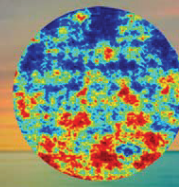
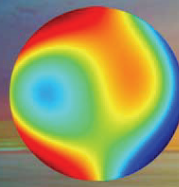


# Ä-Series | 4MP



SYSTEM OVERVIEW	Ä50 4MP	Ä100 4MP	Ä150 4MP
Interferometer Type	Fizeau Configuration		
Function	Surface, wavefront, TTV, and angle metrology		
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 inch)
Focus Range (encoded)	±0.5 meters	±2.0 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)
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 (pixels)	2048 x 2048		
Camera Frame Rate(maximum)	180 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>	63 μm 16 l/mm	125 μm 8 l/mm	188 μm 5.3 l/mm
Image Distortion <sup>7</sup>	<0.06%		
Fringe Resolution	≥600 fr/aperture		
Retrace Error <sup>3</sup> @ 512 fringes	≤ λ/15 <sup>4</sup>		
RMS Simple Repeatability <sup>1</sup>	≤0.06 nm RMS 2σ		
RMS Wavefront Repeatability <sup>2</sup>	≤0.35 nm RMS 2σ		
Measurable Part Reflectivity	0.1%to 40% direct and >41% with attenuation filter or coatings		
OPERATIONAL ENVIRONMENT			
Temperature	15°C to 30C		
ΔT/Δt for Accurate Measurements	<1°C per 15 min		
Humidity	5 to 95% relative, non-condensing		
Vibration Isolation	Isolation System recommended for VTPSI		

<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 - Mn 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 800 lines/aperture for a 4MP 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  
<sup>8</sup> These parameters outline the conditions under which the system can operate; they do not represent the environmental stability required to meet specified performance.



# REVEAL

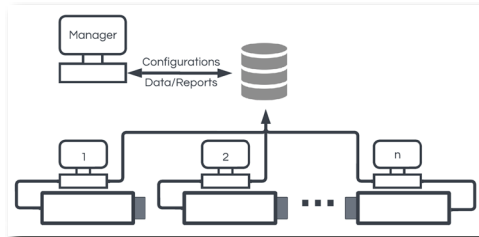
## Metrology Software for Interferometers

### Introducing REVEAL 25

#### REVEAL 25 Starts with the REVEAL Launcher

##### **UNIQUE and NEW!** No interferometer is an island...with REVEAL 25

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.

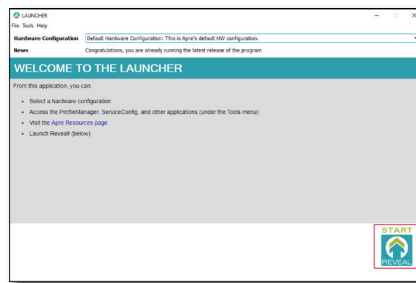


##### **NEW!** Setup user access and passwords:

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 25 to start measuring.



#### Inside REVEAL 25

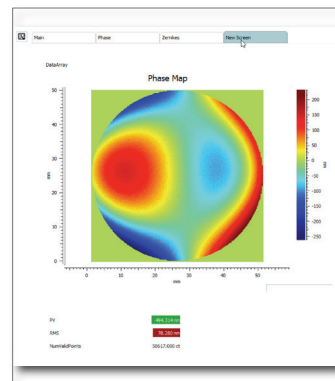
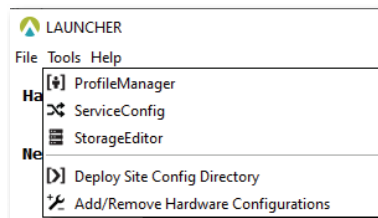
**REVEAL functionality is maintained:** All the menus, results, screens, data and setups are maintained. So there is no learning curve.

**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 ten 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 25 tightens QC with enterprise control, increases security, and lets you customize screens



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sales@apre-inst.com

Contact ÄPRE to get REVEAL 25 on your system today.