

SPECTRALLY CONTROLLED INTERFEROMETRY

The SCI source can be added to any S-Series interferometer.
This specification sheet outlines the host interferometer enhanced performance with the addition of SCI.

System Overview

Description	Standard Fizeau Interferometer with external SCI source Measures surface form, angles and transmitted wavefront
Data Acquisition	Electronic Vibration Tolerant Phase Shifting, down to 100 μm thickness
Polarization of Interferometer	Typically circular

Source Overview

Description	Proprietary, coherence controlled illumination, external to interferometer
Wavelengths available	660 nm (other wavelength possible)
SCI source feed	Fiber Optic 3 meters nominal
Weight	7 kg (15.4 lbs)
L X W X H mm (inch)	275 X 250 X 160 (11 X 10 X 6.3)

Typical Applications of a Laser Fizeau Interferometer with SCI Source

Plates/Windows/ Waveplates

- ▣ Front and back surface form and midspatial frequencies
- ▣ Total Thickness Variation (down to 100 μm thin)
- ▣ Thickness
- ▣ Wedge
- ▣ Transmitted Wavefront
- ▣ Homogeneity

Prisms, Any size >100 μm per side

- ▣ Face flatness (in some cases multiple faces in one setup)
- ▣ Transmitted wavefront
- ▣ Hypotenuse flatness
- ▣ Face parallelism
- ▣ Homogeneity

Performance: SCI Interferometer

Imaging Specifications (Resolution, Distortion, Field Flatness)	Host interferometer system dependent ¹
Slope Acceptance/Accuracy (Fringe Resolution & Retrace Error)	Host interferometer system dependent ¹
Repeatability/Accuracy	Host interferometer system dependent ¹
Coherence align mode	>5 meters
Range of Operation	0.5 mm to 350 mm
Minimum Internal Fizeau Thickness²	350 μm
Surface Isolation (Front or Back)	100 μm

Environment

Temperature	15°C to 30°C (59°F to 86°F)
$\Delta T/\Delta t$	<1.0°C/15 minutes
Humidity	5 to 95% relative, noncondensing

Specifications subject to change without notice.

¹ The performance of these interferometer specifications depends on the optical design of any specific system. Please refer to the host interferometers specification sheet, no degradation will occur due to the addition of the SCI source.

² SCI can acquire phase shifted data in a fixed etalon (plane parallel plate) down to 350 μm thin. This is useful for wave plate and thin window and prism metrology.