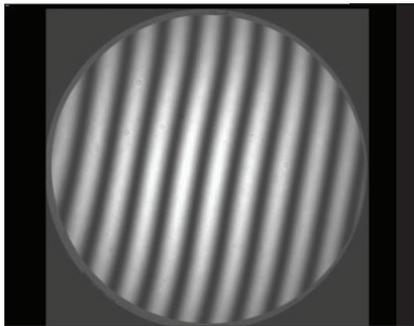


Metrology in Production Environments

QPSI™ Data Acquisition

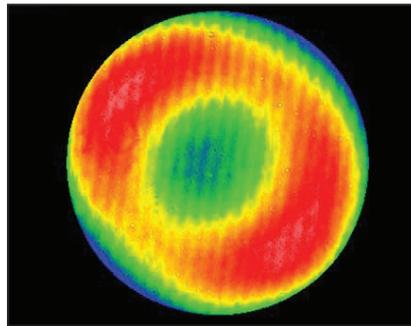
Phase-shifting interferometry (PSI) is the gold standard in optical metrology; it is widely used for precision measurements of optical surface form and profiling. However, PSI is susceptible to errors caused by environmental influences. The desire to have metrology in the production work cell can be challenging due to vibration generated by optical manufacturing equipment. This often limits the ability to perform accurate phase shifting acquisition requiring a user to either accept a less accurate visual interpretation method or use an expensive and more complex dynamic solution.

To solve this problem, ZYGO has developed QPSI, an easy to use vibration robust acquisition solution that maintains the accuracy of a true-Fizeau interferometer configuration. Combined with a complementary hardware configuration, the patented QPSI algorithm quantifies the rigid body motion of the cavity and compensates for the vibration in each subsequent acquisition. This allows each frame to be individually validated, eliminating the dependency that occurs in traditional PSI where all frames of a multi-bucket acquisition must occur in a sufficiently stable environment.



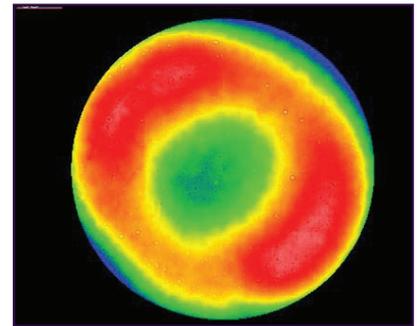
Live Display

Live display shows the presence of several tilt fringes.



PSI

Using PSI, vibration can cause fringe print-through on the data.



QPSI Solution

QPSI eliminates ripple and print-through without vibration isolation.

Who should use QPSI-equipped interferometers?

QPSI provides an easy to use method that enables accurate and cost effective surface form metrology on the production floor. This patented technique is the only vibration robust, true-Fizeau solution that allows for phase measuring acquisition in vibration prone environments – in most cases without the need for an isolation table.

With over 50 years of metrology experience, Zygo Corporation continues to strengthen its reputation as the world's premier suppliers of non-contact optical measuring instrumentation.



Data subject to change without notice.

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