

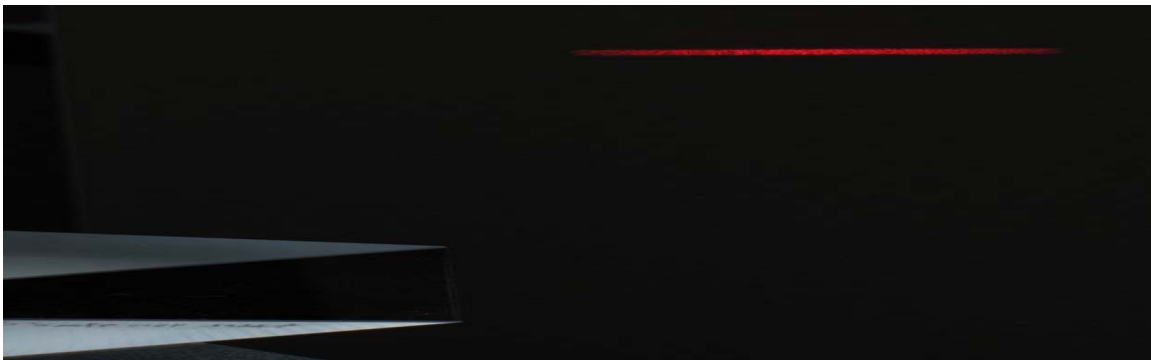


N-Slit Laser Interferometer

Interferometric Optics introduces its *N*-Slit Laser Interferometer (NSLI) applicable to:

- Assessment of transmission gratings and optical surfaces
- Interferometric imaging
- Interferometric microdensitometry
- Interferometric microscopy
- *N*-slit interference
- *N*-slit interferometry

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 μm height, at its center, and a 60 mm 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.

Specific applications include the *rapid characterization* of:

Arrays of micro holes and/or micro nozzles
Biomedical and organic molecular arrays
Crystalline surfaces
Molecular, and digital, imaging surfaces
Optical surfaces
Textiles
Transmission gratings

NSLI Specifications

Model	Wavelength [†]	Beam dimensions [†]	Approximate nominal resolution ^{††}	S/N
NSLI-543-1	543 nm	30 × 2500 μm	10 μm	~10 ⁷
NSLI-543-2	543 nm	30 × 5000 μm	10 μm	~10 ⁷
NSLI-594-1	594 nm	30 × 2500 μm	10 μm	~10 ⁷
NSLI-594-2	594 nm	30 × 5000 μm	10 μm	~10 ⁷
NSLI-632-1	632 nm	30 × 2500 μm	10 μm	~10 ⁷
NSLI-632-2	632 nm	30 × 5000 μm	10 μm	~10 ⁷

[†] Approximate value. The wider dimension is along the plane of propagation.

^{††} Quoted along the plane of propagation. Allows for the use of several pixels to resolve a given feature in the near field. As explained in the references, resolution can be enhanced, via quantum interferometric calculations, into the submicrometer or nanometer regime.

Literature

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Applications note released on 2008/04/21
Applications note updated on 2010/06/22
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<http://www.opticsjournal.com/NSLI.pdf>
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