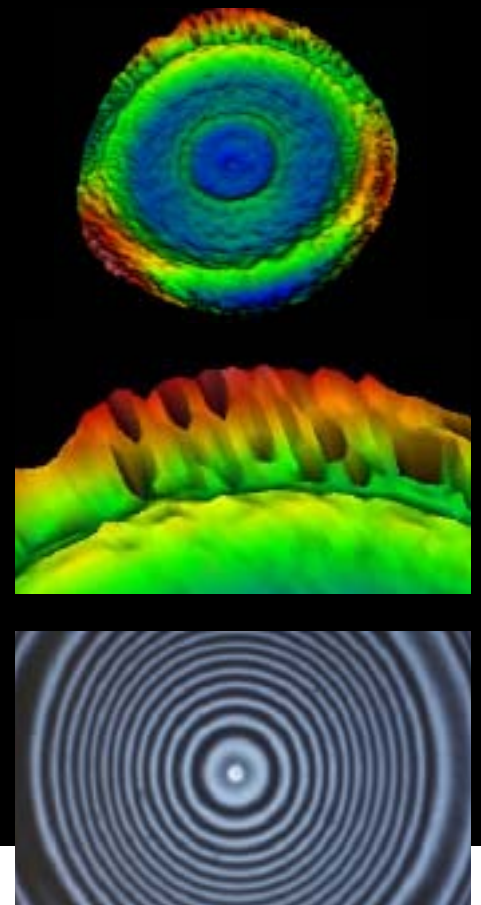


zygo®

VERIFIRE™ ASPHERE



ZYGO CORPORATION'S
VeriFire™ Asphere



Aspheric Metrology for production and process control

The VeriFire Asphere provides high resolution surface metrology for quantitative three-dimensional measurements of aspheric shaped surfaces using patented noncontact interferometric techniques for production and process control.

Based on two of ZYGO's core competencies, the patented multi-zoned metrology method provides a high resolution measurement of an aspheric surface. With multiple axes of motorized stages the VeriFire Asphere offers automated alignment, acquisition and analysis. The result is a fast, high resolution quantitative aspheric surface measurement.

- **Fast and flexible aspheric metrology**
- **Noncontact measurement maintains surface integrity**
- **Easy set-up and alignment results in excellent production throughput**
- **High resolution 3D result insures measurement of localized surface features**



The VeriFire Asphere system is a production friendly vertical workstation for noncontact high resolution optical metrology of aspheric surfaces. With its high data density measurement the VeriFire Asphere can resolve mid spatial frequency features in addition to the form of an asphere. The three dimensional result provides visibility to localized surface imperfections independent of part orientation — an important capability for insuring accurate process control.

The VeriFire Asphere system is configured with a VeriFire AT laser Fizeau interferometer and a ZMI501 displacement interferometer system. The two axes of linear displacement interferometry track the motion of the test part along the optical axis during the multi-step vertical scan with 2.5nm resolution. Configured with a high resolution 1K x 1K imaging camera the VeriFire AT Fizeau interferometer allows for over 700,000 points per measurement to be achieved with the VeriFire Asphere. The AT mainframe also offers the ability to perform high accuracy artifact-free interferometry with its Ring of Fire™ extended source. Depending on the diameter of the parts to be measured the VeriFire Asphere system can be configured with either a 4 inch or 6 inch mainframe.

The VeriFire Asphere system operates on ZYGO's industry preferred MetroPro software platform. In addition to the new aspheric metrology capability the instrument can be utilized as a vertical workstation for metrology of flats, spheres and radius of curvature measurements. The advanced software algorithms in the VeriFire Asphere utilize five axes of motorized stages to provide quick and easy alignment of an asphere. The combination of user independent part set-up and automated acquisition and analysis makes the VeriFire Asphere an ideal production metrology solution.

VeriFire™ Asphere Specifications

SYSTEM

- **Technology** Patented multi-zone interferometry
- **Interferometry** Laser Fizeau and linear displacement interferometry
- **Transmission spheres** 25 mm, 4 inch and 6 inch spheres from f/0.58 to f/11.0; custom transmission optics also available
- **VeriFire AT** mainframe with coherent artifact suppression
- **1K x 1K** digital camera
- **ZMI501** displacement interferometer with 2.5nm linear resolution
- **Vibration** isolated MetroCell vertical workstation

SPECIFICATIONS

- **Simple repeatability** ≤ 3 nm
- **Wavefront repeatability** ≤ 10 nm
- **TACT** 6-10 minutes (typical)
- **Part size** 1mm - 130mm
- **Departure from vertex sphere** $\leq R0\ 800\mu\text{m}$
- **Departure from asphere design** $10\mu\text{m}$

ZYGO CORPORATION

Laurel Brook Road
Middlefield, Connecticut 06455
Voice: 860 347-8506
Fax: 860 347-8372

www.zygo.com
E-mail: inquire@zygo.com