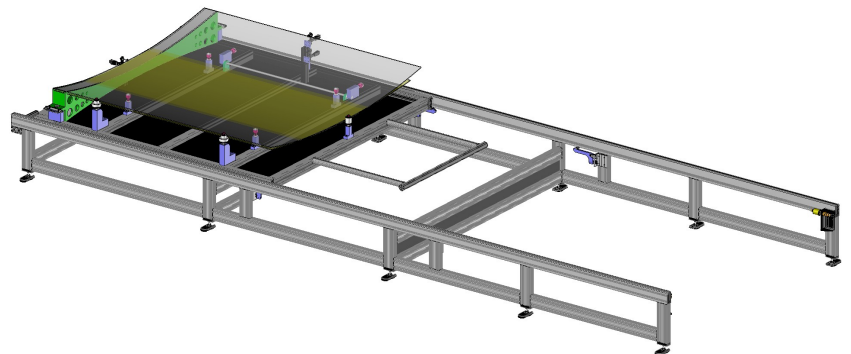
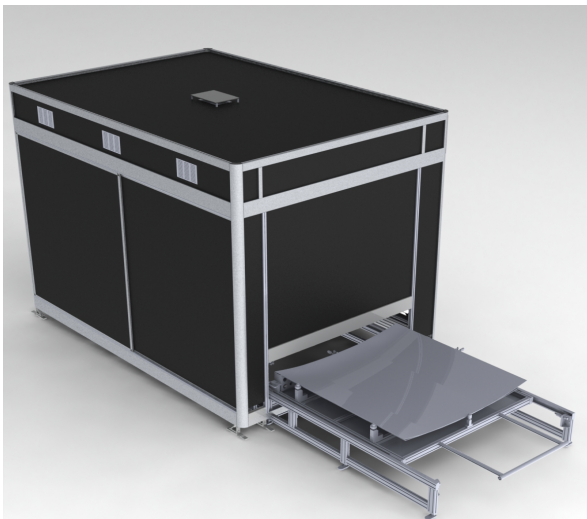


Mirror quality control

Today's concern for the preservation of our planet is pushing the development of solar power plants around the world. In these plants, the quality of the mirrors is a critical feature, but the size of the individual mirrors makes their quality control problematic for flat, cylindro-parabolic and full parabolic shapes.

Qualisurf-R makes this quality control easy and fast.

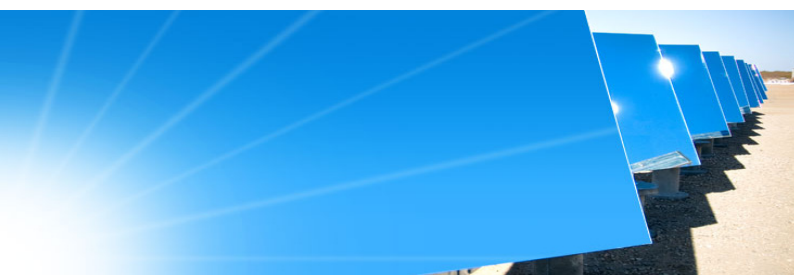


QualiSurf-R for solar applications

QualiSurf -R for solar applications is a deflectometry based solution and is able to measure the entire surface of flat or cylindro-parabolic mirrors as well as full parabolic concentrators in a **few milliseconds**. The equipment is suitable for laboratory and production environments. A 100 % production control can be achieved with our fully automated equipment.

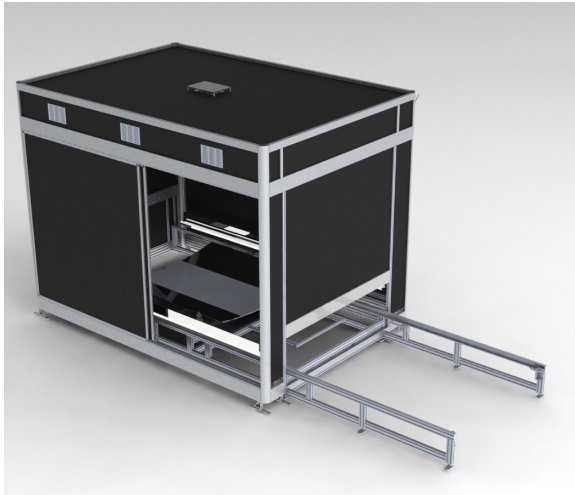
The system measures the deviation of all reflected rays from the target (the boiler in tower-type plants or the focal tube in parabolic trough fields). Thus the proportion of overall collected rays is known for each mirror, allowing a quantitative estimate of its efficiency.

Deflectometry allows QualiSurf-R for solar applications to meet the accuracy specifications of real applications. These specifications are best expressed in terms of slope measurement resolution. Typical values for QualiSurf are below **15 μ rad**. These can be adapted to meet individual customer requirements.

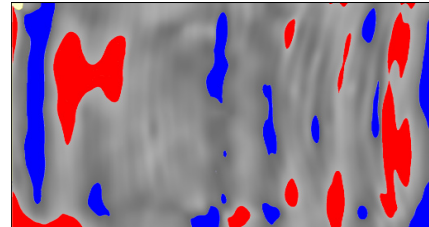


System overview

A periodic grid pattern located on the ceiling of the test enclosure is reflected by the surface being tested. The reflected image is captured by a high resolution camera. Based on its powerful calculation algorithms QualiSurf-R is able to quantify the local mirror slope and the consecutive ray target error.

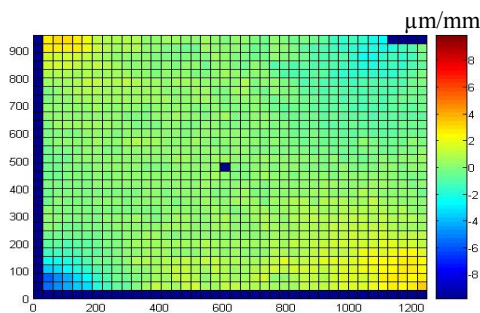


Measuring system



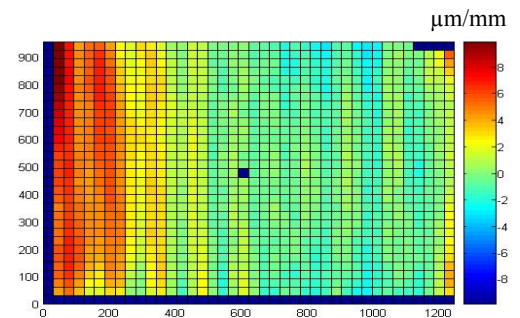
Ray target deviation map, showing out-of-spec areas

Deflectometry slope maps - comparison with CMM measurements (x & y in mm)

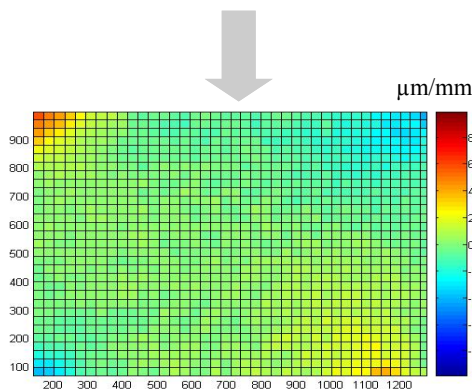


First sample

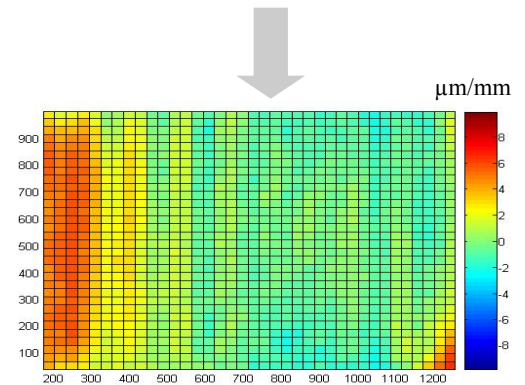
QualiSurf - R
for solar applications



Second sample



CMM measurements
expressed as slope maps



EOS Technologies Inc.
2032 E. Square Lake Rd., Suite 500
Troy, MI 48085
Ph: 248.828.1900
Fax: 248.828.1902
www.eosti.com