

Fizeau extreme high definition interferometer with patented QPSI™ acquisition for true on-axis common path metrology, and DynaPhase™ vibration insensitive acquisition, for precise metrology of optical surfaces and system wavefront in any environment.

### SYSTEM OVERVIEW

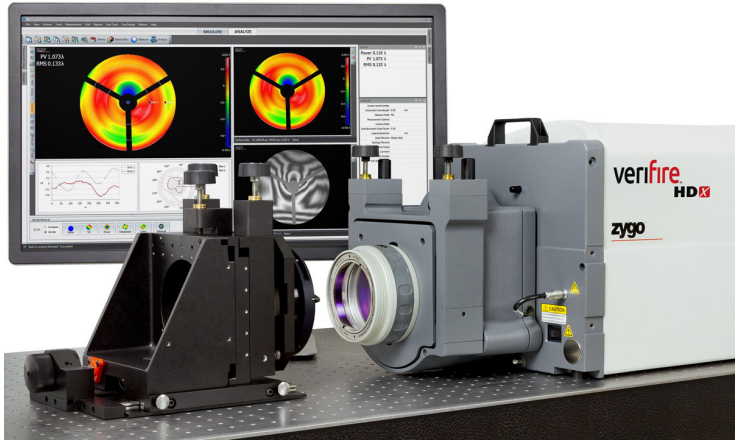
Measurement Capability	Measures surface form of reflective materials and optics, and transmitted wavefront of transparent optics
Data Acquisition Modes	PSI- temporal phase-shifting interferometry QPSI- vibration robust temporal phase-shifting interferometry DynaPhase™-vibration insensitive instantaneous 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: 3392 x 3392 pixels Frame Rate: 96 Hz Digitization: 8 bit
Acquisition Time	130 - 300 ms
Magnification	1-50X digital
Polarization	Nominally circular (1.2:1 or better)
Pupil Focus Range	4 inch: ±2 m 6 inch: ±4.5 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 with common interferometer function controls
Accessories	See the ZYGO Laser Interferometer Accessory Guide, OMP-0463
Physical Envelope (LWH)	69 x 31 x 34 cm (27.3 x 12.1 x 13.4 in.)
Weight	≤85 lb (38 kg)
Warranty	3 years laser source, 2 years 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

### OPERATIONAL ENVIRONMENT<sup>(1)</sup>

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	QPSI enables metrology in environments with vibrations of a magnitude of up to ~150 nm. A passive isolation system is recommended with PSI acquisition.



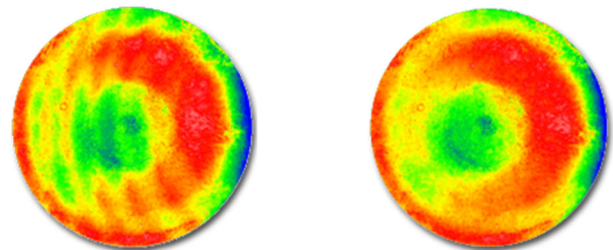
### UTILITY REQUIREMENTS

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

### PERFORMANCE<sup>(2)</sup>

RMS Simple Repeatability <sup>3</sup>	<0.06 nm, λ/10,000 (2σ)
RMS Wavefront Repeatability <sup>4</sup>	<0.35 nm, λ/1,800 (mean + 2σ)
Peak Pixel Deviation <sup>5</sup>	<0.5 nm, λ/1,200 (99.5 <sup>th</sup> %)
ITF <sup>6</sup>	>0.7 @ 8.2 cyc/mm

### Comparison of acquisitions in vibrating cavity



PSI 13 bucket algorithm

QPSI 5 ms shutter speed

### 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 99.5<sup>th</sup> percentile of the pixel-wise standard deviation map for 36 sequential measurements (16 averages); this result measures time varying behavior (or Type A uncertainties).
6. Instrument Transfer Function (ITF) defines the spatial resolution capability of the instrument at ½ Nyquist. ITF specified for a 4 inch aperture with short plano cavity.



Specifications subject to change without prior notice.