

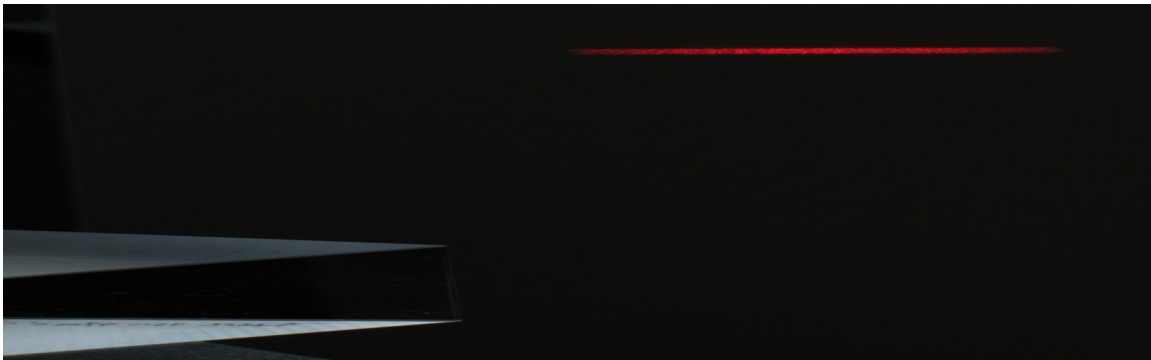


# N-Slit Laser Interferometer

Interferometric Optic's N-Slit Laser Interferometer (NSLI) applicable to:

- Assessment of transmission gratings and optical surfaces
- Detection of clear air turbulence
- Interferometric imaging
- Interferometric metrology and microdensitometry
- Interferometric microscopy
- N-slit interference
- N-slit interferometry
- Secure interferometric communications

Based on multiple-prism beam expansion and digital detection the N-slit interferometer allows for the rapid interferometric characterization of *transmission optical surfaces in general*. A significant advance over traditional point-by-point incoherent microdensitometers and point-by-point incoherent microscopes.



Extremely elongated Gaussian beam (with a 30  $\mu\text{m}$  height, at its center, and a 60000  $\mu\text{m}$  width) used as illumination source in the NSLI. The last stage in the multiple-prism beam expansion array is shown at the lower left. Note: the beam in this image appears much higher due to saturation in the detector array capturing the image.

Further specific applications include:

Characterization of arrays of micro holes and/or micro nozzles  
Characterization of biomedical and organic molecular arrays  
Characterization of crystalline surfaces  
Characterization of molecular, and digital, imaging surfaces  
Characterization of textiles  
Detection of clear air turbulence at airport's runway thresholds  
Forensic science  
Optical metrology of surfaces and transmission gratings  
Secure space-to-space interferometric communications

### NSLI Specifications

Model	Wavelength	Beam dimensions <sup>†</sup>	S/N
NSLI-543-1	543 nm	30 × 25000 μm	~10 <sup>7</sup>
NSLI-543-2	543 nm	30 × 50000 μm	~10 <sup>7</sup>
NSLI-594-1	594 nm	30 × 25000 μm	~10 <sup>7</sup>
NSLI-594-2	594 nm	30 × 50000 μm	~10 <sup>7</sup>
NSLI-632-1	632 nm	30 × 25000 μm	~10 <sup>7</sup>
NSLI-632-2	632 nm	30 × 50000 μm	~10 <sup>7</sup>

<sup>†</sup> At focal plane. The wider dimension is along the plane of propagation.

<sup>††</sup> NSLI are manufactured with all US made optical components. Prices apply to laboratory size units. Larger NSLI, with intra interferometric lengths up to 30 m, and additional beam dimensions, available on request.

## Literature

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