

Industrial grade high power Fizeau 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 transparent optics and imaging 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 (102 mm) or 6 inch (152 mm)
Alignment FOV	4 inch: ±3 degrees 6 inch: ±2 degrees
Optical Centerline	4.25 in. (108 mm)
Camera Details	Resolution: 1200 x 1200 pixels Frame Rate: 160 Hz Digitization: 8 bit
Acquisition Time	81 – 188 ms (PSI, QPSI)
Optical Zoom	1-5X encoded continuous (1-50x digital)
Polarization	Nominally circular (1.2:1 or better)
Pupil Focus Range	4 inch: ±2.5 m 6 inch: ±5.5 m
Computer and Software	High-performance Dell PC, Windows 10 64-bit, Mx™ software
Mounting Configuration	Horizontal or vertical
Remote Control	Wired and wireless remote
Additional Options	Encoded focus Switchable polarization kit
Accessories	See ZYGO <i>Laser Interferometer Accessory Guide, OMP-0463</i>
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)
Warranty	3 years laser source, 1 year system

LASER DETAILS

Laser Source	High power stabilized HeNe
Class	IIIa (meets 3R ANSI requirements)
Wavelength	633 nm
Frequency Stabilization	<0.0001 nm
Output Power	>3 mW
Coherence Length	>100 m

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)



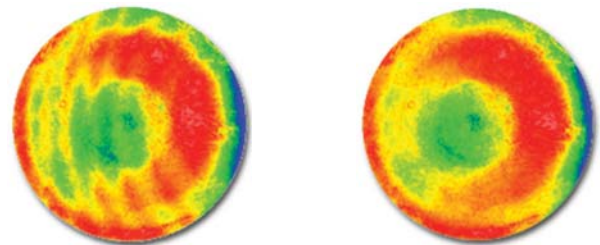
OPERATIONAL ENVIRONMENT⁽¹⁾

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
Vibration Isolation	Not required with QPSI or DynaPhase; recommended with PSI acquisition

PERFORMANCE⁽²⁾

RMS Simple Repeatability ³	<0.06 nm, λ/10,000 (2σ)
RMS Wavefront Repeatability ⁴	<0.35 nm, λ/1,800 (mean + 2σ)
Peak Pixel Deviation ⁵	<0.5 nm, λ/1,200 (99.5 th %)

Comparison of acquisition modes in vibrating cavity



PSI

QPSI

Notations

1. These parameters outline the conditions under which the system can operate; they do not represent the environmental stability required to meet specified performance.
2. Performance qualified with stable temperature set point between 20-23°C.
3. 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.
4. 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.
5. Peak Pixel Deviation is defined by the 99.5th percentile of the pixel-wise standard deviation map for 36 sequential measurements (16 averages); this result measures time varying behavior (or Type A uncertainties).



Specifications subject to change without prior notice.