

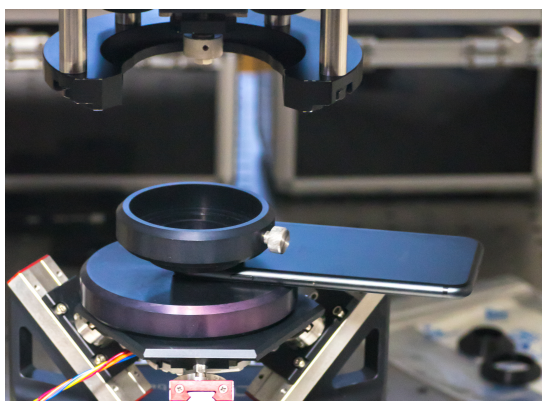
Camera glasses

iPhone vs Samsung

In 5 seconds, determine the quality of a glass with world record accuracy.

Problem

Demand for high quality photography using a smartphone is growing, which is partly triggered by high resolution displays. In last few years, photo quality has been improved electronically, whereas the quality of optics, which is fundamental to photography has been ignored. Minor variations even in the inbuilt protective cover glass can already reduce photo quality. But accurate testing of optics is not as straightforward neither for a manufacturer to verify nor for a supplier to quality control.

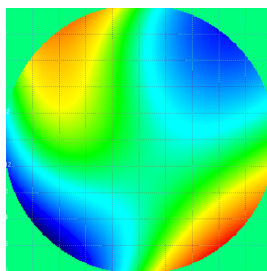


iPhone 7 put on the measurement stage of D7 directly to quality control cover glasses and optics.



Example

Our device, D7 found that the inbuilt glass on the top of iPhone 7's back camera distorts the photo and reduces its effective resolution. The glass on Samsung Galaxy S5 which 1/3 of the price is the least intrusive. This means **D7 can help determine a cheaper yet highest quality parts.**



Wavefront emanating from the cover glass of iPhone 7

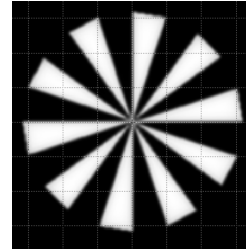
$PV = 0.084\lambda$

$RMS = 0.017\lambda$

Relatively good

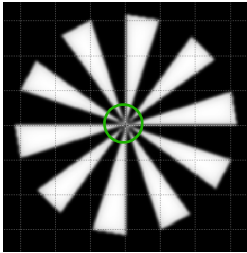
Which has the best glass?

We investigated how Siemens star, a test structure is aberrated by the influence of their inbuilt cover glass.



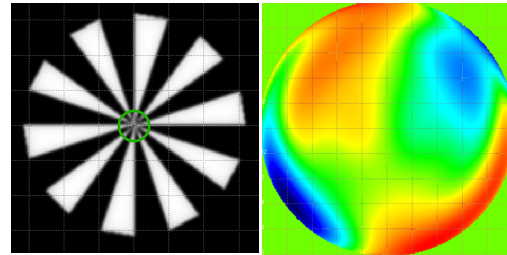
Siemens star, the test structure

iPhone 7



There is some loss in resolution, as indicated by relatively good wavefront image.

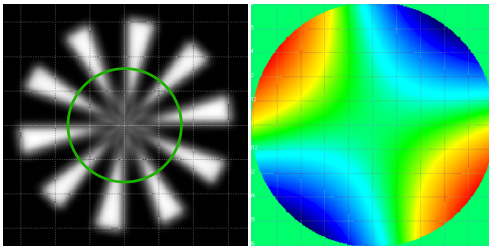
Samsung Galaxy S5



$PV = 0.0231 \lambda$
 $RMS = 0.004 \lambda$

There is very little loss in resolution, as indicated by excellent wavefront image

Samsung Galaxy S6



$PV = 1.42 \lambda$
 $RMS = 0.29 \lambda$

Strong astigmatism, probably cover glass in mechanical stress. **The worst!**

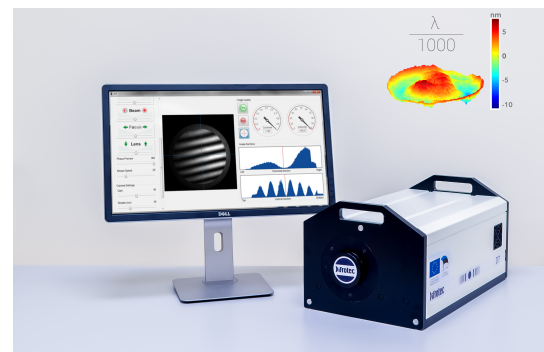
Our solutions

D7, our flagship laser interferometry device can see the surface form of optical parts, single lens, cover glasses, objectives with multiple elements in few seconds with sub-nanometer accuracy. It gives a direct measure of resolution, aberration, anomalies from the specification and manufacturing defects.

Product, D7

For ultra high accuracy optical metrology at high speed. Which is ready for measurements out of the box.

Check out our brochure for detailed specification and use cases.



Our standalone interferometer device with control and analysis software. Easy to install and quick to measure.

Services

- Optical surface quality of glasses, including freeforms and aspheres.
- Determine aberrations and resolving capacity of objectives before procurement and deployment