

DynaFiz is a new instantaneous Fizeau-type interferometer optimized for dynamic metrology in the presence of extreme vibrations and air turbulence. Mx™ software with LivePhase™ enables real-time Zernike analysis for active alignment and dynamic testing.

SYSTEM OVERVIEW

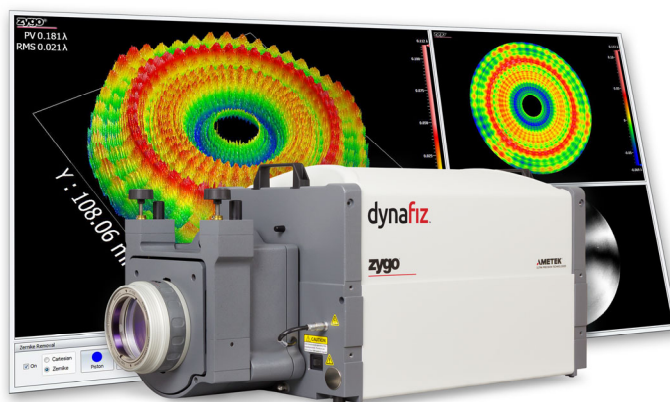
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|-------------------------|--|
| Measurement Capability | Measures surface form of reflective materials and optics, and transmitted wavefront of transparent optics |
| Measurement Technique | DynaPhase™ dynamic acquisition |
| Alignment System | DynaPhase alignment wizard with integrated calibration Quick Fringe Acquisition System (QFAS) with twin spot reticle for PSI |
| 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 /600 x 600 pixels Frame Rate: 50 Hz /82 Hz Digitization: 10 bit |
| Magnification | 1X Fixed (1-50X digital); 3 Position Zoom Turret 1X/1.7X/3X (option) |
| 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 and Mx software |
| Mounting Configuration | Horizontal or vertical |
| Remote Control | Wired and wireless remote with common interferometer function controls |
| Additional Options | <ul style="list-style-type: none"> PMR (Phase Measuring Receptacle)- enables mechanical PSI and QPSI vibration robust acquisition. CARS (Coherent Artifact Suppression)- minimizes artifacts from wavefront shearing, speckle or mottle. |
| Accessories | See the ZYGO Laser Interferometer Accessory Guide, OMP-0463 |
| Physical Envelope (LWH) | 60 x 31 x 34 cm (23.7 x 12.1 x 13.4 in.) Optional PMR adds 9 cm (3.6 in.) length |
| Weight | ≤80 lb (36 kg) Optional PMR adds 10 lb (5 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 |

UTILITY REQUIREMENTS

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

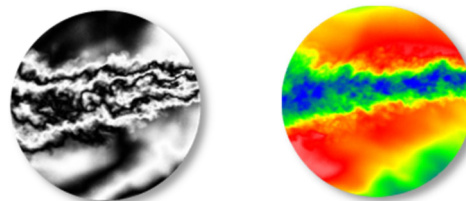


OPERATIONAL ENVIRONMENT⁽¹⁾

| | |
|----------------------|--|
| 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 for DynaPhase acquisition; recommended with PSI acquisition |

PERFORMANCE²

| | |
|--|--|
| RMS Simple Repeatability ³ | <0.06 nm, λ/10,000 (2σ) |
| RMS Wavefront Repeatability ⁴ | Dynamic: <1.0 nm, λ/600 (mean + 2σ) PSI/QPSI: <0.25 nm, λ/2500 (mean + 2σ) |
| Peak Pixel Deviation ⁵ | Dynamic: <2.0 nm, λ/300 (99.5 th %) PSI/QPSI: <0.5 nm, λ/1200 (99.5 th %) |
| Fringe Resolution ⁶ | Dynamic: 250 fringes (all magnifications) PSI/QPSI: 500 fringes (all magnifications) |
| Exposure Time | 12 μsec (minimum) |
| LivePhase | Real-time phase with Zernike fit |
| Phase Movies | Records events ≤82 frames/sec and generates AVI movie and raw data file |
| External Movie Trigger | TTL signal |



Notations

1. Defines conditions under which the system can operate; does not represent environmental stability required to meet specified performance.
2. Performance qualified with the temperature set point between 20-23° C.
3. RMS Simple Repeatability is defined by 2X the std dev of the RMS for 36 sequential measurements (16 avgs) of a short plano cavity at 1X zoom.
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) at 1X zoom form the basis for calculation.
5. Peak Pixel Deviation is defined by the 99.5th percentile of the pixel-wise std dev map for 36 sequential measurements (16 averages); this result measures time varying behavior (or Type A uncertainties) at 1X zoom.
6. The approximate number of tilt fringes in the part image that can be resolved by the interferometer.



Specifications subject to change without prior notice.