# ZeGage™
## 3D Optical Profiler

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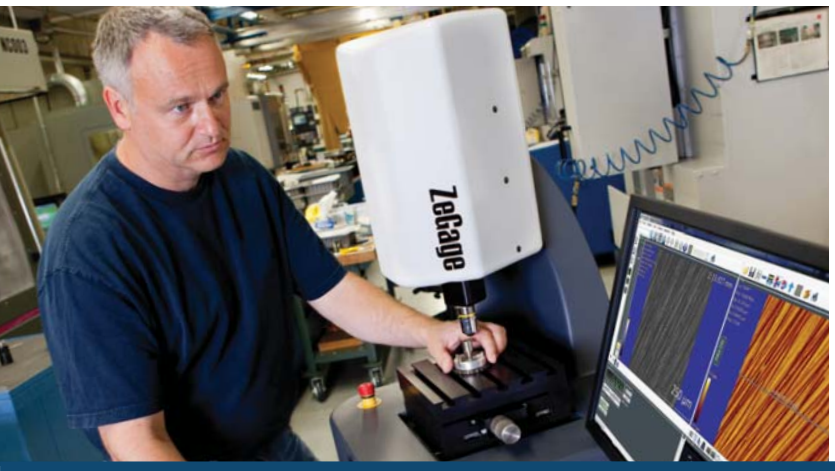
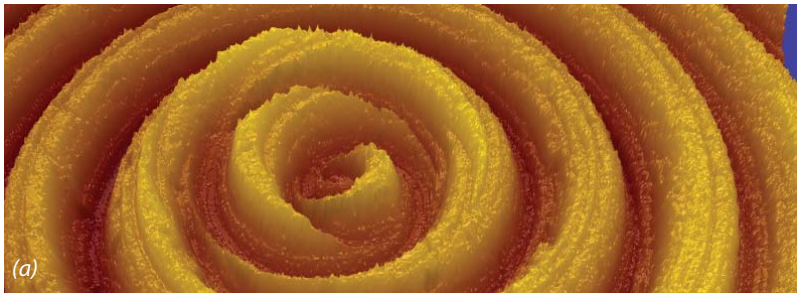
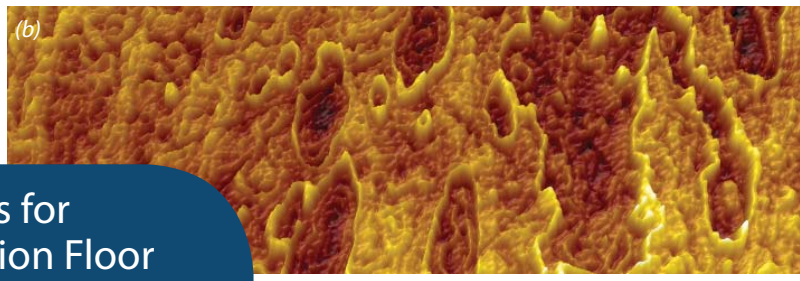
AMETEK®
ULTRA PRECISION TECHNOLOGIES




## Robust and Affordable 3D Optical Profilers for Precise Surface Metrology on the Production Floor

ZeGage™ is the ideal non-contact optical profiler for quantitative measurements of 3D form and roughness on precision machined surfaces. The industrial design provides fast, accurate metrology in a compact, cost-effective package that can be located directly on the factory floor without the need for vibration isolation or specialized enclosures. And the interactive control software, ZeMaps™, provides easy and detailed visualization to help you control your process. Read more to see how ZeGage Power, Versatility, and Value can benefit you.

**Powerful Performance**

- Proprietary SureScan™ technology makes the ZeGage profiler resistant to vibration; no vibration isolation platforms or enclosures necessary.
- Quantitative surface metrology with nanometer-level precision provides superior gage capability.
- Correlation to 2D and 3D standards, and compliance to ISO/DIS 25178 surface roughness parameters.
- High resolution 1 million pixel image sensor provides fast areal measurements in seconds for excellent surface detail and visualization.
- Integrated autofocus and focus aid simplify part setup and minimize operator variability.

**Versatility**

- Measures a wide variety of surface materials and parameters, including 2D and 3D profiling of surface texture, form, step-height and more.
- Selectable magnification and field-of-view with numerous imaging and system options.
- Included ZeMaps software provides comprehensive tools for surface data visualization, analysis and reporting.
- Heavy duty, T-slot compatible part positioning staging enables simple, repeatable fixturing and measurement.
- Optional motorized part stage enables fully automated measurement sequences and field stitching for high resolution inspection of large areas.

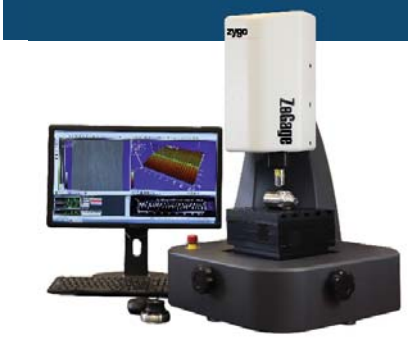
**Productivity and Value**

- Cost-effective price-to-performance ratio compared to alternative systems, including mechanical contact stylus profilers.
- Compact, vibration-tolerant design for easy integration anywhere in your facility.
- Non-contact method means no consumable replacement costs to worry about.
- Simplified operation results in low training and service costs.
- High-output, long-life LED light source for years of trouble-free operation.

*Images above: (a) machining marks on a fuel injector plunger and (b) water staining and scratches on a glass surface as measured on a ZeGage profiler with ZeMaps software*

### KEY BENEFITS:

- Vibration resistant design provides robust metrology on production floor
- ISO 25178 compliant texture results ensures confidence in your metrology
- Non-contact metrology technique prevents potentially costly part damage and scrap
- Area based measurement is insensitive to part lay
- Measurements require no consumables



# Sample Measurements and System Specifications

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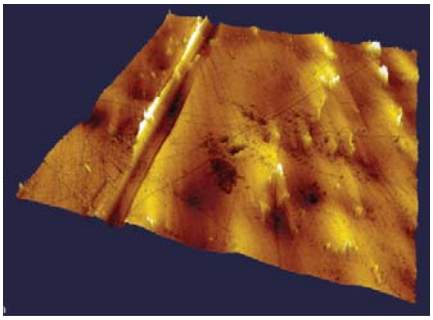
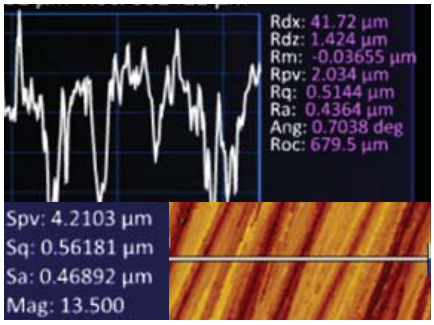
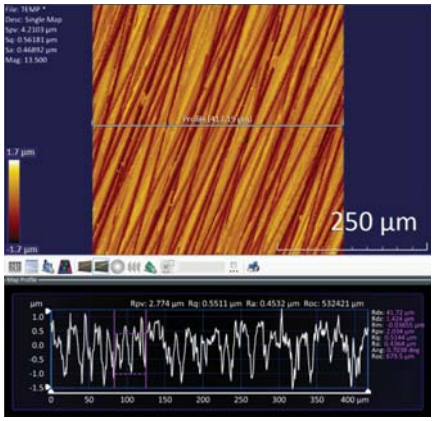


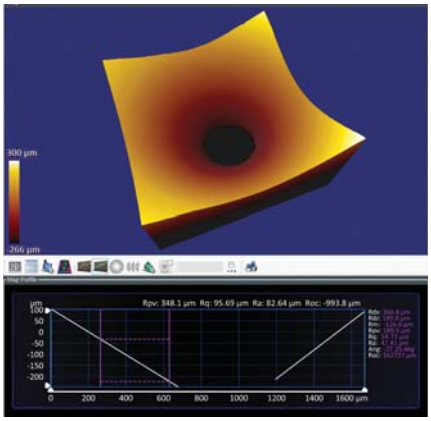
**Powerful Visualization**
Detailed three dimensional imaging of this prosthetic knee surface shows scratches and surface defects in a rotatable and zoomable model which enables easy investigation and characterization of the manufacturing process.




**Quantitative Results**
Surface results compliant with ISO 25178 and profile slice results are computed instantly for each measurement and can be tracked in real time with run charts and automatic logging features.




**Simultaneous 2D and 3D metrology**
Area profiling of this machined surface enables texture measurements independent of sample lay and line profiles can be extracted for correlation to stylus tools.



**Interactive tools**
Live updating plots enable quick analysis of the angle and texture of this 120° cone from a fuel injector.

| | |
|---|---|
| Part Number | 6301-0310-01 (Manual XY configuration)<br>6301-0310-02 (Motorized XY configuration) |
| Measurement Technique | Non-contact, three-dimensional, scanning white light interferometry |
| Objectives | 2.5X – 50X Standard Working Distance.<br>1X-10X Long Working Distance.<br>Refer to the ZeScope™ Objective Chart for objective specifications |
| Z Stage | 100mm travel.<br>Head may be mounted at either of 2 heights for optimal work volume |
| Manual XY Part Stage | Manual Tip/Tilt with ±4° adj.<br>Manual XY with 50×100 mm X/Y travel. |
| Motorized XY Part Stage | Manual Tip/Tilt with ±4° adj. Motorized XY with 100×100 mm X/Y travel. |
| XY Stage Fixture Plate | Integrated T-Slot plate for fixture attachment. |
| Vertical Scan Range | ≤ 20mm (objective dependent) |
| Data Scan Rate | ≤ 23 µm/sec |
| Maximum Data Points | 1,048,576 per acquisition. |
| Optical Resolution | 0.52 µm to 9.50 µm; objective dependent |
| Surface Topography Repeatability (per ISO/DIS 25178-604, Annex D) | < 3.5 nm |
| Step Height | Accuracy ≤ 1%.<br>Repeatability ≤ 0.3% @ 1σ. |

## For more information about ZeGage Profilers

zygo®

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