

## Fizeau Interferometer for Surface and Wavefront Metrology

### 4-Megapixel Imaging and 4 Optional Sources

System Overview		S50 HR	S100 HR	S150 HR
Output Diameter		51 mm (2 inch)	102 mm (4 inch)	153 mm (6 inch)
Optical Centerline		108 mm (4.25)	108 mm (4.25 inch)	133 mm (5.24 mm)
Focus Range		±2 meters	±2 meters	±4.5 meters
Interferometer Size (L x W x H)		63 x 29 x 18 cm	70 x 32 x 26 cm	90.2 x 40.8 x 23.9 cm
Weight		25 kg (55 lbs)	33 kg (73 lbs)	50 kg (110 lbs)
Measurement Techniques	Vibration Tolerant PSI & Vibration Insensitive Carrier Fringe			
Alignment System	2-Spot with reticle with 2° Capture Range			
Light Source	Laser, Laser Diode, SCL and Wavelength Shifting			
Laser Frequency Stability	<0.0001 nm			
Coherence Length	>100 meters			
Output Polarization	Circular (Other options available)			
Camera Resolution	2044 x 2044			
Shutter Speed (shortest)	9 μs			
Camera Digitization	12 bit			
Computer & Software	High-Performance PC, Windows 10 64-bit OS & REVEAL Software			
Mounting Configurations	Horizontal or Vertical			
Accessories	Optical Accessories and Mount			
Performance				
Image Resolution	50 μm	100 μm	150 μm	
Image Distortion		<0.06%		
Fringe Resolution		>600 fr/aperture		
Retrace Error³ @ 512 fringes		< λ/15 ⁴		
RMS Simple Repeatability¹		<0.6 nm RMS 1σ – with NO averaging		
RMS Wavefront Repeatability²		<0.6 nm RMS 1σ – with NO averaging		
Measurable Part Reflectivity	0.1%to 40% direct and >41% with attenuation filter or coatings			
Environment				
Temperature	15°C to 30C			
ΔT/Δt	<1.0°C/15 min			
Humidity	5 to 95% relative, non-condensing			
Vibration Isolation	Isolation System recommended for VTPSI			

<sup>1</sup> RMS Simple Repeatability is defined as 2X the standard deviation of the RMS for 36 sequential measurements (0 averages) of a short plano cavity

<sup>2</sup> RMS Wavefront Repeatability is defined as the mean RMS difference between a synthetic reference (defined as the average of a 11 36 sequential measurements) and each measurement plus 2X the standard deviation

<sup>3</sup> Retrace Error is defined as the PV residual error between a nulled measurement (the reference), subtracted from a measurement with 500 fringes of tilt, and expressed by the first 36 Zernike polynomials

<sup>4</sup>  $\lambda/20$  optionally available

## Traceable Measurement to Report <5 seconds

### Traceable Metrology

Saved profiles/process trees and report library assure analysis stability user to user, day to day. Data saved with all raw data, masks and filters...you know today and tomorrow how you got your results.

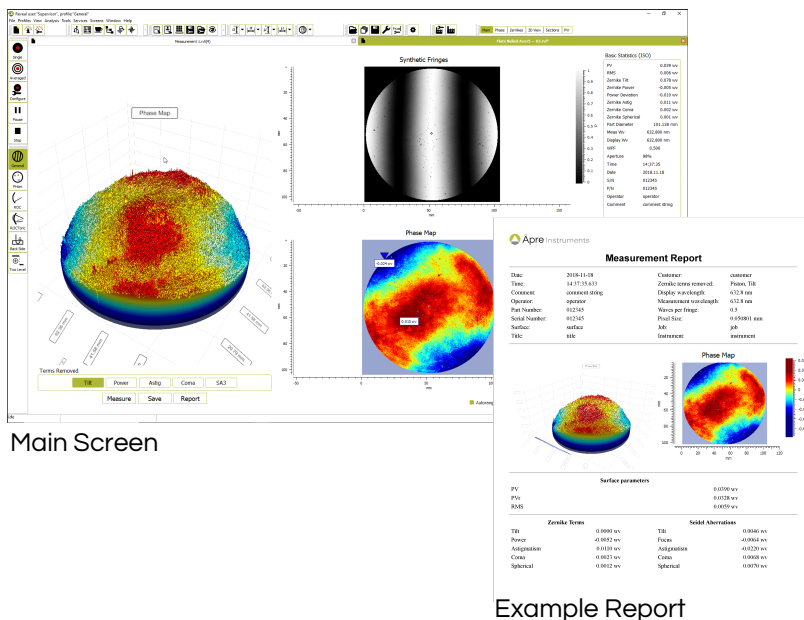
### Easy to Learn, Backward Compatible & 64 bit Stable

Internet browser like design is familiar and uncluttered and easy to learn and with .dat file formats you can save new data compatible with you database or analyze old data on REVEAL. With 64 bit Windows 10 operation large data sets are easily handled and your IT department will appreciate the W10 security.

### A Complete Metrology Package - selected parameters

APPLICATIONS	FILTERS	ANALYSIS	RESULTS
<ul style="list-style-type: none"> <li>✓ BASIC <ul style="list-style-type: none"> <li>• Form</li> <li>• Radius of Curvature</li> </ul> </li> <li>✓ Fourier<sup>1</sup> <ul style="list-style-type: none"> <li>• MTF</li> <li>• PSF</li> <li>• PSD</li> </ul> </li> <li>✓ Optical Shop Testing<sup>1</sup> <ul style="list-style-type: none"> <li>• Wedge</li> <li>• Polished</li> <li>• Homogeneity</li> <li>• Corner Cube</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>✓ Masking</li> <li>✓ Auto Aperture</li> <li>✓ Reference Subtract</li> <li>✓ Box</li> <li>✓ Erosion (inside/out)</li> <li>✓ Median</li> <li>✓ Individual Zernike</li> <li>✓ Spike</li> <li>✓ Affine Transforms</li> </ul>	<ul style="list-style-type: none"> <li>✓ Acquisition Modes <ul style="list-style-type: none"> <li>• Vibration</li> <li>• Tolerant PSI</li> <li>• Wavelength Shifting</li> <li>• Vibration Insensitive</li> </ul> </li> <li>✓ Zernike</li> <li>✓ 3D View</li> <li>✓ PVr</li> <li>✓ Islands</li> <li>✓ ISO10110-14</li> <li>✓ Ogive</li> </ul>	<ul style="list-style-type: none"> <li>✓ ISO &amp; Seidel</li> <li>✓ PV, RMS</li> <li>✓ PVr</li> <li>✓ Tilt</li> <li>✓ Power (Zernike)</li> <li>✓ Power (Deviation)</li> <li>✓ Astigmatism</li> <li>✓ Coma</li> <li>✓ SA3</li> <li>✓ 1D Profiles</li> <li>✓ Lengths</li> </ul>

<sup>1</sup>Optional Analysis Package



### What Users are Saying

*"I found the analysis tree to be the most valuable feature of the REVEAL software. It gives the user visibility into the many layers of data processing that occur when making a measurement."*

H. Balonek, Optikos

*"REVEAL software is intuitive, easy to navigate and very capable in a myriad of applications, but the thing I appreciate most about it is the extensive, exceptionally organized, visually pleasing and effortlessly generated reports."*

S. Iles, Edmund Optics

*"[REVEAL] has a very user friendly interface and offers multiple ways to view the data. This makes analysis and qualification quick and easy."*

A. Godina, Supply Chain Optics"



# Apre

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