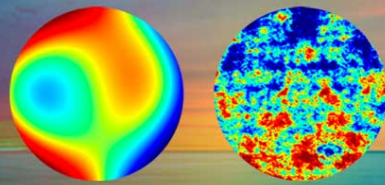# HIGH PERFORMANCE TWYMAN-GREEN LUPI

L9 | 1MP

Twyman-Green LUPI Interferometer for System Wavefront Testing
Available with Temporal Phase Shifting Acquisition or Vibration Insensitive Phase Measurement for Harsh Environments

System Overview

Output Beam Diameter	9 mm
Optical Centerline	108 mm
Focus Range	Fixed
Interferometer Size (L x W x H)	41.5 x 54.5 x 10.0 cm
Weight	5.7 kg
Measurement Techniques	Mechanical Phase Shifting or Vibration Insensitive Carrier Fringe
Alignment System	Threaded, external on-axis visible laser
Light Source	633 & 1550 nm external to interferometer
Coherence Length	20 meter
Output Polarization	Circular
Camera Resolution	1022 x 1022
Shutter Speed (shortest)	9 μs
Digitization	8 bit
Computer & Software	High-Performance PC, Windows 11 64-bit OS & REVEAL Software
Mounting Configurations	Horizontal or Vertical or Adjustable
Accessories	5-Axis mount & Diverger Lenses
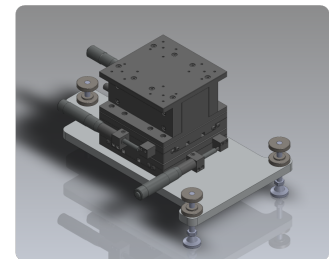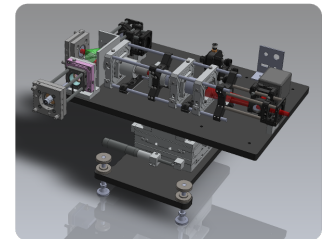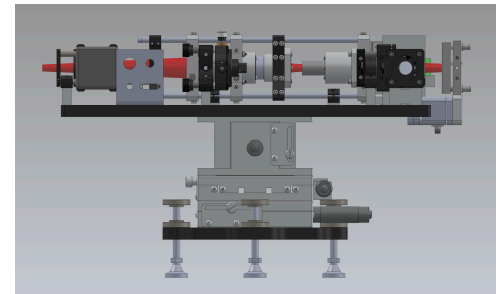
Performance

Image Resolution	~400 l/aperture
Image Distortion	<1%, 0.5% typical
Fringe Resolution	~200 fr/aperture
Retrace Error[3] @ 200 fringes	< λ/10
RMS Simple Repeatability[1]	<0.6 nm RMS 1σ
RMS Wavefront Repeatability[2]	<0.6 nm RMS 1σ
Measurable Part Reflectivity	0.5% to 100% Specify

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 PSI

Äpre™

[1] 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
[2] 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 standard deviation of all 30 Ref - Mn results.
[3] 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
[4] λ/20 optionally available
[5] Resolution is detector limited at 80% of Nyquist or 800 lines/aperture for a 4MP sensor.
[6] Spatial and Temporal Artifact Reduction for unique low noise performance when combined with SCI SpectrÄ source, with laser alignment ease
[7] Design performance as modeled in Zemax wtih 2 meter cavity length

Specifications subject to change without notice

REVEAL

Metrology Software for Interferometers

Introducing REVEAL 24

REVEAL 24 Starts with the REVEAL Launcher

UNIQUE and NEW!: No interferometer is an island...with REVEAL 24
Load measurement recipies 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.
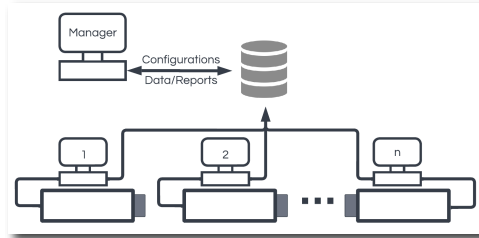
NEW! Setup user access and passwords:
In the Profile Manager grant or restrict global or individual access to measurements. Assign what can be edited, where data is saved, and then password (encrypted) protect.

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 24 to start measuring.
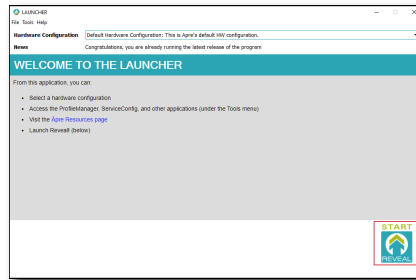
Inside REVEAL 24

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.

Contact ÄPRE to get REVEAL 24 on your system today.
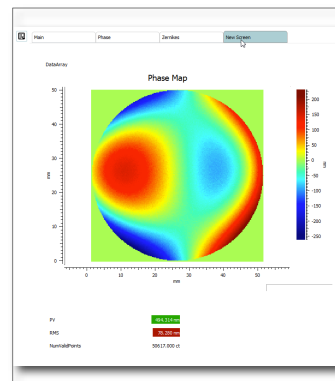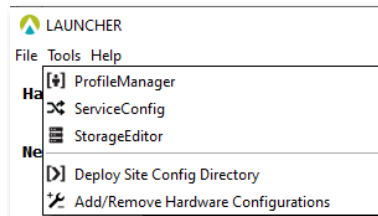
Over nine years ago REVEAL innovated interferometer software

- *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*
- *Compatable with historic .dat data files*

Now REVEAL 24 tightens QC with enterprise control, increases security, and lets you customize screens

Äpre

Äpre Instruments Inc.
2440 West Ruthrauff Rd.
Tucson, AZ 85705
520.639.8195
sales@apre-inst.com