HEXAGON

Sales fact sheet

Leitz Reference Flexibility

High-precision measurements of tight tolerance parts with maximum application adaptability

Application class

Highly accurate measurement of the most complex geometries with decreased cycle time

Typical part and feature characteristics

- Complex 3D geometries with tight tolerances
- Functional size and form features in various spatial orientations around the part
- Various material types and surface characteristics
- Rotationally symmetric parts

Application examples

- Compressor wheels
- eMobility: stator, hairpins, e-axle housings, e-drive transmission components
- Bipolar plates for fuel cells
- Powertrain components
- Medical implants
- Optical precision components

How the Leitz Reference Flexibility builds

Base system

HP-S-X1H
Tactile scanning probe head

HH-AS8-T2.5
Motorised 2.5° indexing probe head

SENMATION
Fully-automatic sensor exchange

QUINDOS
Metrology software

HR-XS
Sensor and styli changer rack

Messaging lights

- Ready-to-use system that decreases measurement time in the quality inspection of tight tolerance precision parts
- Four different cross sections available
- Targeted metrology solution dedicated to specific applications

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Options

HP-S-X5-HD
Fixed scanning probe head

HP-OW
Indexable white light sensor

HP-O Flex
Indexable interferometric sensor

Nikon LC15Dx
Laser scanning sensor

PROFILER R
Tactile roughness sensor

Rotary table
Angular part positioning and 4-axis scanning

XT (extended temperature)
Near-line measurement

PULSE
Real-time environmental monitoring

PC-DMIS CAD++

Accuracy+, Accuracy++

- Tailored to individual application needs

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Enhancement packages

QUINDOS options for special geometries

- Pre-bundled for geometry-specific measurement and analysis tasks

Leitz Reference high accuracy CMMs

Leitz Reference CMMs are designed for the most accurate 3D metrology performance 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 measurements and minumum measurement uncertainty
- Extended operating temperature range option and real-time temperature compensation for reliable measurements even with temperature fluctuations

Leitz Reference 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 additional SENMATION sensors set up later to the in-service machine, allowing for scalable and adaptable system performance over the entire lifecycle

Manufacturer challenges

- High-throughput and versatile measurements
- Large part and feature variety requiring flexibly adaptable multisensor measuring techniques
- Measurement software needs to be flexibly adapted for special geometry requirements
- Accurate, reliable and traceable 3D measurements
- Tight integration of the CMM into smart production environments
- Local service and support

Leitz Reference Flexibility: Solving customer challenges

- Multisensor capabilities with a broad range of tactile and optical sensors on indexing or fixed probe heads
- Extended application flexibility and decreased cycle time with SENMATION enabling automatic sensor changes within part programs and providing a futureproof platform interface for flexible integration of new sensors
- Customisable user interfaces with QUINDOS metrology software
- 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
- 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 the latest ISO 10360 standard?
- 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?

... to cover a similar range of high-accuracy applications

- Is the system multisensor capable, offering a similar range of tactile and optical sensors to be interchangeably used within part programs?
- Does the system support simultaneous 4-axis scanning - optical or tactile - in combination with a rotary table?
- Does the metrology software provide a modular structure of 50+ modules to easily adapt for industry-specific parts and special geometries?

... to provide systems easier to use

- Does the system allow for a customer-specific programmable user frontend?
- 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?

Other Hexagon solutions

- **GLOBAL CMMs** for high-throughput measurements across a broad range of components
- **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