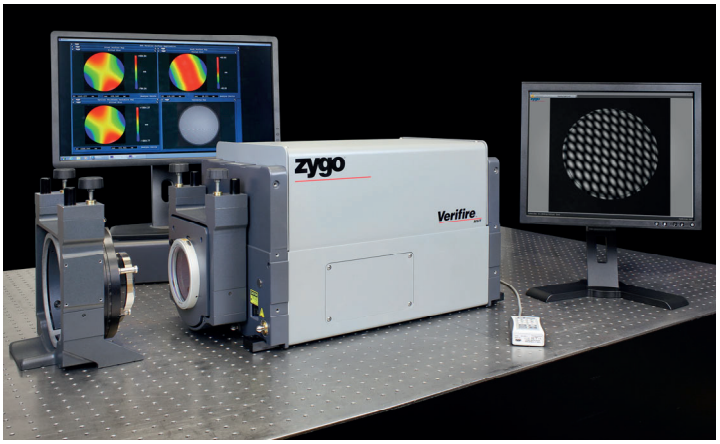
Verifire MST

Specifications

High performance laser Fizeau interferometer with patented FTPSI™ technology for surface material characterization. The Verifire MST operates in wavelength shifting and multi-surface test acquisition modes enabling simultaneous metrology of multiple surfaces and material homogeneity characterization.



System Overview

Measurement Capability	Measures surface form of reflective materials and optics, and transmitted wavefront of transmissive optics and systems
Measurement Technique	Laser based, three-dimensional, optical phase-shifting interferometry with patented FTPSI™ (Fourier Transform Phase Shifting Interferometry) technology
Alignment System	Quick Fringe Acquisition System (QFAS) with twin spot reticle
Test Beam Diameter	4 inch (102 mm) or 6 inch (150 mm)
Optical Centerline	4.25 in. (108 mm)
Optical Magnification	1-4X motorized, encoded zoom; fixed zoom lenses 1X, 1.4X, 2X, 2.8X optional
Alignment FOV	4 inch: ±3 degrees 6 inch: ±2 degrees
Pupil Focus Range	4 inch: ±2.5 m 6 inch: ±5.5 m
Polarization[1]	Nominally circular <0.35
Camera Resolution	1000 x 1000 pixels
Camera Frame Rate	48 Hz
Acquisition Time	0.5 sec – 65 sec
Mounting Configuration	Horizontal or vertical
Computer and Software	High-performance PC, Windows 64-bit, and MetroPro software
Accessories	Available on request
Physical Envelope (LWH)	4 inch 59 x 32 x 34 cm 6 inch 82 x 32 x 34 cm
Weight	4 inch ≤85 lb (38 kg) 6 inch ≤100 lb (45 kg)

Laser Details

Class	IIIb
Wavelength	633 nm
Output Power	<5 mW
Coherence Length	>100 m
CDRH Classification	Class 1M, as output from aperture

Utility Requirements

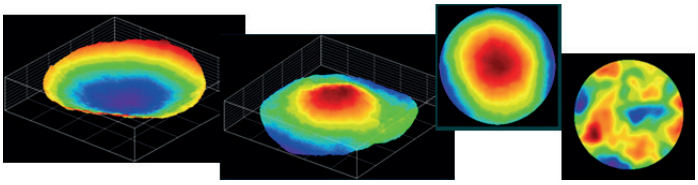
Power	100 to 240 VAC, 50/60 Hz
Compressed Air	80 psi (5.5 bar); dry and filtered source (required for optional vibration isolation system)

Performance

RMS Simple Repeatability [2]	<0.5 nm, λ/2,100 (2σ)
RMS Wavefront Repeatability [3]	<1.0 nm, λ/1,000 (mean + 2σ)

Operational Environment[4]

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



Front *Back* *Thickness* *Homogeneity*

Notations

1 Circular polarization is defined as Imax-Imin/Imax+Imin where I is the intensity at the center of the output aperture measured through a rotating Glan prism.

2 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.

3 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.

4 These parameters outline the conditions under which the system can operate; they do not represent the environmental stability required to meet specified performance.

Specifications subject to change without prior notice.

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