

Peak performance Laser Fizeau Interferometers

- ▶ Diffraction limited, flat field imaging, with <0.1% distortion
- ▶ $<\lambda/20$ retrace accuracy at 500 fringes tilt

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Laser Fizeau Interferometers: Measure surface form, mid-spatial frequencies, and transmitted wavefront

System Overview

	S50 HR	S100 HR	S150 HR
Output Diameter	51 mm (2 inch)	102 mm (4 inch)	153 mm (6 inch)
Optical Centerline from table	108 mm (4.25 inch)	108 mm (4.25 inch)	133 mm (5.24 inch)
Focus Range	±2 meters	±2 meters	±4.5 meters
Size (L x W x H)	63 x 29 x 18 cm (24.8 x 11.4 x 7 inch)	70 x 32 x 25 cm (27.6 x 12.6 x 9.8 inch)	90.2 x 40.8 x 23.9 cm (35.5 x 16.1 x 9.4 inch)
Weight	25 kg (55 lbs)	33 kg (73 lbs)	50 kg (110 lbs)
Measurement Techniques	Traditional Phase-shifting, Vibration Tolerant Phase-shifting AND Vibration Insensitive Carrier Fringe (Wavelength Shifting option available)		
Alignment System	2-spot with reticle with 2° capture range		
Laser Source	Frequency Stabilized, SLM 633 nm HeNe (multiple power and λ options)		
Laser Frequency Stability	<0.0001 nm		
Coherence Length	>100 m		
Output Polarization	Circular		
Camera Resolution	2044 X 2044 pixels		
Shutter Speed – shortest	9 μ s		
Digitization	12 bits		
Computer & Software	High-Performance PC, running Windows® 64-bit OS, and REVEAL software		
Mounting Configurations	Horizontal or Vertical		
Accessories	Industry standard bayonet		

Performance

Image Resolution (Detector Limited)	50 μ m	100 μ m	150 μ m
Image Distortion	<0.1% over entire focusing range		
Image Field Flatness	<30 μ m (worst case) @ 2 meters part distance		
Fringe Resolution	Carrier Fringe: 500 fringes/aperture PST & VTPSI : 650 fringes/aperture		
Retrace Error @ 500 Fringes¹	< $\lambda/20$		
RMS Simple Repeatability²	<0.5 nm RMS 2σ – with NO averaging		
RMS Wavefront Repeatability³	<0.5 nm RMS 2σ – with NO averaging		
Measurable Part Reflectivity	0.5% to 40% (direct) and 41% to 100% (with attenuation filter or coatings)		

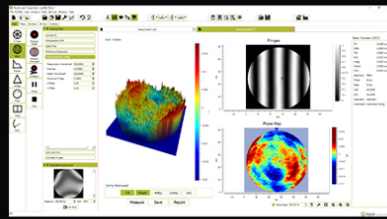
Environment

Temperature	15 °C to 30 °C (59 °F to 86 °F)
$\Delta T/\Delta t$	<1.0 °C/15 min
Humidity	5 to 95% relative, non-condensing
Vibration Isolation	Isolation System recommended for PSI & VTPSI

¹ Retrace Error is defined as the residual error between a no tilt fringe (null) measurement (the reference), subtracted from a measurement with 500 fringes of tilt, with only the first 36 Zernike polynomials reported

² RMS Simple Repeatability is defined as 2X the standard deviation of the RMS for 36 sequential measurements (0 averages) of a short plano cavity

³ RMS Wavefront Repeatability is defined as the mean RMS difference between a synthetic reference (defined as the average of all 36 sequential measurements) and each measurement plus 2X the standard deviation



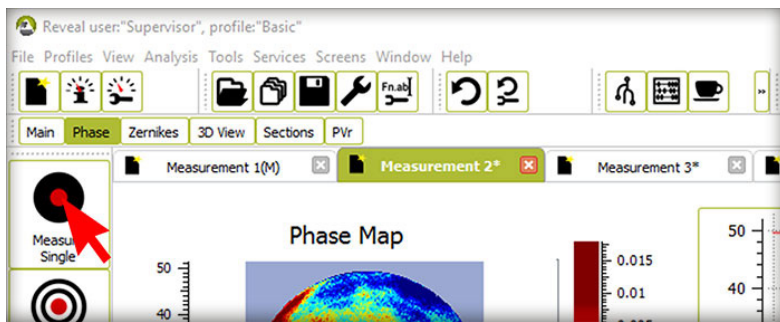
- Measure to custom report in <10 seconds
- Directly interface to OEM interferometers
- Windows® 64-bit Operating System

REVEAL shows you meet the specification. And then reports the data your customer wants.

The best software doesn't get in the way. It has all the analyses required, and yet is flexible because your customers have different specs and reporting needs. This is REVEAL.

Moves into the future without losing the past

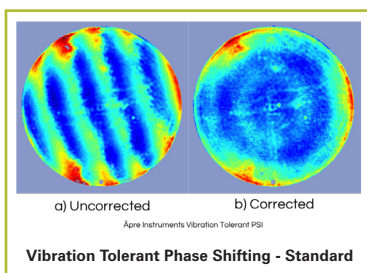
The clean internet browser-like user interface has no overlapping windows to get in the way. Add .dat format compatibility plus modern .h5 file formats, and REVEAL brings modern benefits, yet is compatible with your historic data.



A complete metrology package — selected parameters

APPLICATIONS	FILTERS	ANALYSIS	RESULTS
<input checked="" type="checkbox"/> BASIC <ul style="list-style-type: none"> • Form • Radius of Curvature 	<input checked="" type="checkbox"/> Masking <input checked="" type="checkbox"/> Auto Aperture <input checked="" type="checkbox"/> Reference Subtract <input checked="" type="checkbox"/> Box <input checked="" type="checkbox"/> Erosion (inside/out) <input checked="" type="checkbox"/> Median <input checked="" type="checkbox"/> Individual Zernike <input checked="" type="checkbox"/> Spike <input checked="" type="checkbox"/> Affine Transforms	<input checked="" type="checkbox"/> Acquisition Modes <ul style="list-style-type: none"> • Vibration • Tolerant PSI • Wavelength Shifting • Vibration Insensitive <input checked="" type="checkbox"/> Zernike <input checked="" type="checkbox"/> 3D View <input checked="" type="checkbox"/> PVr <input checked="" type="checkbox"/> Islands <input checked="" type="checkbox"/> ISO10110-14 <input checked="" type="checkbox"/> Ogive	<input checked="" type="checkbox"/> ISO & Seidel <input checked="" type="checkbox"/> PV, RMS <input checked="" type="checkbox"/> PVr <input checked="" type="checkbox"/> Tilt <input checked="" type="checkbox"/> Power (Zernike) <input checked="" type="checkbox"/> Power (Deviation) <input checked="" type="checkbox"/> Astigmatism <input checked="" type="checkbox"/> Coma <input checked="" type="checkbox"/> SA3 <input checked="" type="checkbox"/> 1D Profiles <input checked="" type="checkbox"/> Lengths

*Optional Analysis Package



OEM Application ?
REVEAL directly interfaces with your OEM interferometer with flexibility to meet your most stringent requirements

Measure... Click... REPORT

Use built in standard reports or create a library with the simple HTML editor

Consistency and simplicity...

