

GPI FlashPhase

Fizeau interferometer system includes a shuttered digital camera and FlashPhase™ dynamic phase acquisition software.

SYSTEM

Measurement Capability	Measure overall form of reflective surfaces and optics, and transmitted wavefront of optics
Measurement Technique	Laser-based, three-dimensional interferometry, carrier fringe phase acquisition with proprietary analysis algorithms
Test Beam Diameter	4 inch (102 mm) or 6 inch (152 mm)
Mounting Options	Horizontal or Vertical
Optical Centerline	4.25 in. (108 mm)
Alignment System	Quick Fringe Acquisition System (QFAS) with twin spot reticule
Zoom Range	1:6X
Alignment Field of View	4 inch: ±3 degrees 6 inch: ±2 degrees
Pupil Focus Range	4 inch: ±1 m 6 inch: ±2 m
Part Viewing	Live Display on computer monitor
Computer and Software	High-performance Dell PC with ZYGO MetroPro™ software

PERFORMANCE

Repeatability of rms ⁽¹⁾	< 0.17 nm λ/6,000 (2σ)
Camera Resolution	640 x 480 pixels 1K x 1K pixels (optional)
Fringe Resolution ⁽²⁾	640 x 480: 180 fringes 1K x 1K: 380 fringes
Acquisition Rate	640 x 480: 75 Hz 1K x 1 K: 43 Hz
Minimum Settable Exposure Time ⁽³⁾	20 microseconds
Digitization	8 bits

LASER

Type	Helium-Neon, Class II
Wavelength	632.8 nm
Output Power	≤1 milliwatt
Polarization	Nominally circular (1.2:1 or better)
Coherence Length	Greater than 328 ft (100 m)

PHYSICAL CHARACTERISTICS

Dimensions (HWD) (without handles)	4 inch: 12.1 x 23.6 x 12.1 in. (308 x 600 x 308 mm) 6 inch: 12.1 x 32.6 x 12.1 in. (308 x 828 x 308 mm)
Weight	4 inch: 75 lb (34 kg) 6 inch: 90 lb (41 kg)



UTILITY REQUIREMENTS

Power	100 to 240 VAC, 50/60 Hz
-------	--------------------------

OPERATIONAL ENVIRONMENT

Temperature	15 to 30°C (59 to 86°F)
Rate of Temp. Change	<1.0°C per 15 min
Humidity	5 to 95% relative, noncondensing
Vibration Isolation	Not required, optional

TEST PART CHARACTERISTICS

Material	Various; glass, super-finished metals, ceramics, and plastics
Preparation	None; measurements are noncontact and nondestructive and performed under ambient conditions
Reflectivity	0.1% to 100% (based on transmission element)

OPTIONS

- 4 inch or 6 inch output aperture
- Linear or switchable polarization
- 1K x 1K camera
- Wireless remote control
- Guide rail and accessories

See the *GPI and VeriFire Accessory Guide, OMP-0463* for a complete listing of available options.

Notations

- 1 Repeatability of the quoted statistic is for 100 measurements of the same cavity in a stable environment, with 16 phase averages per data set. The specification represents the 2σ value of the statistic.
- 2 The approximate number of tilt fringes in the part image that can be resolved by the interferometer at 1X.
- 3 Parameter is the minimum settable exposure time allowed by the camera. The minimum usable exposure time is cavity reflectivity dependent with higher reflectivity parts allowing shorter exposure times than low reflectivity parts.