



Optics Metrology

Wavefront Measurement

Context

Optics world shows a tremendous growth with increasing applications for micro lenses or aspherics largely used in consumer electronics such as mobiles phones, DVD players or cameras. In addition the ophthalmic market exhibits a strong demand for contact lenses and intra ocular lenses with continuous improvements for better eye care.

The trend to miniaturization and better performance lead to new challenges for optical engineering with developments for aspherics becoming widely used for minimizing the number of elements. The design of these optics with more and more complex shape requires high precision quality control at lab, shop floor level or production line for monitoring each manufacturing step.

Technologies Landscape & Current Limitations

The main techniques available today for optics metrology include the well known interferometric and a more recent method based on Shack-Hartmann sensors.

Interferometers provide measurement at very high resolution at the expense of complexity, with setup and operation that must be handled by experts. The measurement systems remain highly sophisticated with subsequent cost and maintenance expenses during life time.

Shack-Hartman sensors perform medium resolution measurements compared to interferometers. However, as they are insensitive to vibrations and offer affordable alternative, Shack-Hartman based systems tend to replace interferometers at the shop floor level and production line.

Headquarters

2 Impasse de la Noisette

Hall B3, Suite B311

91370 Verrières Le Buisson - France

Email : contact@phaseview.com Phone > +33 9 54 03 05 43



Phaseview Digital Wavefront Technology

Digital Wavefront technology is based on recovering phase from the distribution of the energy of light. Phase extraction is achieved by a powerful and straightforward algorithm from a set of intensity images. This digital principle for phase extraction only requires standard image sensors for the acquisition, removing hardware complexity with associated cost. It offer superior resolution with number of measurement points only limited by camera resolution, without being limited by micro lens array sampling like in Shack-Hartmann based wavefront sensors.

Digital Wavefront Technology is able to deliver simultaneously the phase and intensity data in real time providing high resolution intensity images and wavefront map. The wavefront measurement is achieved with high accuracy and repeatability with a large dynamic range

More information @ www.phaseview.com/technologies

Value Added In Optics Metrology

- Wavefront aberrations measurement at high resolution
- High dynamic range
- Insensitive to vibrations
- Easy implementation in either transmission or reflection mode
- Aberrations & Surface inspection in one single device
- Smart packaging and cost effective systems

Technology Licensing

PhaseView offer licensing agreement opportunities including:

Algorithm for phase extraction from intensity images - [GetWave software](#)

Standard or custom digital wavefront cameras - [BeamWave series](#)

Custom optics metrology systems - [WaveGauge](#)

Headquarters

2 Impasse de la Noisette

Hall B3, Suite B311

91370 Verrières Le Buisson - France

Email : contact@phaseview.com Phone > +33 9 54 03 05 43