



**DIGITAL FIZEAU  
INTERFEROMETER**



### ***SILO 100 AV***

Gestione Silo srl has developed a new vibration insensitive, 100mm diameter aperture, direct phase, digital Fizeau interferometer for metrology.

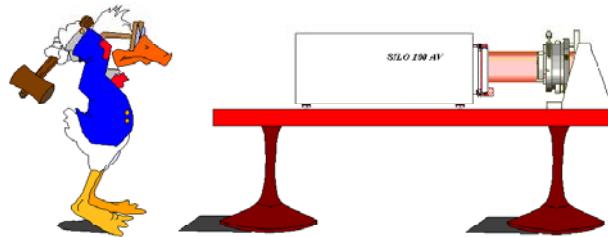
***SILO 100 AV*** is a Fizeau interferometer suitable to a wide range of measurements on specimens up to 100mm ( $\approx 4''$ ) diameter. It offers a rapid and accurate method for the optical measurement of surface quality within vibration-unprotected environments too.





◇ **AV stands for anti-vibrations:**

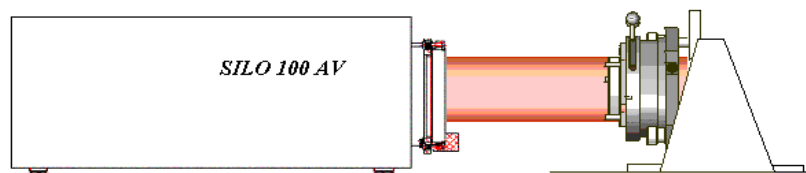
**A Stable Instrument that guarantees Accurate and Repeatable Measurements**



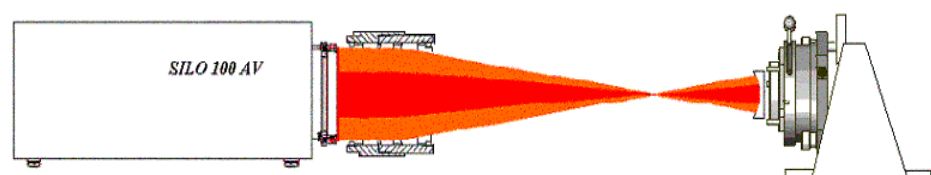
The fringe analysis is performed with a *Spatial Carrier Phase Shifting* technique (SCPS) with a very short acquisition time ( $\cong 1\text{ms}$ ) working on a single interferogram. Fringes are therefore frozen in all working conditions and do not wash out even in the presence of strong vibrations. The data processing is very fast. The phase is recovered with high accuracy with standard equipment. The instrument can work in unprotected environments, that is in presence of mechanical vibrations and air turbulence in the measurement cavity.

### ◇ Measurements features

The instrument can be placed on horizontal tables but in vertical position as well. Four adjustable feet allow correct positioning on any kind of table and the robust screws allow vertical clamping. *SILO 100 AV* allows measurements on optical flats up to  $100\text{mm}$  diameter, and measurements on spherical surfaces by using reference spheres. Testing of lenses and prisms is also possible.



Testing optical flats.

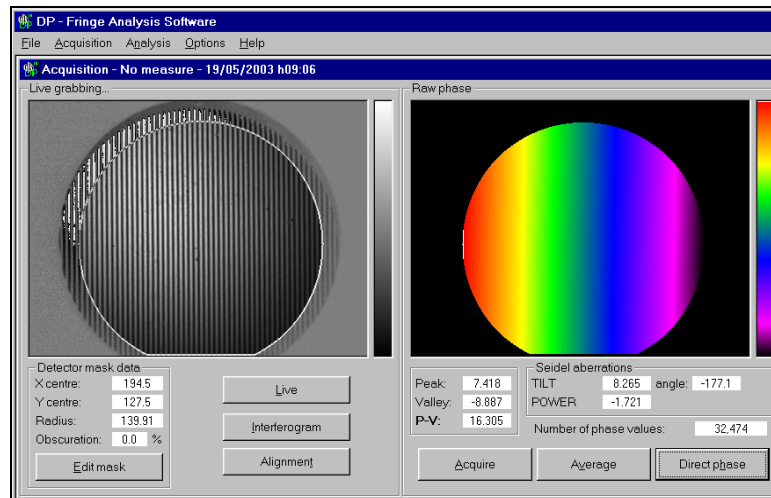


Testing spherical surfaces.

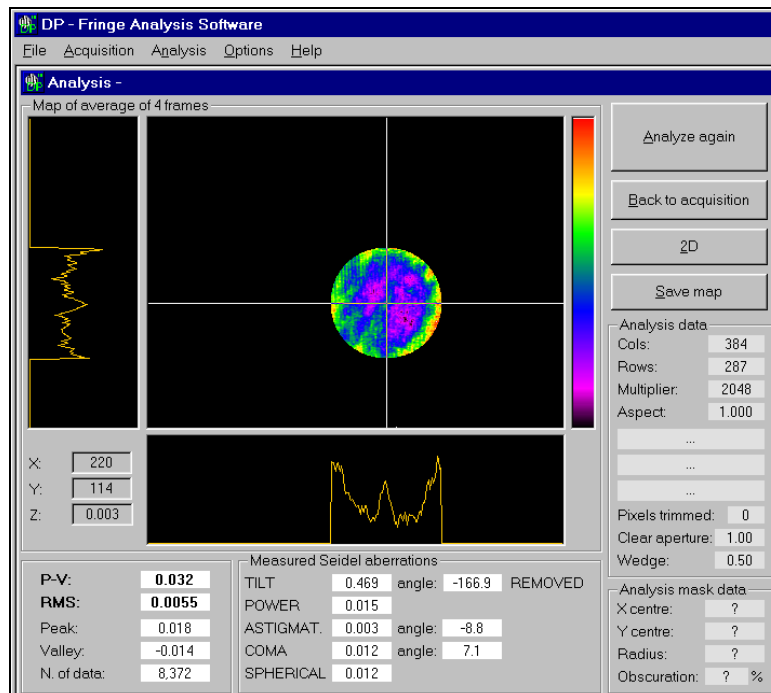


### ◇ Analysis software

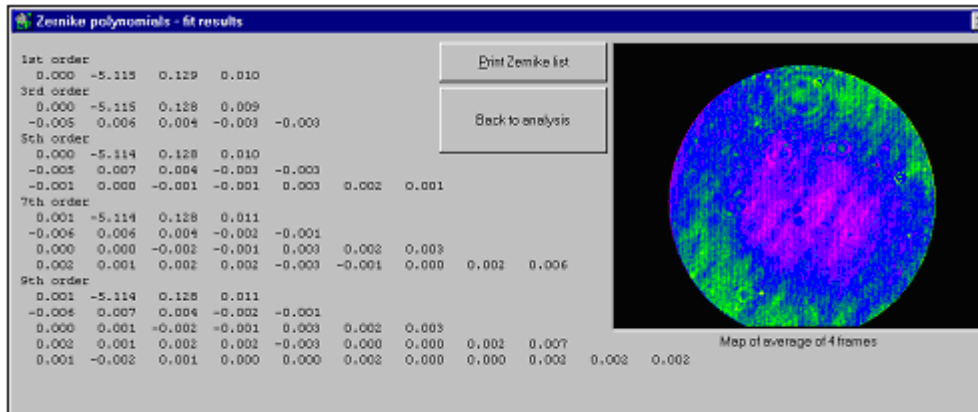
The interferometer is driven by a suitable software that permits power measurements, spherical aberration, astigmatism, and coma evaluations.



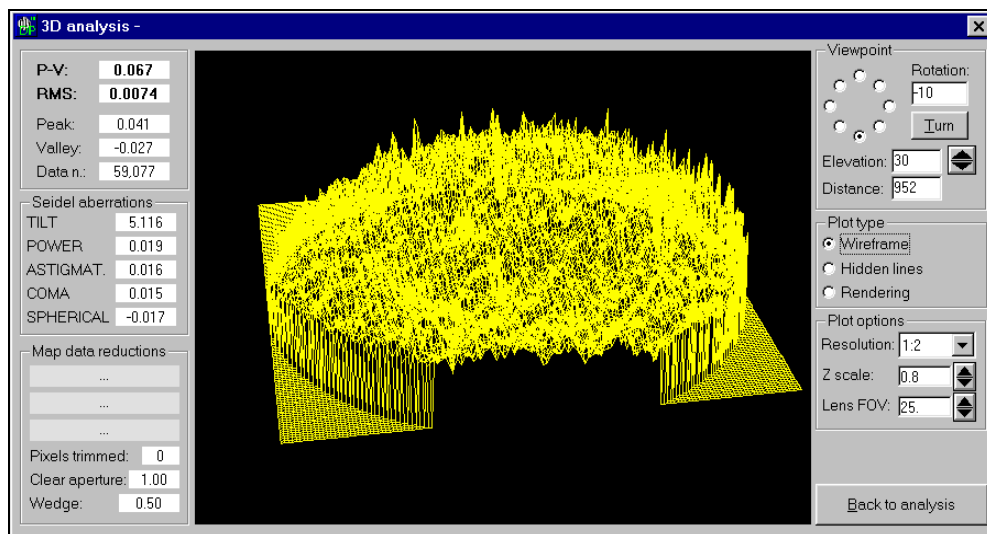
The acquisition of the interferogram.



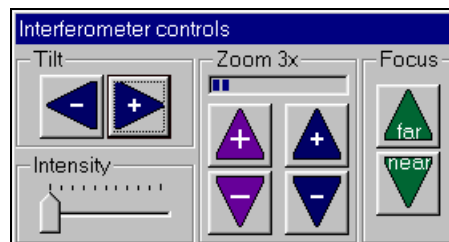
The analysis of the interferogram.



Wavefront fitting through Zernike Polynomials is possible.



Surface rendering complete the visualization of the surface shape.



Fringe image magnification, tilt and focus are all completely managed by software.

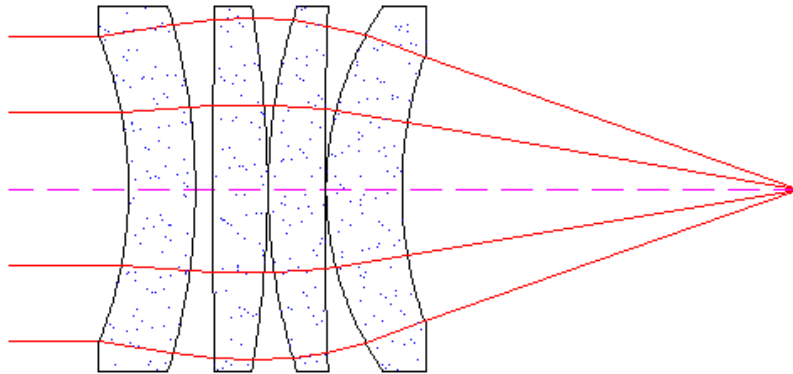


### ◇ Set of accessories and options

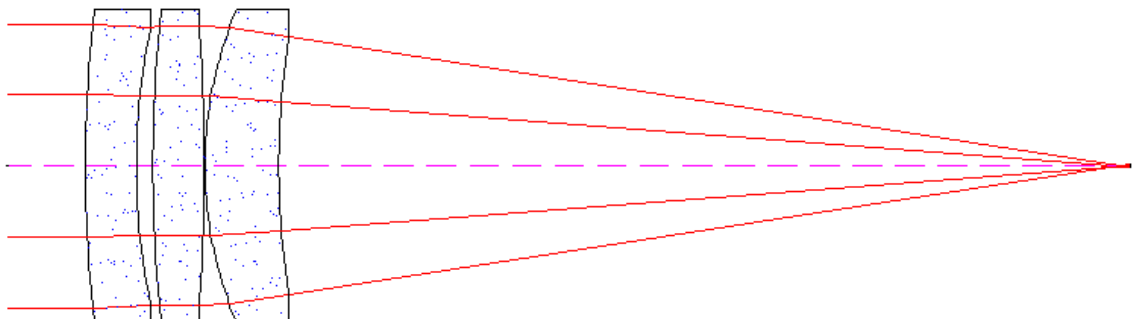
Gestione SILO srl produces its own reference transmission and reflection flats and reference spheres, and beam expander 2X.

Reference flats are made from high-stability materials with surface accuracy of  $\lambda/20$ . Custom solutions are also possible on request.

#### Reference sphere F/1.5



#### Reference sphere F/3.3





### ◇ SILO 100 AV specifications

Type:	Fizeau
Max Sample Size:	100mm
Working conditions:	no need of an air table
Surfaces measurements:	plane and spherical surfaces (using reference spheres)
Accuracy:	$\geq \lambda/10$ PV ( $\lambda/60$ rms)
Repeatability:	$\geq \lambda/50$ PV ( $\lambda/300$ rms)
lifetime:	$\geq 10$ years
Laser Source:	1.0mW stabilized He-Ne laser
Source coherence length:	150m
Alignment feature:	the instrument has two cameras: one is devoted to alignment
Power supply:	220V, 50Hz or 110V, 50Hz
Depth:	552mm
Width:	365mm
Height:	180mm
Weight:	approximately 20Kg