HEXAGON

Sales fact sheet

# GLOBAL Optics

Optical high-resolution measurements of miniature size and form features on challenging surfaces

## Application class

**Non-contact size and form measurements on varied part surfaces**

### Typical part and feature characteristics

- 3D microgeometries
- Functional surfaces, freeform surfaces
- Varied materials: rigid/soft, matte/ transparent/reflective
- Varied surface finishes: microstructured, coated
- Very small 2D geometries

### Application examples

- Orthopaedic implants
- Medical needles, syringes
- Optical lenses, mirrors, prisms, microlens arrays
- Headlights
- Injection nozzles
- Fiber optic connectors
- Stampings

## How the GLOBAL Optics builds

### Base system

**HP-OW**
White light sensor

**HH-AS-OWT2.5**
Motorised 2.5° indexing probe head

**HP-THDe**
Touch-trigger probe

**PC-DMIS CAD++**

**HR-R**
Sensor/probe module/styli changer rack

**Eco Mode**

- Ready-to-use system for fast non-contact measurements of very small size and form features on sensitive surfaces
- Seven different cross sections available
- Targeted metrology solution dedicated to specific applications

### Options

**HP-C-TS5.10**
Camera sensor

**HP-S-X1S / H**
Tactile scanning probe head

**Rotary table**
Angular part positioning

**XT (extended temperature)**
Near-line measurement

**PULSE wireless**
Real-time environmental monitoring

**Messaging lights**

**Accuracy+ | Throughput+**

- Tailored to individual application needs

### Enhancement packages

**Auto Create**

**Cycle Time**

**Reporting**

**Industrial Integration**

**Automation**

**Traceability**

Adaptability to individual production objectives

- Smart features for targeted productivity enhancements
- Pre-bundled and anytime applicable

## GLOBAL S and Advantage bridge-type CMMs

**GLOBAL S and Advantage CMMs are designed to be fast and are built on advanced design principles to inspire certainty and confidence.**

- Solid granite base with integrated dovetail guide, bridge with triangular crossbeam and air bearings on all axes for precise and repeatable high speed measurements
- Extended operating temperature range option and real-time temperature compensation for reliable measurements even with temperature fluctuations

**GLOBAL S and Advantage CMMs are designed to be configurable for the measurement task at hand.**

- Future-ready modularity: Enhancement options can be selected during initial CMM configuration or set up later to the in-service machine, allowing for scalable and adaptable system performance over the entire lifecycle

## Manufacturer challenges

- Capturing very small geometries and complex surface profiles from variable spatial directions and angles
- Accurate, reliable and traceable 3D measurements
- Tight integration of the CMM into smart production environments
- Ease of CMM operation to reduce the need for skilled labour
- Local service and support

## GLOBAL Optics: Solving customer challenges

- Maximum flexibility for capturing the smallest structures on any surface with two high-resolution optical sensors - a white light sensor and camera sensor - that are interchangeably deployed on a motorised indexing probe head
- Cycle time reductions through fully automatic sensor, probe module and styli changes
- ISO 10360 standard-compliant 3D accuracy specification
- Standardised integration kits ranging from half-automated part loading to fully automated solutions maximise CMM utilisation and increase throughput
- Seamless integration with Hexagon's IoT technologies for remote asset and environment monitoring
- Simplified INSPECT operator interface with real-time graphical reporting ensures intuitive operation, minimising the risk of data input and interpretation errors
- Maximum CMM availability through Hexagon's global service and support network

# What to ask when the competition claims...

### ... to be cheaper

- Does the system offer future-ready modularity?
- Can the system easily connect to automation integrators?
- Does the system's accuracy specification conform to ISO 10360 standards?
- Does the system perform well in the 15°C - 30°C operating temperature range without needing a costly climate room?
- Is real-time CMM status, usage and performance data included with the system?
- Does the system provide energy-saving features as standard?

### ... to provide systems easier to use

- Is a simple operator interface for shop-floor inspection included as standard?
- Does the system provide centralised reporting and visualisation functionality?
- Can the system alert the operator to environmental events such as crash events, vibrations, humidity and temperature spikes?

### ... to offer non-contact CMMs with similar capabilities

- Does the system combine an indexable white light sensor and camera sensor in a single solution for non-contact measurement of 2D and 3D geometry features of complex workpieces?
- Does the system enable cycle time reductions through fully automatic sensor positioning and sensor exchange?

## Other Hexagon solutions

- **Leitz Reference CMMs** for high-accuracy measurements of tight tolerance parts
- **OPTIV M multisensor CMMs** All-in-one metrology solutions with vision, touch probe and optical white light sensor
- **Leitz PMM-C CMMs** Premium metrology devices for highly precise measurements with sub-micron accuracy