

Fizeau phase-shifting interferometer with patented QPSI™ acquisition for true on-axis common path surface form metrology in the presence of vibration.

SYSTEM OVERVIEW

Measurement Capability	Measures surface form of reflective materials and optics, and transmitted wavefront of SWIR transmissive optics and systems
Data Acquisition Modes	PSI- temporal phase-shifting interferometry QPSI- vibration robust temporal phase-shifting interferometry DynaPhase™-vibration insensitive instantaneous interferometry (option)
Alignment System	Quick Fringe Acquisition System (QFAS) with twin spot reticle
Test Beam Diameter	4 inch (100 mm); 6 inch (150 mm)
Alignment FOV	4 inch: ± 3 degrees 6 inch: ± 2 degrees
Optical Centerline	108 mm (4.25 in.)
Optical Magnification	1X – 5X Variable Zoom
Pupil Focus Range	4 inch: ± 2.5 m from output aperture 6 inch: ± 5.5 m from output aperture
Camera Details	Resolution: 1200 x 1200 pixels Frame Rate: 53 Hz (PSI)
Acquisition Time	430 ms – 990 ms
Polarization ¹	Nominally circular <0.35
Mounting Configuration	Horizontal or vertical
Computer and Software	High-performance Dell PC, Windows 10 64-bit, and Mx™ software
Accessories	Compatible with standard ZYGO Verifire mechanical accessories. 1.06 μm reference optics (TF & TS) available
Physical Envelope (LWH)	4 inch: 69 x 31 x 34 cm (27.3 x 12.1 x 13.4 in.) 6 inch: 92 x 31 x 34 cm (36.4 x 12.1 x 13.4 in.)
Weight	4 inch: ≤ 85 lb (38 kg) 6 inch: ≤ 100 lb (45 kg)

LASER DETAILS

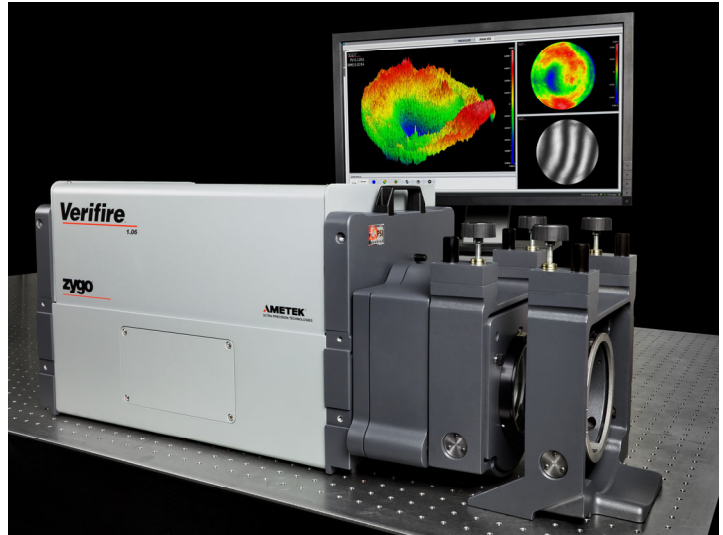
Class	IIb
Wavelength	1064 nm
Output Power	<350 mW
Coherence Length	>40 m
Beam Polarization	Circular
System CDRH Class	1M

UTILITY REQUIREMENTS

Power	100 to 240 VAC, 50/60 Hz
Compressed Air	80 psi (5.5 bar); dry and filtered source (required for optional vibration isolation system)

PERFORMANCE

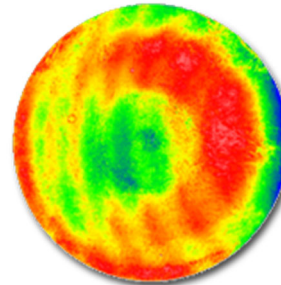
RMS Simple Repeatability ²	$\lambda/7,500$, 0.14 nm (2σ)
RMS Wavefront Repeatability ³	$\lambda/1500$, 0.71 nm (mean + 2σ)



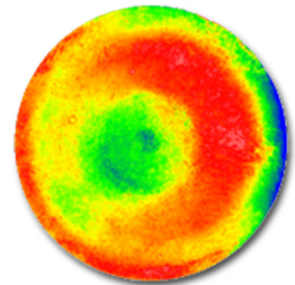
OPERATIONAL ENVIRONMENT⁴

Temperature	15 to 30°C (59 to 86°F)
Rate of Temp. Change	<1.0°C per 15 min
Humidity	5 to 95% relative, non-condensing

Comparison of acquisitions in vibrating cavity



PSI



QPSI

Notations

- Circular polarization is defined as (Imax-Imin) where I is the intensity at the center of the output aperture measured through a rotating Glan prism.
- RMS Simple Repeatability is defined by 2X the standard deviation of the RMS for 36 sequential measurements (16 averages) of a short 4 inch plano cavity.
- RMS Wavefront Repeatability is defined by the mean RMS difference plus 2X the standard deviation for the differential between all even numbered measurements and a synthetic reference (defined as the average of all odd numbered measurements); 36 sequential measurements (16 averages) form the basis for calculation.
- These parameters outline the conditions under which the system can operate; they do not represent the environmental stability required to meet specified performance.

**LASER RADIATION
DO NOT VIEW DIRECTLY
WITH OPTICAL INSTRUMENTS
CLASS 1M LASER PRODUCT**

Distribution in the UK & Ireland



**Characterisation,
Measurement &
Analysis**

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