

Simply the best form accuracy when measuring aspheric and diffractive optics

Following its first release in 1984, the Form Talysurf<sup>®</sup> quickly became the number one system for optics manufacturers in measuring aspheric form error. Since then, we have installed thousands across the globe and have become a true industry standard.

Our patented PGI technology enables you to measure large sags with short length styli. This enables us to combine very high stiffness and low force offering much greater accuracy and repeatability than our competitors.

- ✓ Easy to program
- ✓ Easy to use
- ✓ Fast and accurate
- ✓ Packed with powerful analysis tools

### Traceable & repeatable results

Lens testing is made easy, with guaranteed accurate results. Automatic cresting, measurement and analysis coupled with automated spike removal and radius optimisation help to give the most repeatable results.

### The Form Talysurf<sup>®</sup> PGI Optics family

The Form Talysurf<sup>®</sup> PGI Optics offers premium optics metrology packages designed to optimise performance and enhance your manufacturing capability. We offer a large range of instrument sizes and software packages to optimise your measurement needs as well as your budget.



“Measurement of large sag lenses without compromise”

### New software tools to eliminate operator error

A sag and slope calculator is provided to allow quick check of lens drawing equation against the instrument equation to verify sign convention, while also checking for flanking conditions based on stylus/part combination.



### Applications include:

- Plastic lenses
- IR glass and crystals
- Diffractive optics
- Large diameter optics
- Small components

Gauge range

Up to 28 mm

Noise

< 2 nm Rq

Measurement

Up to 300 mm diameter

Form error

< 100 nm



## Measurable benefits

Meeting the ever increasing demands of next generation technologies

### New gauge design with improved measurement range!

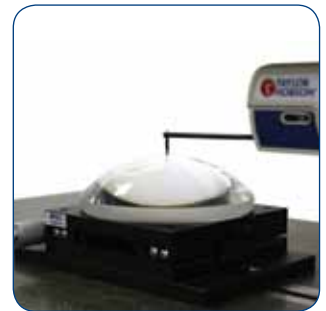
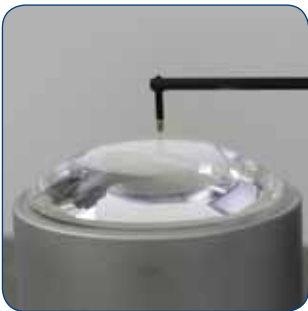
The Form Talysurf® PGI Optics large range gauge enables measurement of large sag lenses without compromise of accuracy. The latest PGI gauge will measure up to 14 mm of sag with a 60 mm long stylus and up to 28 mm with a 120 mm stylus.

### Reverse engineering

Derived co-efficient functions enable reverse engineering of aspheric and diffractive components. The user can reverse fit the raw sag data to the asphere and/or diffractive equations giving a new, as-is manufactured lens, to enable evaluation and adjustment of critical optical design parameters to improve the imaging system performance.

### Connection to manufacturing process

Our new X-offset and radius compensation algorithms enable quick and effective feedback to the manufacturing machines to improve process yields. This capability dramatically reduces set-up time for CNC grinding and diamond turning operations, and enables quick compensation for temperature drift issues throughout the day.



### Reduced costs and improved manufacturing yields

The Form Talysurf® PGI Optics new easy-to-use interface and automated analysis reduces labour and training costs. Common mobile phone lenses and commercial optics can be quickly measured and analysed automatically with robust algorithms to improve repeatability and accuracy giving numbers you can trust, every time.

### Improve your competitiveness

With the Form Talysurf® PGI Optics' accuracy and flexibility your products could improve in quality and deliver more repeatable performance. With the option for derived fitting of aspheres and diffractives, the true form derivation you can receive will add valuable feedback to your design team.

## Versatile, high resolution freeform measurement system

The new Form Talysurf<sup>®</sup> PG Freeform is a versatile, high resolution system dedicated to the measurement of high precision freeform optics. Providing 3D raster / radial measurement and analysis of:

- Spheres
- Aspheres
- Diffractives
- Freeforms

The Form Talysurf<sup>®</sup> PG Freeform can work with many of the latest equations used for definition of freeform surfaces such as:

- Toric
- Bi-conic
- Anamorphic asphere
- Ellipsoid
- NURBS
- Zernike
- Cloud of points

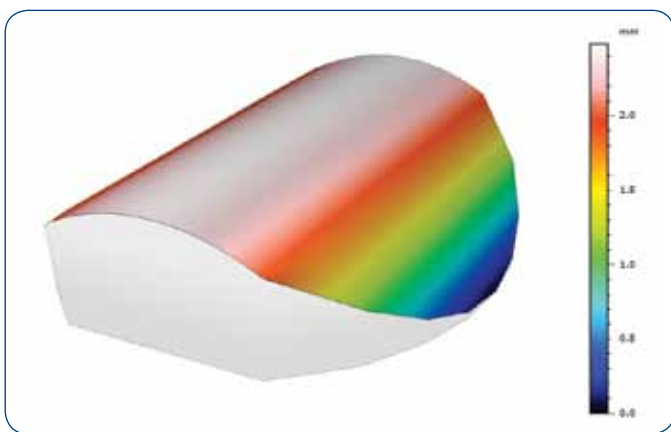
### Measurement integrity and reproducibility

Taylor Hobson's Form Talysurf<sup>®</sup> PG Freeform is underpinned by decades of measurement experience, ultra-precision manufacturing expertise and FEA optimized design. These provide low noise and near flawless mechanical execution of the measuring axes.

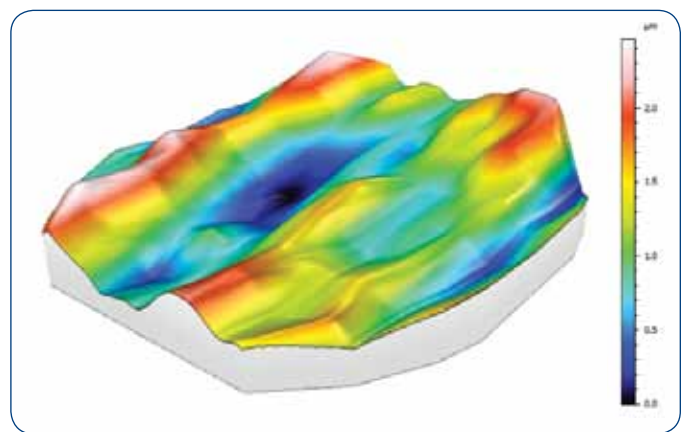
With the new dedicated software interface, accurate freeform measurements are easy to set-up and analyse. The versatility of the Form Talysurf<sup>®</sup> PG Freeform makes it the complete optics metrology solution.



“Accurate measurements of true freeform surfaces”



Raster scan of freeform optic



Form error of freeform optic

**Gauge range**

Up to 28 mm

**Resolution**

0.8 nm

**Slope**

Slope up to 55 degrees

**Contour**

Low Form Error