FizCam™ 3000

4D Technology

Dynamic Laser Interferometer

Quality Without Correction

The FizCam 3000 interferometer is an entirely new on-axis dynamic Fizeau design, providing highly accurate measurement of optical grade surfaces even in the presence of vibration and air turbulence.

The FizCam 3000 incorporates patented technology using a single camera, high-speed optical phase sensor that makes a wavefront measurement in less than 1 millisecond. Because acquisition time is so short, the FizCam 3000 can be used under almost any conditions, even for measuring moving parts, without additional vibration isolation.

With a completely on-axis design, the dynamic FizCam 3000 interferometer eliminates the inherent aberrations, software corrections and painstaking calibrations and alignments typical of tilted beam Fizeau systems. The result is remarkable measurement quality and ease of setup.

Complete Measurement System

The FizCam 3000 is a turnkey instrument that includes the interferometer, 4Sight™ advanced wavefront analysis software, and complete high-speed computer system. In addition, the FizCam 3000 offers true 4X motorized optical zoom imaging, and a hand controller for remote control of Focus and Zoom.

FizCam 3000

Accessory Optics

With the FizCam 3000, it is not necessary to replace expensive accessories. 100 millimeter Fizeau accessories from a wide variety of manufacturers are compatible. When you need additional components, 4D Technology offers precision components to cover almost any need.

Industry Leading Analysis, Standard

4Sight wavefront analysis software features a user-friendly interface with unmatched simplicity, analysis features and graphical displays. The Measurement Console display aids alignment and execution of single, averaged, burst or continuous data acquisition. The Measurement Flow interface lets you visualize the entire measurement data flow, from raw acquisition through masking, reference subtraction, terms removal, etc. The unique Measurement Stack enables complex data manipulation and comparison. Zernike, Seidel, geometric and diffraction analyses are easy to perform. Comprehensive data sharing capabilities let you read, write, save and print from most file types, including MetroPro IDL®, MatLab®, Opticode®, Vision®, HDF5 and CodeV®. Generating phase movies to characterize deforming surfaces and moving parts is simple and straightforward.

FEATURES

- Vibration Insensitive Dynamic Operation
- Motorized Remote Operation Hand Controller
- 4X Optical Zoom Imaging
- Bayonet Mount Optics
- 1000 x 1000 Pixel Camera

APPLICATIONS

- Long Cavity Measurements
- Optical Testing of Moving Parts
- Production Environment Ready
- Environmental Chamber Testing

3280 E Hemisphere Loop, Ste 146, Tucson, AZ 85706 • Tel: +1 (520) 294-5600 • Fax: +1 (520) 294-5601 • www.4DTechnology.com

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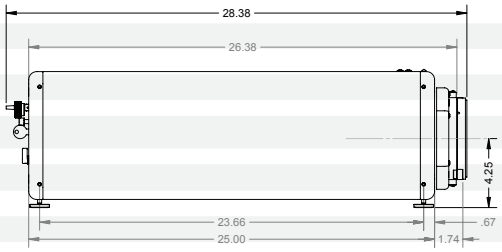
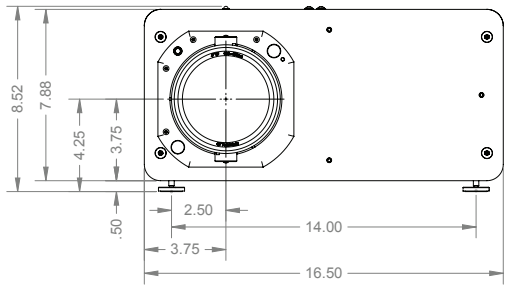
Specifications

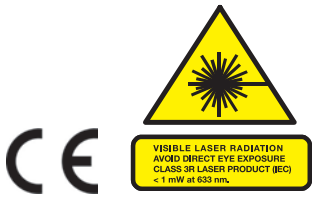
Configuration	**Model 3000**
Description	Turnkey vibration insensitive dynamic Fizeau interferometer system
Acquisition Mode	Instantaneous Phase Shifting with pixelated phase sensor or Temporal PSI
Laser Source	632.8 nm HeNe, 100 m coherence
Output Beam	100 mm collimated, standard; 150 mm optional
Reference Optics	Bayonet mounted
	100 mm model: 10.8 cm (4.25 in) optical axis, horizontal or side
	150 mm model: 13.3 cm (5.25 in) optical axis, horizontal or side
Optical System	Fizeau with coherent imaging, test and reference beams fully on-axis
Zoom	4X, optional zoom encoder
Pupil Focus Range	Motorized, ±2 m, at all zoom settings
Alignment	Twin spot
Camera	1K x 1K pixels standard, 10-bit progressive scan with CameraLink™
Hand Controller	Remote control of focus and zoom
Data Array	Selectable: full, half, quarter resolution
Exposure	< 1 ms typical
Computer System	Minimum Dual Core 2.4 GHz processor
	4 GB RAM, 320 GB hard drive, CDRW and DVDRW
	22 in LCD monitor, keyboard and mouse
Operating System	Windows XP®
System Software	4Sight™ Analysis Software with User Manual
	Instantaneous Phase Shifting data acquisition
	Reference generation, subtraction, data averaging, masking
	2D and 3D surface maps
	Zernike / Seidel / Slope / Geometric / Fourier Analysis
	Fiducial aided data set mapping
	HDF4 / HDF5 data format standard, others supported
	Upgrades free during warranty period
Physical Envelope	100 mm model: 72.4 x 42.0 x 22.9 cm (28.5 x 16.5 x 9 in)
	150 mm model: 98.0 x 44.5 x 25.4 cm (38.6 x 17.5 x 10 in)
Weight	100 mm model <45 kg (100 lbs); 150 mm model < 56.5 kg (124.5 lbs)
Power consumption	< 750 Watts
Temperature Range	Operational: 60–80° F, non-condensing
	Storage: 30–100° F, non-condensing
Warranty	One Year, limited, on-site system installation and operator training
System Performance	
Acquisition Rate	> 14 frames/sec display
	> 14 frames/sec burst acquisition
Sample Reflectivity	1 to 100%
RMS Repeatability	< 0.0002 waves*
Uncalibrated Accuracy	< λ/20 transmission flats (typical with reference subtract)

100 mm model dimensions



*One sigma for RMS of 10 data sets of calibration mirror, each data set being an average of 128 measurements.





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