Äpre Instruments™

The S-Series | SR

The NEW General Purpose Interferometer

apre-inst.com

Fizeau Interferometer for Surface and Wavefront Metrology

1-Megapixel Imaging and 4 Optional Sources

System Overview	S50|SR	S100|SR	S150|SR
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, SCI and Wavelength Shifting		
Laser Frequency Stability	<0.0001 nm		
Coherence Length	>100 meters		
Output Polarization	Circular (Other options available)		
Camera Resolution	1022 x 1022		
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	100μm	200 μm	300μm
Image Distortion	<0.1%		
Fringe Resolution	>300 fr/aperture		
Retrace Error[3] @ 256 fringes	< λ/15 [4]		
RMS Simple Repeatability[1]	<0.6 nm RMS 1σ – with NO averaging		
RMS Wavefront Repeatability[2]	<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
$\Delta T/\Delta t$	<1.0°C/15 min
Humidity	5 to 95% relative, non-condensing
Vibration Isolation	Isolation System recommended for VTPSI

[1] RMS Simple Repeatability is defined as 2X the s tandard deviation of the RMS for 36 sequential measurements (0 averages) of a short plano cavity
[2] RMS Wavefront Repeatability is defined as the mean RMS difference between a synthetic reference (defined as the a verage of a ll 36 sequential measurements) and each measurement plus 2X the standard deviation
[3] 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 expres sed by the first 36 Zernike polynomials
[4] λ/20 optionally available

Specifications subject to change without notice

REVEAL™

Data Acqusition & Analysis Software

apre-inst.com

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.

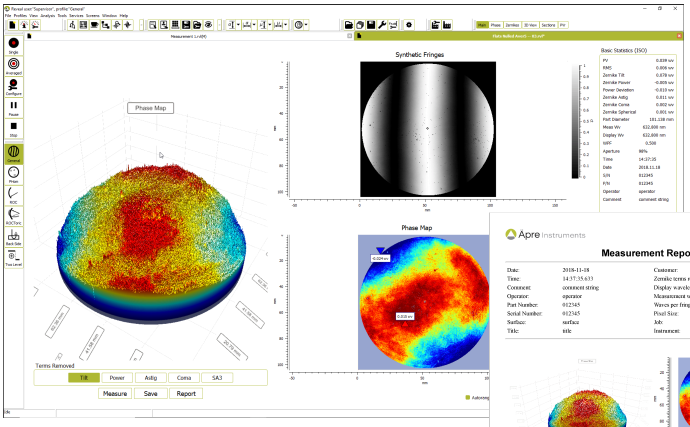
Easy to Learn, Backward Compatible & 64 bit Stable

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.

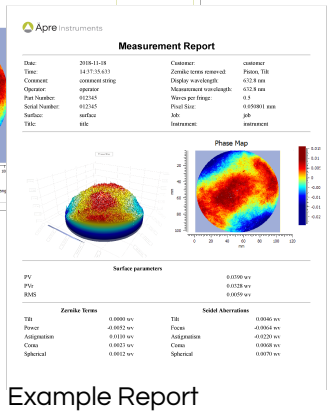
A Complete Metrology Package - selected parameters

APPLICATIONS	FILTERS	ANALYSIS	RESULTS
√ BASIC • Form • Radius of Curvature	√ Masking	√ Acquisition Modes • Vibration Tolerant PSI • Wavelength Shifting • Vibration Insensitive	√ ISO & Seidel
√ Fourier[1] • MTF • PSF • PSD	√ Auto Aperture	√ Zernike	√ PV, RMS
√ Optical Shop Testing[1] • Wedge • Polished Homogeneity • Corner Cube	√ Reference Subtract	√ 3D View	√ PVr
	√ Box	√ PVr	√ Tilt
	√ Erosion (inside/out)	√ Islands	√ Power (Zernike)
	√ Median	√ ISO10110-14	√ Power (Deviation)
	√ Individual Zernike	√ Ogive	√ Astigmatism
	√ Spike		√ Coma
	√ Affine Transforms		√ SA3
			√ 1D Profiles
			√ Lengths

[1]Optional Analysis Package



Main Screen



Example Report

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"

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