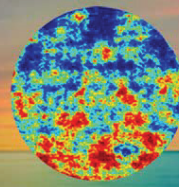
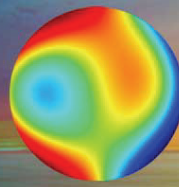


# Ä-Series | 9MP



## SYSTEM OVERVIEW

### Ä100|9MP

### Ä150|9MP

Interferometer Type	Fizeau Configuration	
Function	Surface, wavefront, TTV, and angle metrology	
Output Diameter	102 mm (4 inch)	153 mm (6 inch)
Optical Centerline	108 mm (4.25 inch)	133 mm (5.24 inch)
Focus Range (encoded)	±2.0 meters	±4.5 meters
Interferometer Size (L x W x H)	70 x 32 x 26 cm	90.2 x 40.8 x 23.9 cm
Weight	33 kg (73 lbs)	50 kg (110 lbs)
Phase Measurement Techniques	Fast/Sensitive Spectral Synchronous, Vibration-Tolerant PSI Plus Vibration-Insensitive Carrier Fringe	
Alignment System	2-Spot with reticle with ±2° Capture Range	
Three Optional Light Sources	SCI SpectrÄ 2.0, HeNe Laser, and ÄTLas Wavelength Shifting	
HeNe Laser Frequency Stability	<0.0001 nm	
Temporal Coherence Length	SCI SpectrÄ 2.0 ≤2 meters, HeNe Laser >100 meters, ÄTLas ≤3 meters	
STAR: Spatial Coherence Control	Reduced coherent noise when averaging Add SpectrÄ for low temporal & spatial coherence performance <sup>6</sup>	
Output Polarization	Circular (Linear optional for birefringent part measurement)	
Camera Resolution	3000 x 3000	
Camera Frame Rate(maximum)	90 Hz	
Shutter Speed (shortest)	9 μs	
Camera Digitization	8 bit	
Computer & Software	High-Performance PC, Windows 11 64-bit OS & REVEAL Software	
Mounting Configurations	Horizontal or Vertical	
Accessories	Optical Accessories and Mounts Available	

## PERFORMANCE

Image Resolution <sup>5</sup>	85 μm 12 l/mm	125 μm 8 l/mm
Image Distortion	<0.06%	
Fringe Resolution <sup>7</sup>	≥900 fr/aperture	
Retrace Error <sup>3</sup> @ 512 fringes	≤ λ/15 <sup>4</sup>	
RMS Simple Repeatability <sup>1</sup>	≤0.6 nm RMS 2σ	
RMS Wavefront Repeatability <sup>2</sup>	≤0.6 nm RMS 2σ	
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

<sup>1</sup> RMS Simple Repeatability Test: The RMS for 36 sequential measurements with each measurement the average of 16 measurements each of a short <2 mm plano cavity

<sup>2</sup> RMS Wavefront Repeatability Test: Measure 36 sequential Measurements (M1, M2,...M30) each consisting of 16 averages. Then average all 36 measurements create a synthetic reference, "Ref". RMS wavefront repeatability equals the 2X the standard deviation of all 30 Ref - M<sub>n</sub> results.

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

<sup>4</sup> λ/20 optionally available

<sup>5</sup> Resolution is detector limited at 80% of Nyquist or 1200 lines/aperture for a 9MP sensor.

<sup>6</sup> Spatial and Temporal Artifact Reduction for unique low noise performance when combined with SCI SpectrÄ source, with laser alignment ease

<sup>7</sup> Design performance as modeled in Zemax with 2 meter cavity length

# REVEAL

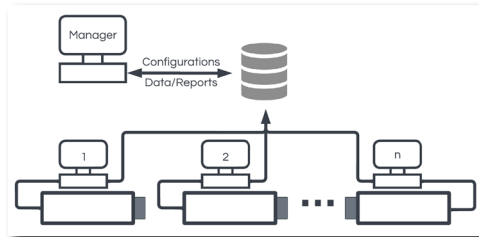
## Metrology Software for Interferometers

### Introducing REVEAL 23

#### REVEAL 23 Starts with the REVEAL Launcher

##### **UNIQUE and NEW!: No interferometer is an island...with REVEAL 23**

Load measurement recipes and report forms from a central controlled library. Automatically save data to your database. Eliminates setup errors, and user-to-user variations by standardizing the entire measurement process from a central, password controlled location.

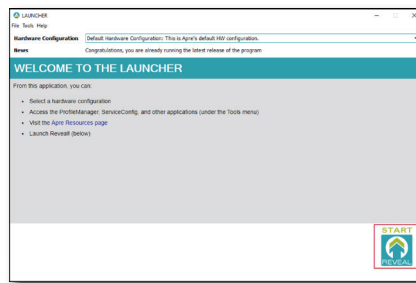


##### **NEW! Setup user access and passwords:**

In the Profile Manager grant or restrict global or individual access to measurements. Assign what can be edited, where data is saved, and then password (encrypted) protect.

##### **NEW! Configure your hardware with a click:**

ÄPRE state-of-the-art interferometers use multiple sources, which means multiple hardware configurations. Just switch the source, click the hardware configuration and launch REVEAL 23 to start measuring.



#### Inside REVEAL 23

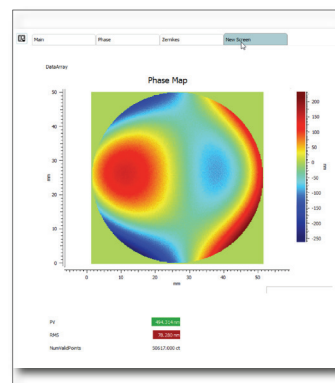
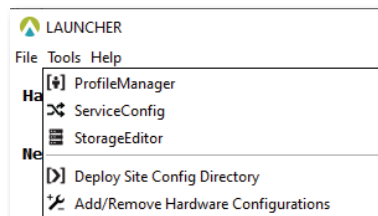
**REVEAL functionality is maintained:** All the menus, results, screens, data and setups are maintained. So there is no learning curve.

**More Analyses are Standard:** Standard analysis, Optical Shop Testing and Fourier Analysis are included in the standard package so licensing is easier.

**NEW! Create Your Own Custom Screens:** With an easy to use editor, display the graphs and results required and even set GO/NOGO tolerance flags on important results. Then save your custom screen for future use. The screen at the right was configured in five minutes! It's that easy.

**NEW! "Undo" mask shapes.** You're in the middle of creating a mask and you want to make a change. The new Undo function takes you back one step to retry. Less time lost, and more freedom to experiment.

**NEW! Event Log:** Sometimes "things" happen. To correct an error and to get production up and running the Event Log gives you just the important information. Now you can act on it, or contact ÄPRE with the key information, and save time.



Over nine years ago REVEAL innovated interferometer software

- Traceable metrology via the analysis tree, saved with as-measured (.rvl) data
- Data analysis based on international standards and leading laboratories worldwide
- Apply filters/masks to data along the entire analysis tree
- Fast, consistent reporting via a default, and customizable report library
- 64-bit operation to handle modern 9-Megapixel and larger cameras without crashing
- Remote training and debugging via TeamViewer
- Clean, browser like, non-overlapping screens
- Compatible with historic .dat data files

Now REVEAL 23 tightens QC with enterprise control, increases security, and lets you customize screens



Contact ÄPRE to get REVEAL 23 on your system today.



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