SPECTRALLY CONTROLLED INTERFEROMETRY

The SCI source can be added to any interfeormeter; APRE's S-Series are SCI ready
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, no thickness limitations
Polarization of Interferometer	Typically Circular

Source Overview

Description	Patented, coherence controlled illumination, external to interferometer
Wavelength	660 nm (other wavelengths possible)
SCI Source Feed	Fiber Optic, 3 meters long, 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 mid-spatial frequencies
- Total Thickness Variation to 150 µm OPL, thinner possible
- Thickness
- Wedge
- Transmitted Wavefront
- Homgeneity

Prisms, any size > 100 µm per side

- Face Flatness (in some cases multiple faces in one step)
- Transmitted Wavefront
- Hypotenuse Flatness
- Face Parallelism
- Homogeneity

Performance: SCI Interferometer

Imaging Specifications (Resolution, Distortion, Field Flatness)	Host interferometer system dependent[2]
Slope Acceptance/Accuracy (Fringe Resolution & Retrace Error)	Host interferometer system dependent[2]
Repeatabiity & Accuracy	Host interferometer system dependent[2]
Coherence: Align Mode	> 5 meter
Range of Operation	0.5 mm to 500 mm
Minimum Internal Fizeau Thickness[3]	350 µm (OPL)
Surface Isolation (front to back)	150 µm (OPL) [Thinner is possible on special request]

Environment

Temperature	15°C to 30° C (59°F to 86°F)
ΔT/Δt	<1.0°C/15 minutes
Humidity	5% to 90% relative humidty (non-condensing)

Specification subject to change without notice

[1] Spectrally Controlled Interferometry can be added to any ÄPRE S-Series interferometer. Please contact ÄPRE for details.

[2] The performance of these interferometer specifications depends on the optical design of specific system. Please refer to the host interferometer specification sheets for details.

[3] SCI can acquire phase data in a fixed etalon (plan parallel plate) down to 350 µm. This is useful for waveplate, thin window and prism metrology