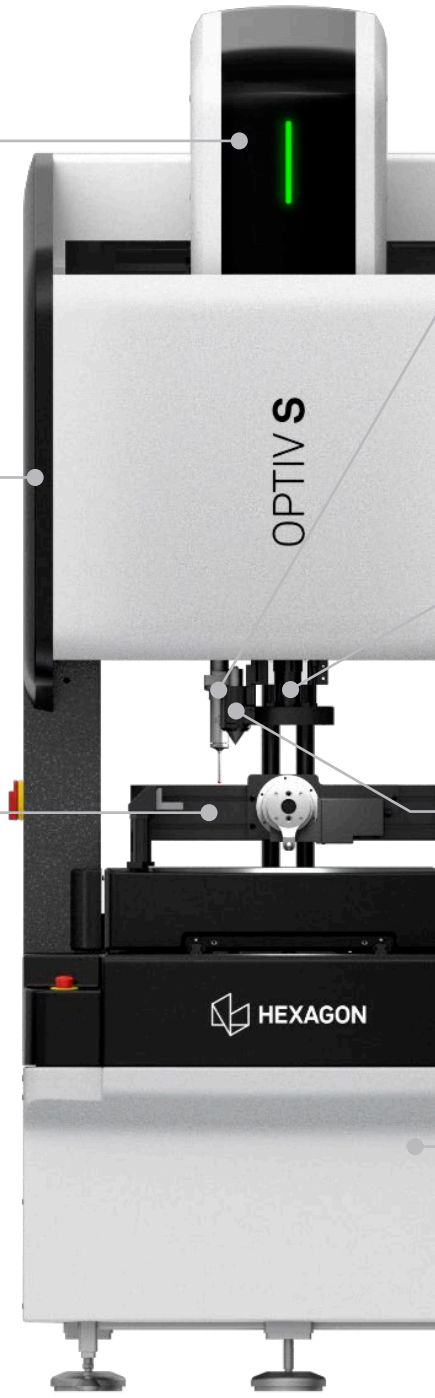
OPTIV S features optical and tactile probes, each mounted on its own dedicated Z-axis. This configuration reduces measurement time and collision risk.

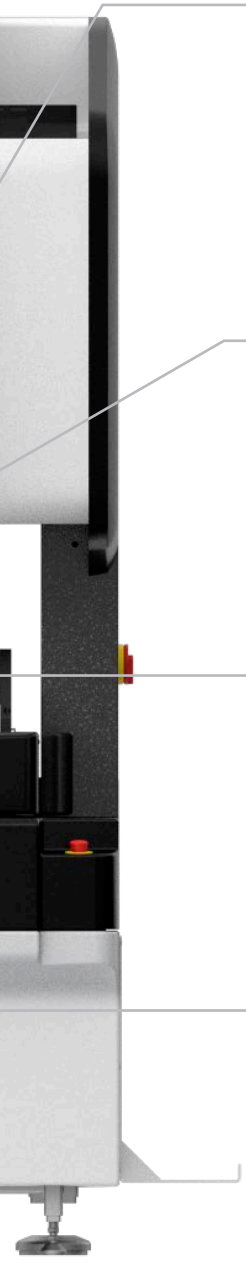
Proven construction

The OPTIV S is built on a high-rigidity monolithic granite structure. Its exceptional static and dynamic stiffness ensures outstanding 3D accuracy, even during high-speed movements and rapid accelerations.

Rotary table (optional)

The rotary table automatically repositions the part, providing optimal access for inspecting part features and significantly enhancing application flexibility.





Tactile scanning sensor

Delivers high-precision continuous scanning to rapidly and accurately measure 3D geometric features and complex surface contours of workpieces.

Vision sensor

High-resolution camera sensor for fast non-contact measurement of very small geometric features or deformable parts.

Chromatic white light sensor (optional)

A non-contact optical sensor specifically engineered for rapid and precise measurement of highly reflective, transparent, or semi-transparent materials, as well as flexible components.

Automation integration

The OPTIV S is fully compatible with Hexagon's Smart Factory ecosystem, enabling seamless integration into automated production environments.



Design principle

- Fixed-bridge type optical CMM with up to two independent sensor axes (OPTIV Dual Z technology)
- Rugged and temperature resistant granite construction
- Passive vibration dampers as standard, active vibration dampers as an option
- Integrated parametric temperature compensation

System characteristics

- All-granite construction
- Central drive on all axes with minimal Abbe error
- 3D measurement performance according to ISO 10360 standards
- Precision ball screws and guideways
- Resolution of the measurement system: 0.005 µm
- Industrial-grade 5.1 megapixel CMOS colour camera
- 10x motorised CNC zoom
- Illumination: coaxial LED top light, telecentric LED back light, 6 ring/8 segment LED ring light
- HP-S-X1 scanning probe
- Universal metrology software PC-DMIS with a complete CAD, GD&T, and analysis toolset
- Optional: Chromatic white light sensor
- Optional: CNC rotary table
- Optional: 5.1 megapixel CMOS monochrome camera, 1.3 megapixel CMOS monochrome or colour camera

Application versatility

OPTIV S measures parts across a wide range of sizes and industries.
Typical applications include:

Consumer electronics

Shorter product cycles leave less time for inspection while tighter tolerances demand more of it. OPTIV S combines vision, contact scanning, and chromatic white light in one cycle – small features, cosmetic surfaces and form measured together.

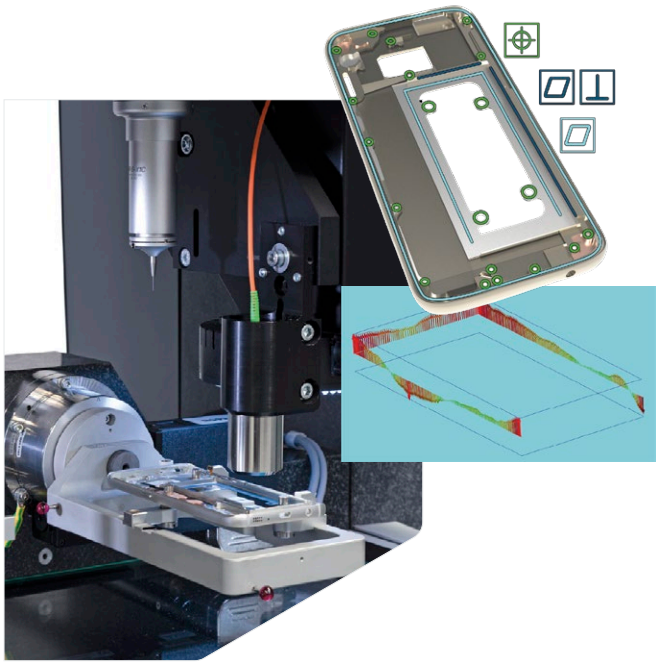
Typical applications: mobile phone housings, camera modules, smartwatch cases, connectors, PCBs

Medical technology

Medical parts are small, closely toleranced and often polished, transparent or flexible – the hardest combination for any single sensor. OPTIV S deploys the right one for each feature and reports them together.

Typical applications: surgical instruments, implants, dental components, micro-moulded parts



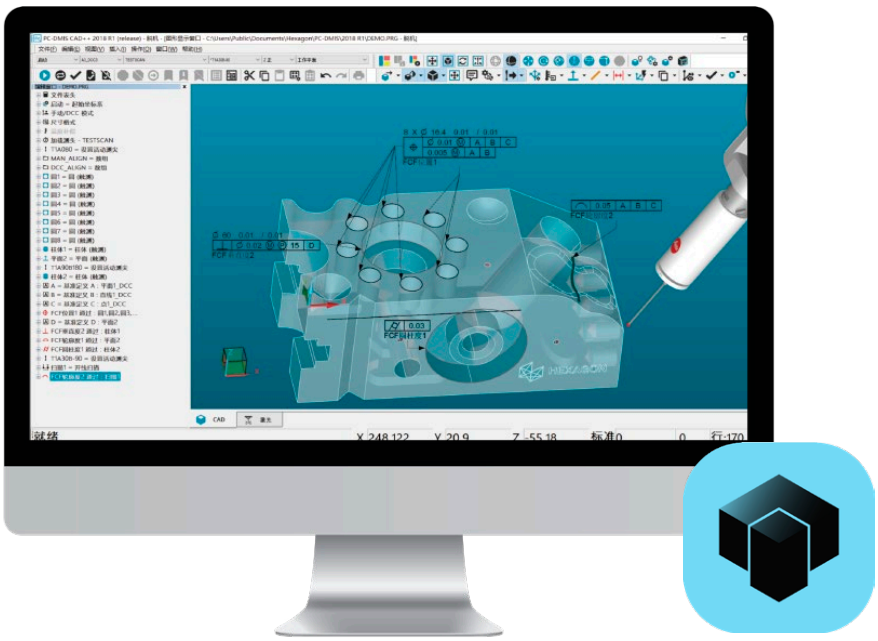


PC-DMIS

Making measurement simple, efficient and effective

OPTIV S is powered by industry-leading metrology software, built on decades of Hexagon's application expertise and a deep understanding of user needs.

With its intuitive interface, user-friendly workflows, customisable reports, intelligent feature recognition, and multi-language help, the software is easy to learn and highly efficient. It supports a wide range of measurement applications, helping manufacturers strengthen their coordinate measurement and quality control capabilities for faster, more reliable inspection and process control.



- PTB-certified algorithms
- Powerful image processing with advanced edge detection algorithms
- Outstanding multi-sensor integration
- Support for 14 languages
- MultiCapture vision measurement technology
- Offline programming based on 3D CAD models
- Advanced programming applications
- Localised global product support

VISUAL DETECTION

Automated surface defect detection - ensuring the integrity of high-quality surface finishes

VISUAL DETECTION is Hexagon's deep learning platform for industrial defect detection. Leveraging advanced AI, it addresses key challenges in visual inspection: the inconsistency of human eye detection, the need for frequent updates with traditional machine vision, and the inefficiency and low accuracy of manual methods.



- Deep Learning concept
- Visual annotation tools
- Powerful image processing capabilities
- Sample enhancement techniques
- Simple and intuitive interface
- Multi-object classification and detection
- Multi-model deployment
- Rich application interfaces



Automation

Intelligent workpiece feeding and loading solution for high measurement automation and CMM utilisation.

TEMPO automated part loading system

TEMPO, the automation enhancement system, helps manufacturers integrate quality assurance into smart production environments. TEMPO is an off-the-shelf solution for automated part loading, queuing and unloading. Ready to drive efficiencies with OPTIV S.

TEMPO enables continuous measurement for hours or days at a time without operator intervention. From its ease-of-use to automatic identification of out-of-tolerance parts, TEMPO is designed to maintain inspection throughput while operators focus on tasks away from the CMM.

Service, monitoring & efficiency

Full Hexagon service. No exceptions.

Local teams delivering world-class support and service

Hexagon guarantees comprehensive after-sales support and services across the globe. Our international presence means you can rely on locally delivered solutions, with one of the largest dedicated service teams of any metrology equipment manufacturer.



MyCare

MyCare is Hexagon's service subscription offering that keeps your metrology system performing at its best. Simplify equipment maintenance and keep it performing to the highest standards with cost-effective support throughout its lifetime.

Greener metrology

Save energy

Sustainability is a powerful efficiency driver. Lowering energy consumption can significantly reduce operating costs and improve ROI. That's why we're focused on delivering solutions that help you achieve your global sustainability goals, including Eco Mode.

eco MODE

Smart condition monitoring for measuring machines

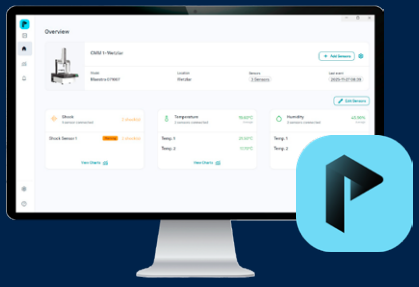
APOLLO

APOLLO provides real-time, centralised visibility of the status and utilisation of your measuring machines. It reads built-in machine and sensor data such as temperatures, operating states and collisions to help detect critical deviations early, keep machines within specification, and ensure reliable measurement quality. By linking measurement results with machine and sensor conditions, APOLLO enables full traceability for every measurement and can provide structured data to third-party software.



PULSE

PULSE extends condition monitoring on individual CMMs with retrofittable sensors for temperature, humidity, vibration and collisions. It helps reduce the risk of unnoticed events affecting measurement quality.
Connected with APOLLO, PULSE sensor data can be integrated into a central overview across multiple machines.





Hexagon is the global leader in measurement technologies. Our precision measurement, positioning, and autonomous solutions transform the world's most vital industries. From aerospace & defence, automotive, construction, general manufacturing, to mining and more, we provide the confidence that customers rely on to build, navigate, and innovate.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at hexagon.com and follow us @HexagonAB.

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