



# Flatness and curvature measurement system based on HOLOMAP Technology

## HOLOMAP Technology

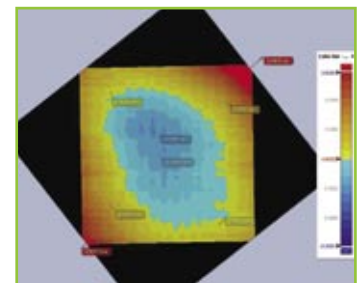
This patented technology is dedicated to the measurement of any shiny reflecting surface. It is an all optical technology that allows in a very short time (a few seconds) a complete measurement of 3D shape of a glass plate, a mirror, a wafer or a lens with a very high accuracy.

It is based on imaging technique. A camera is viewing a pattern (for instance a grid) by reflection on the object to be studied. The grid is deformed by the non-flat surface of the object. The image processing allows transforming the deformed grid into quantified information of the local slopes of the surface as well as XYZ coordinate. The standard equipment is composed of a grid, a light source, a camera, and a computer for the data processing.

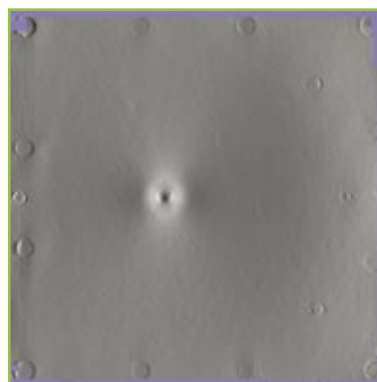
## Applications



*Difference between measured points and a perfect sphere (mm)*



*Difference between measured points and a perfect plane (mm)*



*Tiny defects of a plastic cover*



*Curvature measurement of a concave mirror*

# HOLOMAP®

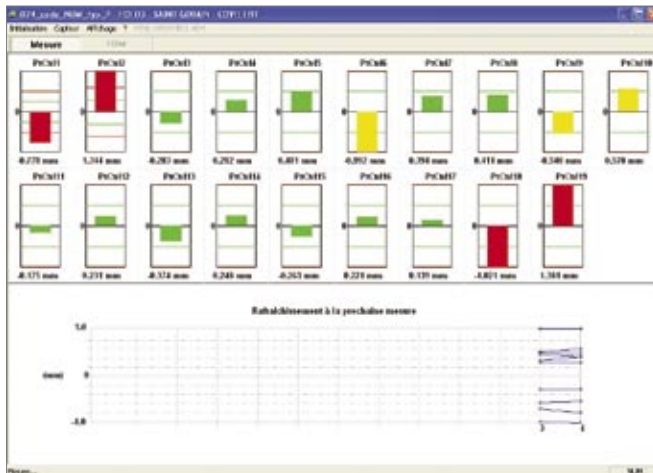
A 3D measurement machine based on the HOLOMAP technology

## Technical Features :

- Measured surface size = 50 x 30 mm
- Number of measured points = 1 million
- Measurement time = 10 seconds
- Estimated uncertainty ( $2\sigma$ ) = 0,7 $\mu$ m

## COVELI Software

The COVELI Software that is driving the system may be used either for single measurement in a metrology laboratory, or for online control.



Real time display of the measurement with COVELI software

When using online control configuration, a first step consists of defining the object to be measured (CAD file) and the specific points that need to be controlled. Then, measurement is automatic and is done every 7 seconds.

The main output results of the software are :

- ASCII cloud of 3D points
- ASCII value of normal vectors
- Deviation regarding CAD file
- Deviation regarding a reference surface
- Go / no go based on part tolerances.

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