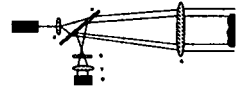




Institute of Unique Instrumentation  
Russian Academy of Sciences

## LASER STABLE INTERFEROMETER WITH DIFFRACTION OPTICS COMPONENTS

Interferometer is intended for non-contact routine monitoring of reflecting surfaces geometry and may be used for indication of bending, deformation and unflatness of the surface under control.



### APPLICATIONS:

- for control of surface quality of polished optical components (in Optical Instrumentation);
- for control of unflatness of silicon wafers for manufacturing of large integrated microcircuits (microelectronics);
- for control of quality of reflecting surfaces of industrial workpieces and rolled stock sheets (Instrumentation and Metallurgy).



### INTERFEROMETER ENSURES:

- low level of vibration noises;
- maximum available for deformation measurements surface size of 200  $\mu\text{m}$ ;
- maximum diameter of tested by one frame surface of 200 mm with resolution of 0.4 mm;
- accuracy of unflatness parameters determination being equal to the wavelength of testing radiation;
- analysis time of one surface in a matter of minutes;
- tolerable surface roughness no more than light wavelength.



### INTERFEROMETER COMPRISES:

- He-Ne laser 10 mW,
- optical system of stable Fizeau interferometer with diffraction optics components,
- photo-receiving device (charged connection device or TV-camera) dependent personal computer.



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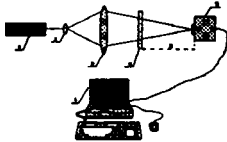
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## LASER ANALYSER OF MICROPARTICLES



Microparticles analyser is meant for non-contact routine determination of distribution function of microparticles on sizes.

### APPLICATIONS:

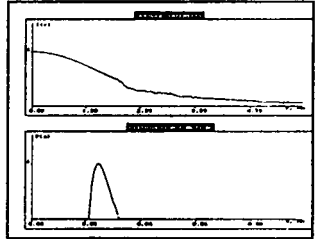
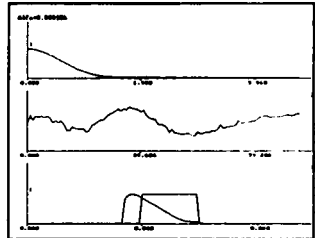
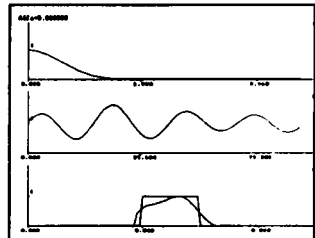
- for investigation of exhausting gases fluxes (in Engine-building);
- for analysis of aerosols and trickle fluxes (in chemistry and meteorology);
- for investigation of micro-organisms populations and blood composition (medicine science).

### MICROPARTICLES ANALYSER INCLUDES:

- He-Ne laser 10 mW;
- wave length - 0.63  $\mu\text{m}$ ;
- optical system of Fourier analyser;
- linear or ring-like photo-receiver connected with personal computer.

### ANALYSER ENSURES:

- available for measuring microparticles diameter minimum of 10  $\mu\text{m}$ , maximum - 500  $\mu\text{m}$ ;
- deviation of computed distribution function on sizes from true value exceeds no 30% ;
- analysis time depends on microparticles flux speed and exceeds no several minutes;
- for non-spherical micro-particles distribution function is being determined by them effective radius.



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